

Paul B. Thompson
David M. Kaplan
Editors

Encyclopedia of Food and Agricultural Ethics

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Encyclopedia of Food and Agricultural Ethics

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Encyclopedia of Food and Agricultural Ethics

With 29 Figures and 26 Tables

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Preface

When we met with our coeditors and representatives of Springer in May 2010 to begin conceptualizing the *Encyclopedia of Food and Agricultural Ethics*, we were thinking along the lines of something that would be a cross between a traditional general-interest encyclopedia and a “handbook.” We envisioned a work that would help scholars and relatively advanced students obtain a quick introduction to the issues and the published literature that was most relevant to a broad range of issues in the ethics of food and agriculture. We took “ethics” to imply thoughtful and scholarly studies on the normative dimension of topics rather than rubrics or remonstrations on right action. We wanted to create a resource for those interested in learning more about the ethical dimension of food and agriculture rather than a collection of arguments for particular ethical positions.

All areas in practical ethics suffer from a deep ambiguity of this kind. On the one hand, for many people, ethics simply implies an uncomplicated matter of doing the right thing. “Being ethical” would be understood in contrast to blatantly unethical actions such as the intentional contamination of Chinese milk products (including infant formula) with melamine in 2008. No one needs scholarly research to understand why this action was unethical, just as no one needs philosophy to explain why it is wrong to leave farm animals to suffer and die from a lack of feed and water. On the other hand, the circumstances that lead to these blatantly unethical actions can be better understood (and hopefully prevented) through careful research on the institutions and incentives faced by human actors. Ethical analysis can shed light on how ethical situations come about and what we might do in response.

In addition, there are some topics whose ethical dimensions are less obvious such as biofuel production and international trade regulations. These topics require careful research and analysis to reveal the ethical issues. Sometimes, they are beset with contradictory and conflicting views on why and even whether issues of right and wrong are involved at all. It is these case examples that give rise to scholarship by philosophers, social scientists, and agricultural specialists. The *Encyclopedia of Food and Agricultural Ethics* was conceived to provide overviews of the work that had already been done on key areas of practice in food and agricultural systems of production, distribution, and consumption. The aim was to facilitate more and better scholarship in all aspects of the field.

And so, we entered the project with the expectation that it would be a long and arduous process to recruit authors and to compile a volume of the scope

that the subject deserved. The volume that emerged has met our expectations in many respects; yet, there are two ways in which the original vision has been significantly altered.

First, many of the topics that we placed on the original list had far less existing scholarship than we expected. There is still a lack of scholarly maturity in the field of food and agricultural ethics. The problem we faced is that an encyclopedia is a work of tertiary literature. It should contain neither research (primary literature) nor review articles summarizing original papers (secondary literature). It should instead summarize established information in the field. As editors, we found ourselves in the unfortunate position of too little to edit. Worse, we had to exclude fine works of original ethics scholarship more appropriate for a journal such as Springer's *Journal of Agricultural and Environmental Ethics* than for a reference work. It is our hope that today's original scholarship on food and agricultural ethics will soon develop a secondary literature that deserves its own encyclopedia entry.

Second, the continued growth of digital publishing has shaped our editorial practice in ways that we did not fully anticipate. While electronic access was a crucial aspect of the original design, we did not fully appreciate the impact of this format on the timeliness of content. As the first entries began to trickle in during 2011 and 2012, we began to realize that the pace of scholarship (and of the issues themselves) threatened to date some very fine entries by the time that the entire edition would be done. It became clear that the cutoff date for declaring the encyclopedia to be "complete" and ready for publication was becoming increasingly arbitrary. At the end of the day, we decided that it was more important to go to press than to cause further delay in making the fine work that we had already compiled available. Entries will continue to be added, and existing entries will be updated in the online edition. The *Encyclopedia of Food and Agricultural Ethics* will be a living document.

August 2014

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A

Absentee Landlords and Agriculture

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Synonyms

Absentee landlords; Absentee landowners;
Farmland ownership; Female landowners;
Landlord-tenant relationship

Introduction

Absentee landlords of agricultural land do not live on their land but lease it to others to farm. These can include retired farmers and ranchers, individuals who inherit land but live elsewhere, and those who buy land for recreational or investment purposes and reside elsewhere (Petrzelka et al. 2013).

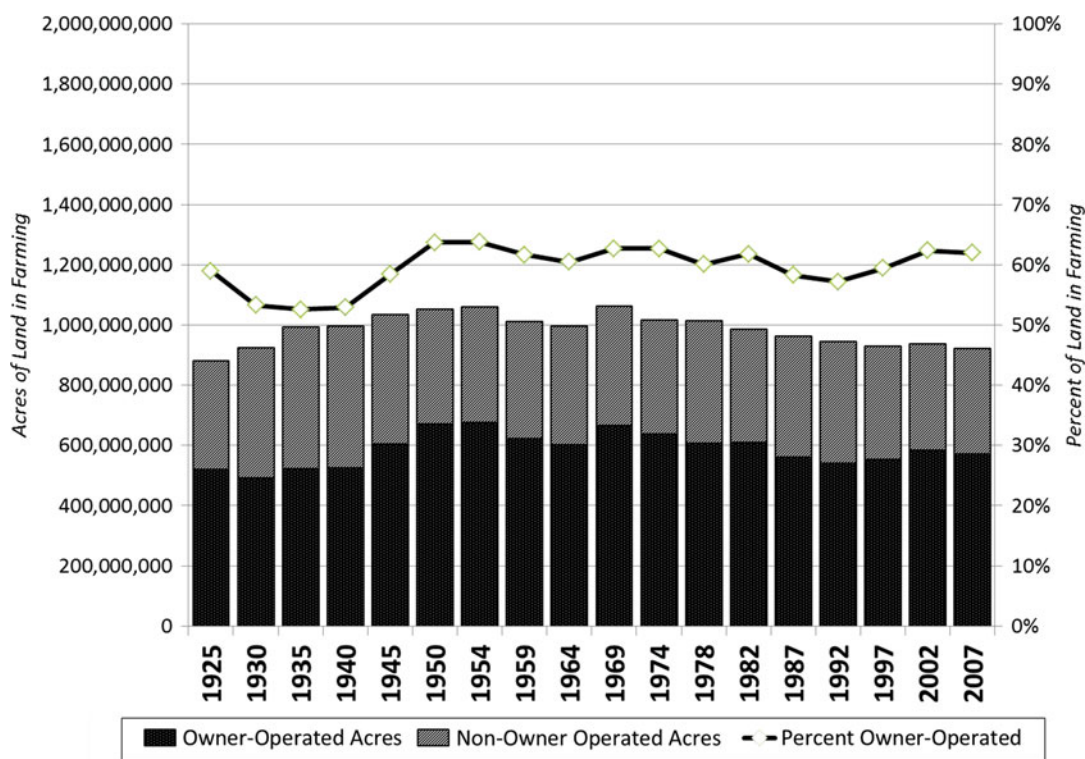
An “unprecedented level of absentee ownership” of rangelands has occurred in the US West (Haggerty and Travis 2006, p. 825); and in the Midwest, an increasing number of farmland owners are no longer living on their land or even in the state where their land is located (Duffy and Smith 2008). However, no nationwide data set exists on this growing group of agricultural landowners, and little research exists about differences between residential landlords (who reside on the land) and absentee landlords

(who reside elsewhere). Absentee ownership and absentee landlords of agricultural land are major issues that are poorly understood, yet have ethical, social, and environmental implications.

This entry discusses absentee landlords in the larger context of US agricultural land ownership. Trends in US agricultural and absentee landownership as they relate to rented farmland are first examined. Then, an overview of research on agricultural landlord-tenant operator relationships is presented, discussing both resident and absentee landlords and incorporating ethical, social, and environmental implications which may occur with the landlord-tenant relationship. The entry provides suggestions for future work on the topic of absentee landlords and concludes by providing information on organizations working with absentee landlords.

Overview of US Agricultural Ownership

In the early twentieth century, most rented farmland in the United States was operated (i.e., farmed) by full tenants (who owned none of the land they operated), reflecting in large part the legacy of plantation agriculture in the south, with many former slaves working as sharecroppers for white landowners. The Great Depression and World War II brought the collapse of full tenancy and sharecropping. Since that time, a growing share of US farmers are part owners, who rent in addition to own land they farm (Jackson-Smith and Petrzelka, [forthcoming](#)).



Absentee Landlords and Agriculture, Fig. 1 Total acres and percent of acres by operator tenure status (Source: US Census of Agriculture, Various Years)

Figure 1 illustrates that the overall proportion of land that is operated by the owner in the United States has not changed dramatically over time. What has changed is the proportion of land that is owned and operated by part owners. Approximately 922 million acres of US farmland (42 % of the Nation's land base) was operated in 2007 (U.S. Census of Agriculture 2012). Thirty-seven percent of this land was operated by full-owners (i.e., they own all the land they operate). Part owners comprised one-quarter of US farms, owned slightly less than half of the total land they operated, and dominated the market for rented farmland. Their importance in the US farm sector increased rapidly from the 1920s through the early 1980s and has remained relatively constant since then. Currently, full tenants comprise just 6 % of farms and operate 9 % of farmland.

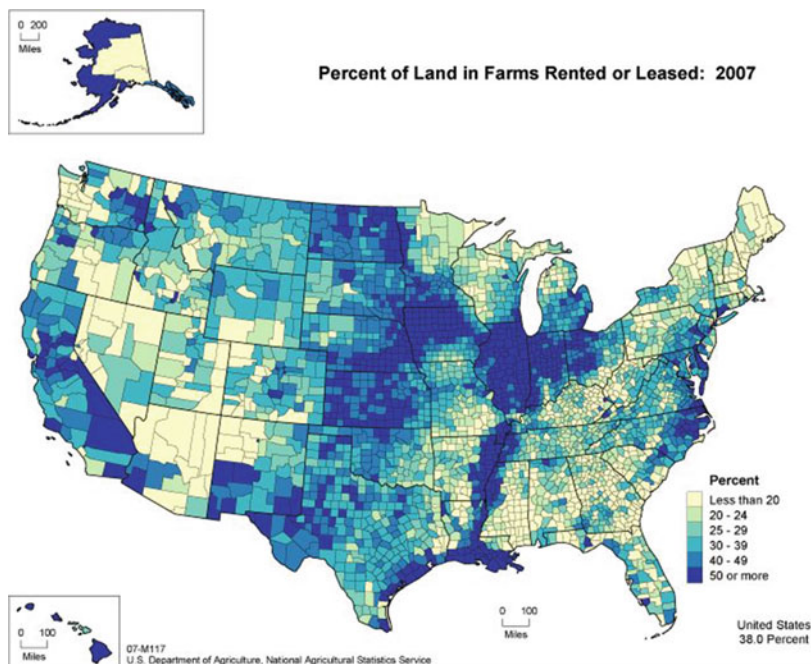
Figure 2 shows the proportion of US farmland rented or leased by county, according to the 2007

Census of Agriculture. There is a general tendency for many of the most commercially important agricultural areas to see higher rates of land leasing (Nickerson et al. 2012). As evidenced, several geographic regions (including the Mid-western corn belt, Great Plains wheat region, Central Valley in California, Lower Mississippi Delta, and Atlantic Seaboard) have a majority of farmland that was operated by someone other than the owner. These variations in rates have been explained in part by laws in some states that limit farmland ownership by corporations, nonfarmers, or non-US residents (Nickerson et al. 2012).

The US Census of Agriculture does not collect data from agricultural landlords. However, national trends on agricultural landlords have been collected by the Agricultural Economics and Land Ownership Survey (AELOS), conducted by the National Agricultural Statistics Service of the US Department of Agriculture (USDA).

Absentee Landlords and Agriculture,

Fig. 2 Percent of land in farms rented or leased in 2007 (Source: 2007 Census of Agriculture, Agricultural Atlas Maps; Available online at: http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Ag_Atlas_Maps/Operators/Tenure/07-M117.php)



AELOS collects information from both landowners and tenants and is the only nationwide source of information about agricultural landlords. The most recent AELOS survey was conducted in 1999. Findings show only 13 % of individual (or partnership) landlords lived on the farmland that they rented out (i.e., were resident landowners rather than absentee). While about a third of these landlords lived on some type of farm, the largest group reported residences in cities, towns, or urban areas. This urban group provided nearly 45 % of the total rented acreage reported in the 1999 AELOS. Demographically, most private farmland landlords were relatively older – over half were over 65 and these individuals provided 50 % of all leased farmland in the United States. Most private landlords also reported jointly owning their farmland, and female landlords were likely to lease out more of the land they own (Jackson-Smith and Petrzela, *forthcoming*).

The AELOS has been conducted only twice (in 1988 and 1999), and therefore, it is difficult to infer trends or derive information about current agricultural landlord patterns. More detailed and recent data come from smaller geographies. For example, the Iowa Land

Ownership Survey has collected panel data from a representative statewide sample of land parcels and landowners in Iowa since 1949 (Duffy and Smith 2008). (Data has been collected in 1949, 1958, 1970, 1976, 1982, 1992, 1997, and 2002.) While national trends suggest that the total proportion of farmland that is owner-operated land (thus not rented) has hovered near 60 % since World War II, the Iowa study shows a pronounced decline in the proportion of land under owner-operator status (dropping from 55 % in 1982 to 40 % in 2007). Scholars who have conducted research on absentee landowners in small geographic pockets speculate that this decline in owner-operator status is partly because of the aging of the farmland owner population. For example, in Iowa, the share of land owned by persons over 65 increased from 29 % in 1982 to 55 % in 2007 (Duffy and Smith 2008). This change is also reflected in the increased importance of older female agricultural landlords across the Midwest (Petrzelka and Marquart-Pyatt 2011).

Based on the limited research and data on absentee landowners of agricultural land, it appears the majority of these landowners fall

under the category of nonoperator owners. These nonresident landowners, as compared to those living on the land, are much more likely to live in urban areas, less dependent financially upon the land, and much more likely to own land for amenity reasons (e.g., recreation, vacationing) than production purposes (Petrzelka et al. 2009; Petrzelka 2012).

Overview of Agricultural Landlords: Resident and Absentee

With the large amount of farmland rented, the landlord-tenant relationship clearly plays a significant role in US agriculture. The few empirical studies on the landlord-tenant relationship in the United States mainly focus on resident landlords and show that tenants often have substantial managerial control over the land. For example, Gilbert and Beckley (1993) studied decision making in two Wisconsin townships and found landlords and tenants in agreement that the tenants were the primary decision makers for operational decisions on the farm such as types of commodities to grow, application of particular soil conservation practices, and participation in specific federal programs.

Effland et al. (1993) examined landlords' involvement in farm management decisions using the 1988 AELOS data and historical documents and found that female landlords were less likely to make farm management decisions than male landlords and were more dependent on the farmland for income. In addition, women were more likely to have inherited their farmland and tended to be older than male landlords. Also using the 1988 AELOS data, Rogers and Vandeman (1993) found those landlords who were more involved in decision making had past farming experience, lived closer to the land, and rented on a crop-share basis (wherein typically landlord and tenant share management decision making, risks, and benefits) rather than a cash rent basis (wherein tenant pays rent for use of the land, typically makes all management decisions, incurs all risk, obtains all benefits). Rogers and Vandeman (1993) also found that female

landlords were less likely than male landlords to participate in choices of fertilizer and chemical practices on leased land and that younger landlords, both male and female, were more involved in on-farm management decisions, as were those who identified themselves as farmers.

Constance et al. (1996) were the first to analyze both resident and absentee landlords in their Missouri study of landlords' involvement in decision making on rented agricultural land. Decision making focused on crops grown, tillage practices, types of pesticides, pesticide application, and participation in soil conservation and water quality programs. The researchers found resident and absentee landlords were most likely to be involved in conservation program decisions, least likely to be involved in pesticide decisions and overall, and less involved in all of the decision-making practices. Focusing more specifically on predictors of landlord involvement in pesticide selection, Constance et al. (1996) found among resident landlords that being male, having a higher dependence upon the farmland for income, and having a farming background were the most significant factors predicting involvement. For absentee landlords, the distance the landlord lived from the land was a predictor (where those living closer were more involved) as was a higher dependence upon the farmland for income and age; with younger landlords more involved, the researchers argued, possibly due to their increased environmental consciousness.

While many landlords and tenants in Gilbert and Beckley's 1993 study reported they were very satisfied with the landlord-tenant relationship, the researchers argue (1993, p. 578) that in some instances, the tenants appeared to be exploiting their landlords, who are often "retired farmers, small landowners, and widows."

This potential exploitation resulting from the landlord-tenant relationship is evidenced in studies from Iowa. In a study of resident and absentee landlords, Eells (2008) found deception of female landlords occurring with some tenant relationships. This deception occurred particularly in terms of potential soil conservation measures, which would be presented to the female landlord by the male tenant most often in "an authoritative

way as not being very practical or effective” (p. 67). Wells (2003) found maintaining peace in the family overrode preferences on conservation decisions for female resident and absentee landlords, particularly when ownership of the land was shared with family members and even more so when the tenant was also a family member. Female agricultural landlords interviewed noted the difficulty in sharing ownership with siblings as many decisions were made in order to keep peace in the family, and self-censorship by female landlords occurred with their male relatives and tenants. Carolan (2005, p. 396) also found self-censorship would occur by female landlords in Iowa who were reluctant to discuss implementing sustainable agricultural practices on their land with their tenants, fearing they would “scare away good tenants.” Carolan (2005, p. 402) stated, “all of the female landlords described inequitable power relations between themselves and their male tenants. Specifically, they expressed feelings of exclusion [and] alienation [from the farm decision making].”

Expanding this research beyond Iowa, a 2011 study of landlords in four Great Lakes counties (Petrzelka and Marquart-Pyatt 2011) found female absentee landlords are less likely to be involved in decision making on their land if they are older, when their financial reliance on the land is greater, if they are retired, if they inherited the land, when they co-owned the land with a sibling, and when a local farmer was their tenant. For male absentee landlords, involvement in decision making on their land is reduced only when a local farmer farms the land. Thus, the subordinate landlord-dominant tenant possibility suggested by Gilbert and Beckley in 1993 appears to be occurring most frequently with female landlords.

Issues and Implications of Absentee Landownership

In 1993, Rural Sociologist Gene Wunderlich noted, “The change in the structural relationship between farming and land ownership implies potential changes in who bears risk, makes

production and investment decisions, protects the environment, and supports the community. Who, between farmer and landowners, decides whether farmland will go into a conservation reserve? Are non-operator owners less risk averse in production decisions than operator owners? Are absentee landowners as concerned about pesticide contamination of drinking water as resident owners? How are school budgets and community facilities affected by the level of absentee taxpayers?” (1993, p. 549).

The issues and implications Wunderlich posed in 1993 are even more relevant today. Those highlighted here include land management decision-making authority, agri-environmental behaviors, and impacts on local community well-being.

In general, the minimal research on resident and absentee landlords has consistently found that landlords of agricultural land allow their tenants to make operational decisions and that female landlords are less involved in decision making regarding land use compared with males. When looking specifically at involvement in conservation decision making, female landlords were much more likely to censor themselves, particularly when they co-owned the land and their tenants were family members. While a growing share of farmland owners are women, primarily widows (Duffy and Smith 2008), female landlords may still find themselves in a disadvantaged position because of patriarchal structures in rural communities.

The handful of studies which exist consistently suggest a power relationship between landlords and tenants. Contemporary research that explores how this power relationship is mediated by social relationships (gender, families, race or ethnic identity, and other direct social ties) and geography could both assist organizations working with absentee (and resident) agricultural landlords, as well as help advance social theories of ownership, rent, and power (Jackson-Smith and Petrzelka, [forthcoming](#)).

A second power issue is based on changes in the structure of agriculture and the relative availability of agricultural land. As demand for farmland increases because of rising global

commodity prices, and where available prime land required for commercial agriculture in the U.S. is in short supply, farm operators are forced to compete with one another to gain access to farmland. In areas with declining populations and increased consolidation of farming operations, landlords may have few options to rent out their land, which places tenants in a stronger position. In both cases, the actual relative power of the landlord and tenant is likely to be mediated by gender, family ties, and other social relationships (Jackson-Smith and Petrzelka, [forthcoming](#)).

Regarding environmental implications, scholars studying the adoption of conservation practices in agriculture have often assumed that farm operators are more likely to make investments in conservation practices (particularly control of soil erosion) when they have secure long-term access to and personal ownership interests in their farmland (e.g., Featherstone and Goodwin [1993](#); Caswell et al. [2001](#)). Nonoperator owners are less likely to be enrolled in USDA conservation programs such as Conservation Reserve Program (CRP) or the Wetlands Reserve Program (WRP) (Nickerson et al. [2012](#)) consistent with research that found that tenants were less likely than owner operators to adopt conservation practices that provide benefits over the longer term (Soule et al. [2000](#)).

In part, this can be explained by distance from the land. The farther removed physically absentee landowners are from their land, the more isolated they are from local social networks and contacts, both of which are well-established criteria for promoting recommended land management practices. In comparison to resident landowners, absentee owners are much less likely to have personal contact with local extension and natural resource agency program staff, leading to lower levels of scientific and traditional management knowledge about local environmental conditions (Redmon et al. [2004](#); Petrzelka et al. [2009](#)). Further, they are less familiar with the traditional land/farming culture and less attuned to conventional sources of information and agency.

Additionally, farmland owners without social ties to the local community may be less aware of

(and perhaps care less about) the effects of land management on neighboring property owners. Yung and Belsky ([2007](#)) found that absentee owners' goals for their land, such as increased wildlife, have resulted in detrimental environmental impacts on neighboring lands, and subsequent social issues, as the economic livelihood for those depending on the land is damaged.

One of the challenges is how to engage absentee owners in the community(ies) nearest where their land is located and provide education on the collective impact of their behavior. Some local conservation groups have attempted to pair new absentee landlords and experienced ranch managers in an informal effort to facilitate exchange of information and ideas (Yung and Belsky [2007](#)). It would be beneficial to conduct specific case studies to examine how these matchmaking efforts are working, both in terms of logistic and administrative mechanisms but also subsequent community impacts and longitudinal conservation effects on the landscape.

Additionally, there is little research on the role of absentee ownership on social issues such as community well-being, yet as absentee ownership increases, social relations in the community increasingly transcend locality. Theoretically, absentee landowners may be expected to be less engaged in community activities (because of the distance they live from the land and/or lack of strong social ties). This idea, though, has received relatively little empirical research.

It has been suggested that since some farm program payments are paid directly to landlords of agricultural land, when a large percentage of these landlords live in urban areas, it raises questions about whether farm program payments benefit rural community economies as intended (Drabenstott [2005](#); Nickerson et al. [2012](#)). One study examined the impact of absenteeism on rural community property tax revenues and found the benefits of Alabama's low property tax rates benefit absentee owners more than the local community, limiting the ability of local governments to meet citizen needs (Majumdar [2011](#)). More studies looking at the community impacts of absentee ownership are needed.

Summary

In summary, agricultural landlords are an understudied group, absentee farm landlords even more so. At present, no nationwide data set exists on this growing group of agricultural landowners. Yet, given the changing patterns of agricultural land ownership, the power issues occurring within decision making on the land, and ethical, social, and environmental implications of absentee landownership, absentee landlords are a group we can no longer neglect.

Various organizations have begun working with these landlords. For example, the Women Caring for the Land program (http://www.wfan.org/Women_Caring.html) provides a manual for female landlords (resident and absentee) that assists women in “learning more about their rights as landowners, about best management practices, about communicating effectively with their tenants, and about state and federal cost-share and loan programs available to help them.” The report can be found here: http://www.wfan.org/Women_Caring_files/WCLManualForWeb3-12.pdf. The Conservation Connect program in Iowa (<http://www.absenteelandowners.org/>) provides information to absentee landowners who are interested in natural resources conservation and who want to gain more information about available conservation programs, resources, and support. And Drake University’s Sustainable Farm Lease program provides landowners a tool kit of information that, among other things, introduces “landowners to the principle issues regarding the use of a lease agreement to promote a sustainable farm operation” and promotes “creative lease contracts that take landowner and tenant needs into consideration while enabling tenant’s to conserve farm resources” (<http://sustainablefarmlease.org/>).

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propose a short analysis of the issue against the current international backdrop of rising commercial pressures on land and then conclude.

Access to Land

Land is, in a first definition, “the part of the earth’s surface that is not covered by water” (*Oxford English Dictionary*). It is not simply “everything but water” but bears certain features that make it a particularly complex resource. Land does not move; it is heterogeneous and indispensable to almost all human activities; land is inherently linked to notions of identity and authority as well as territory, and it distinguishes itself by the power and depth of the sense of belonging people feel to it (Hall 2013). In this article, we will not consider the role of land as space and territory but solely as a resource, given our focus on food. The relationship between land and food will be examined below after a brief account of the right to food.

Access entails “the ability to benefit from things – including material objects, persons, institutions, and symbols” (Ribot and Peluso 2003, p. 154). Property is one of several possible (institutional) means toward achieving access. It is “a right in the sense of an enforceable claim to some use or benefit of something,” an enforceable claim being “one that is acknowledged and supported by society through law, custom, or convention” (Macpherson 1978, p. 3). Property refers only to claims that are sanctioned by socially legitimate politicolegal institutions—these institutions being effectively legitimized if their interpretation of social norms is heeded (Lund 2011; Sikor and Lund 2009).

We take the opposite of access to be exclusion, defined as “the ways in which people are prevented from benefiting from things” (Hall et al. 2011, p. 7). A good or resource is excludable insofar as it is feasible to exclude others from access to and use of the good or the resource (Ostrom 2003). While it has been convincingly argued that inclusion is intrinsic to property (Dagan 2011), the ability to exclude is generally regarded as a defining feature of property rights (Rose 1994).

Access to Land and the Right to Food

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Introduction

Examining the relationship between access to land and the right to food requires that we first define what we mean by access to land on the one hand—thus, both land and access—and the right to food on the other. We will then briefly draw the complex relationship existing between access to land and the right to food. Finally, we will

Right to Food

The right to food protects the right of all human beings to feed themselves in dignity, either by producing their food or by purchasing it. As authoritatively defined by the Committee on Economic, Social and Cultural Rights (CESCR) “The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement” (General Comment No. 12, para. 6).

The legal basis for the right to food in international law lies in Article 25 of the Universal Declaration of Human Rights, which recognizes the right of everyone “to a standard of living adequate for the health and well-being of himself and of his family, including food” (Universal Declaration of Human Rights, Art. 25). This right is also protected by the International Covenant on Economic, Social and Cultural Rights (ICESCR), which stipulates that states “recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions” and requires them to “take appropriate steps to ensure the realization of this right” (ICESCR, Art. 11.1). Finally, the right to food is recognized in the Convention on the Rights of the Child in Articles 24.2(c) and 27.3, as well as in a number of other international and regional instruments. The CESCR provides an authoritative interpretation of the content of the right to food and guidelines for its progressive realization in the abovementioned General Comment No. 12, and the Voluntary Guidelines adopted in 2004 under the auspices of the FAO complement it with recommendations.

Three key elements form the core content of the right to food: availability, accessibility, and adequacy. First, availability requires that food should be available from natural resources and/or in markets and shops, which means that there exist mechanisms to move food from the site of production to where it is needed in accordance with demand. Second, accessibility requires economic and physical access to food to be guaranteed, meaning that

food must be affordable (without compromising any other basic needs, such as school fees, medicines, or rent) and accessible to all, including to the physically vulnerable, such as children, the sick, persons with disabilities, or the elderly, for whom direct access to food may be difficult. Third, adequacy means that the food must be safe and satisfy dietary needs, taking into account the individual’s age, living conditions, health, occupation, sex, etc.

The right to food, like other economic, social, and cultural rights, places three forms of domestic obligations on States. First, the obligation to respect existing access to adequate food requires State parties not to take any measures that result in preventing such access. Second, the obligation to protect requires measures by the State to ensure that companies or individuals do not deprive other individuals of their access to adequate food. Third, the obligation to fulfill (facilitate) means the State must proactively engage in activities intended to strengthen people’s access to and utilization of resources and means to ensure their livelihood, including food security. Whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to fulfill (provide) that right directly.

The Food and Agriculture Organization of the United Nations developed the so-called PANTHER framework, deriving from human rights treaties a number of principles—namely, Participation, Accountability, Nondiscrimination, Transparency, Human dignity, Empowerment, and Rule of law (FAO 2009). States ought to follow these in order to create monitoring mechanisms, both judicial and nonjudicial, of decision-making processes to advance the right to food. Participation means that everyone should have the right to subscribe to decisions that affect them; accountability requires that elected representatives and government officials be held accountable for their actions through elections, judicial procedures, or other mechanisms; nondiscrimination prohibits arbitrary differences of treatment in decision-making; transparency entails that people be able to know processes, decisions, and outcomes; human dignity requires

that people be treated in a dignified way; empowerment requires that they are in a position to exert control over decisions affecting their lives; and rule of law, that every member of society, including decision-makers, must comply with the law (Cotula et al. 2008).

Access to Land and the Right to Food: Drawing the Relationship

The relationship between access to land and the right to food is not obvious, nor ubiquitous. In many cases, the right to food can entirely be fulfilled without access to land being provided through means such as formal employment with high-enough wages or off-farm business activities. However, for rural households in the global South, land is the strongest and oftentimes the only guarantee of relative food security (Cotula et al. 2008, esp. pp. 23 and 59). More generally, it is estimated that 80 % of the billion people suffering from hunger today—mostly smallholders as well as agricultural workers, herders, artisanal fisherfolk, and members of indigenous communities—depend on land for their livelihood (De Schutter 2010). Among them, many farmers can only cultivate plots of land that are too small or not irrigated enough to ensure subsistence. In addition, peasants are usually poorly protected by law, which makes them vulnerable to various limitations on their activities including, in extreme cases, evictions.

Insofar as land rights ensure access to productive resources and are key for realizing the right to food—that is, when there exists no alternative means of producing or purchasing food that is sufficient, adequate, and culturally acceptable—they are of paramount importance. But land ownership and use are often subject to confused and intertwined regulation, combining, for example, customary law (i.e., administered in accordance with the customs of indigenous groups) and statutory tenure (usually introduced during colonial periods)—not to mention the array of laws and codes at the international scale.

In addition, realizing access to land is extremely complex. First, one needs to

distinguish property rights and effective access since rural households can have either one without the other (Hall 2013). Property alone does not ensure that rural households will be able to derive benefit from the land (to “access” it) but needs to be complemented with “structural and relational mechanisms of access” such as technology, capital, and markets (Ribot and Peluso 2003, p. 160). By contrast, people can have access to land (“benefit from it”) without property rights—through agricultural labor, for example.

Second, having in mind the focus on land as a resource, exclusion (i.e., nonaccess) from a specific piece of land (as opposed to any land at all) is essential to virtually every productive use of land by anyone (Hall et al. 2011, p. 4). Aspirations for land access necessarily include the wish for some degree of exclusionary power (Hall et al. 2011, p. 7). This key dilemma causes manifold tensions, which are particularly complex when it comes to the recognition and implementation of a positive right to land for land-dependent rural households (as distinct from a negative right not to be evicted from land already held) through land reforms or similar programs of land redistribution (Hall 2013). Thus, exclusion is inevitable and goes hand in hand with access, engendering dynamics that involve a wide range of actors, powers, and legitimizing narratives.

Beyond local and national tensions affecting access to land, the issue takes on new dimensions within the current wave of international land transactions, which can also be analyzed according to the benchmark of the right to food. The land, water, and other resources that have supported local groups’ livelihoods for generations are now increasingly being subtracted from their access and control and converted into large-scale agro-industrial plantations, aimed to a considerable extent at nonfood production (see the data available at <http://www.landmatrix.org/>). This transformation from small-scale farming for personal and/or local production to large agrobusinesses can threaten food security inasmuch as agricultural products are generally sent abroad, bypassing domestic markets. Moreover, the deals provide few or no guarantees for

small landholders and are therefore likely to negatively impact the most vulnerable groups. Besides, although small-scale farmers sometimes resort to techniques that are detrimental to the environment, these large monocultures with intensive use of pesticides and mineral fertilizers aggravate in a much more powerful fashion soil erosion, groundwater contamination, and climate change, through the significant amount of greenhouse gases they entail. In the mid- to long run, this is expected to considerably diminish both the quality and the availability of natural productive resources, hence to reduce the ability of rural communities to feed themselves. Thus these large-scale land leases and acquisitions are likely to pose considerable challenges to the realization of the right to food by bringing about changes regarding access to land, choice of products to be cultivated, and where these products are sold (i.e., international or domestic markets) (Cotula et al. 2009).

Conclusion

The access to land of rural farming households in the global South is jeopardized by a variety of dynamics, spanning from local to international dimensions. It is an extremely complex issue especially in its positive side (to be granted access), but it is also under fire in its negative component (not to be deprived from current access) due to growing commercial pressures on land worldwide.

In this context, to borrow Amartya Sen's formulation, "the law stands between food availability and food entitlement" (Sen 1981, p. 166). This statement highlights the central role of legal entitlements in ensuring that the most vulnerable have access to the necessary resources to either produce enough food or have a purchasing power sufficient to acquire food in the market. Since hunger does not result so much from a lack of food production as from institutional bottlenecks and deficient economic and political empowerment (Cruz 2010), the place of human rights in the design of strategies and mechanisms to combat hunger becomes fully meaningful.

In particular, public policies aimed at improving access to food, and to land when it appears as a necessary means to this end, should target the most marginalized, enable and foster participation, enhance accountability and monitoring, and engage in individual and community empowerment. These touchstones are no silver bullet, yet they are conditions to improve entitlement to land and ultimately to food as a resource indispensable to life.

Summary

The right to food does not necessarily translate into a right to land. Yet, for most of the world's hungry, access to land is a condition to guarantee their livelihood and to achieve a decent standard of living. Thus, the relationship between these notions is far from simple. Moreover, given the various layers of significance attached to land as well as its many dimensions, realizing access to it is fraught with complexities as well. Nonetheless, the issue has to be explored, even more so in the current context of rising commercial pressures on land worldwide and the far-reaching transformations they entail.

Cross-References

- [Land Acquisitions for Food and Fuel](#)
- [Right to Food in International Law](#)

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Aesthetic Value, Art, and Food

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Synonyms

Aesthetics; Art; Cuisines; Ethical eating; Gustatory pleasure; Taste

Introduction

Can a meal be a work of art? Do eating and drinking afford experiences that qualify as “aesthetic”? If so, how do the artistic or aesthetic aspects of foods relate to ethical issues? While moral questions about eating have been under philosophical discussion for a long time, its place in aesthetics is more recent, and the relationship between ethical and aesthetic value is as contentious with food as it is with art.

Eating is both a biological necessity and a cultural practice. Every living creature must nourish itself; however, necessary sustenance often comes at the expense of the life of some other living thing. This fact alone opens ethical questions if one considers eating another sentient creature a practice with moral standing. What is more, habits of eating reflect upon character – for eating can be greedy or abstemious, convivial or solitary, enthusiastic or inattentive. Questions about the tastiest things to eat merge with ethical questions about what is appropriate to eat and whether there are potential foods that should be off-limits, for cultural and religious traditions forbid eating just anything that might nourish a human body.

Quite apart from nourishment, eating can afford intense and immediate enjoyment. Food appeals to the senses – most immediately to the senses of taste and smell but also to vision, touch, and even hearing. With the development of different cuisines, one also finds norms of presentation and standards for quality of preparation. Such factors suggest that foods also possess aesthetic value, though this claim requires some defense given traditional concepts of the aesthetic, which usually exclude physical satisfaction. Similarly, the status of food as an art form is more complicated than at first it might appear, for some of the most influential philosophical traditions that have produced aesthetic theories and philosophies of art have not welcomed cuisines into their purview. The reasons for this rejection are closely related to the ethical values that are accorded to food, the body, and the necessity of eating.

Recent philosophy has become more receptive than in the past about acknowledging the aesthetic significance of the literal sense of taste

and of its objects: food and drink (Kaplan 2012). This change of perspective needs to be understood against the backdrop of centuries of assumptions about the nature of beauty, art, and the human body. Preliminary historical orientation is needed to place the issues in context – or contexts in the plural, for these topics have been treated variously over time by philosophers of different theoretical orientations. The history that follows chiefly concerns the traditions of Europe and the so-called Western philosophies that trace their origins to classical Greece. This discussion prepares the way for some recent approaches to the aesthetics of food and drink and the ethical complexities that they disclose. Comparison with other philosophical traditions would reveal additional contexts that bestow meanings and values on food and eating.

Food and the Body: Some Enduring Concerns

In the works of two of the founding philosophers of the West, one finds conflicting attitudes toward food and eating, attitudes that represent recurring perspectives on the body and its frailties. In his influential dialogues, Plato takes a notoriously hard line on anything that indulges the body and leads the mind to dwell on its physical vehicle rather than on abstract thinking. His particular type of dualism values timeless spiritual and intellectual existence over physical natures of any sort. Human bodies and the material world in general are temporary and unstable; devoting attention to them poses epistemic dangers, inhibiting the ability to grasp the nature of timeless Truth, and moral dangers – for it deflects the attempt to learn of the Good. This is especially evident with the temptation to pursue bodily pleasures, which the senses of touch and taste present with special force. As Socrates famously pronounced on his deathbed, a philosopher should be concerned with neither food and drink nor sex.

Plato's younger contemporary, Aristotle, takes a more moderate approach to eating and its enjoyment. His attitudes about food are also integrated into his ethical theory, which

recommends that one seek a mean between extremes when learning to exercise both the emotions and the senses. One of the central virtues of Greek ethics is moderation or temperance, the characteristic that pertains to the way we handle pleasures. Aristotle is no ascetic, and he regards taking pleasure in bodily activities such as eating to be part of a good life. It is the extremes of eating that a virtuous person must avoid: neither deprivation to the point of malnourishment nor overindulgence to the point of gluttony represents virtue.

Plato's general attitude to the body can be found in many other traditions as well. This sort of approach worries that sensuous pleasures can capture attention so powerfully that they lead to both thoughts and actions that violate the prescriptions formed by rational deliberation. Employing the sense of taste for the pleasures it affords might exercise the body at the expense of the soul, and overindulgence in eating and drinking has consequences for health as well as morals. If the food is especially tasty, so much the worse, for the temptation is all the stronger.

Similar sets of values can be discerned in the many religious traditions that prescribe fasting. Depriving the body of sensory satisfaction is a time-honored means to feed the spirit and direct attention away from quotidian needs. Fasting can take on a variety of meanings, from acknowledging the frailty of the body and its physical demands to prompting thoughts of the importance of fleeting pleasures, all the sweeter when restored and the fast is broken. The many and varied practices of fasting indicate how the values ascribed to eating always entail perspectives on our bodily nature. The idea that overindulgence in sensuous pleasure does not represent a good life is captured not only in Aristotle's doctrine of moderation but also in the cardinal sin of gluttony in traditional Christianity, in ancient sumptuary laws that forestall excessive displays of wealth that may be evident in lavish tables, and in contemporary controversies over the causes and meanings of obesity and eating disorders. Thus far, recognition of ethical considerations attached to food and drink concerns the eater: how to promote health and prevent misuse of bodies and minds. Attention is directed

to the human being and his or her sustenance rather than to the moral standing of creatures treated as foods, a topic to be addressed shortly.

The putative ethical and epistemic shortcomings of tasting and eating lay the foundation for parallel shortcomings of an aesthetic nature. While there are more or less attractive ways to present food, terms such as “beautiful” are usually reserved for objects that we see or hear, whether in encounters with nature or with art (Sweeney 2007). Because eating satisfies bodily needs, its pleasures are also bodily. What later generations recognized as a distinction between the “aesthetic senses” of vision and hearing and the “nonaesthetic senses” of taste, touch, and smell is already present in venerable worries about bodily pleasures. The aesthetic-nonaesthetic distinction receives fuller treatment in the philosophies of taste that emerged in European Enlightenment philosophy.

Aesthetics and Theories of Taste

The term “taste” is used as a foundational metaphor in modern aesthetic theory, for the gustatory sense provides a model for understanding the ability to discern the subtle qualities of objects. The metaphor is founded on several characteristics of literal taste, including the fact that it is only by actually sampling a dish that one can determine its quality – e.g., if the seasonings are in balance or the cooking complete. This sort of firsthand acquaintance also obtains with the good judge of art who determines if a work is beautiful. Gustatory taste, like aesthetic sensibility, is also educable, requiring experience and education in order to become fully discerning. For these reasons, taste represents a facility for making aesthetic judgments that indicate expertise or connoisseurship.

(The sense of taste plays a robust aesthetic role in at least one other philosophical tradition as well, the classical Indian theory of *rasa*, which describes a complex range of sensory and emotional responses to different qualities in art. The two philosophical contexts are quite different, but both note the immediacy and intimacy of

aesthetic response when one tastes flavors and is moved by the experience of a work of art.)

With taste playing such a central conceptual role in modern aesthetic theories, one might expect that food would have been accorded aesthetic value readily and automatically. However, this was not the case, for taste and smell – the coordinating gustatory senses – present difficulties that hamper the formulation of an important philosophical objective. In particular, they make it difficult to figure out a “standard” of taste, a necessary normative goal if one wants to avoid a free-for-all regarding the merits of art and aesthetic judgments. Taste and smell were – and often still are – considered highly “subjective” senses. The senses of sight and hearing provide information about the world around that grounds the development of knowledge, and touch acts as an anchor to assure a perceiver that he or she experiences material reality rather than illusion. But taste and smell appear to furnish little information about anything other than individual responses to substances. By severing aesthetic pleasure from the satisfactions of the body, theorists strove to escape the damaging subjectivism that supposedly prevents literal taste from achieving standards. The putative subjectivity of taste dogs the heels of aesthetics, and in debates about how to locate a standard of taste for judgments about art, contrasts are regularly made to food. About taste there is no disputing, according to the old adage, so it does not matter if tastes for food and drink differ. But genuinely *aesthetic* taste requires some kind of normative standards, for clearly some art is better than others. Thus food enters the philosophical discourse of this time as a point of contrast. The aesthetic senses were identified as vision and hearing, and the old distinction between bodily and intellectual senses was reinforced in the burgeoning literature of early modern aesthetics (Sweeney 2012; Korsmeyer 1999, Ch. 2).

Cuisine: Art, Aesthetic Value, and Ethics

The rise of modern gastronomy in Europe fostered a body of literature that was attentive to the development of philosophies of taste and that

sought to elevate gustatory pleasures into aesthetic regions and food and drink into the arts. Writers such as Jean Anthelme Brillat-Savarin and Grimod de La Reynière wrote about the pleasures of the table, the development of discerning taste for food and drink, and the importance of fine preparation of meals (Gigante 2005). These authors promoted the idea that elegantly prepared foods, far from merely assuaging hunger, are gustatory entries into the world of fine art (Sweeney 2012).

The emphasis of the gastronomical writers was invariably on the fine dining of a relatively elite class of people. They focused on the special feasts of those with sufficient leisure to spend time savoring a lengthy sequence of foods. This sort of meal preparation seemed to offer the best candidates for food as an art form, an assumption that is continued in the contemporary notion that it is fine, gourmet food that especially demonstrates aesthetic accomplishment and artistic merit. Such an approach is reasonable in order to separate well-prepared meals from junk food and dining from gobbling. But it comes with a price: the zone of attention for aesthetic merit is purely the enjoyment of the taste experience. That is, the aesthetic dimension of food is more or less limited to sensory pleasure. The comparison with fine art is accomplished because of the parallels between the discerning perception that is demanded by both art and food, but the profound meanings that art can achieve are omitted from consideration. Literature, painting, and music are all art forms that convey expressive meanings, whether propositional or affective. They are also forms that are appreciated by means of the senses of vision and hearing, along with the imagination. Whether the sense of taste is capable of discerning meaning of similar breadth and complexity is a matter of debate and will be addressed again shortly. But it is widely believed that food, however tasty, does not convey or express meanings with propositional content (Telfer 1996).

Emphasizing immediate taste experience and the pleasures it affords also retains a fairly strong distinction between aesthetic quality (flavor and taste pleasure) and ethical implications (judgments about what is eaten, how it is prepared

and consumed). As a result, moral meaning remains separable from aesthetic assessment. However, a closer look at the links between sensation and cognition will narrow the distance between the aesthetics and the ethics of eating.

Uniting Aesthetics and Ethics

The concept of the aesthetic has undergone many revisions in the last decades, as has the concept of art, both in philosophy and in the art world itself. Generally speaking, the parameters that were formulated to distinguish aesthetic from other values have become more porous than previously. In addition, as more is discovered about the science of the sense of taste, its hoary reputation as “merely subjective” has been revisited and revised. A reassessment of taste is required before the relationships among aesthetic qualities of foods, the knowledge they presume, and the ethics of eating can be fully considered.

So long as the sense of taste is believed to refer only to personal responses, it has little traction to command philosophical interest. And the idea that taste is merely relative is ancient and tenacious. The fact is, however, taste is a frequent topic of dispute, and increasing scientific understanding of the machinery of sensation supports the idea that there are many common foundations for taste experiences, no matter how diverse preferences can become. Indeed, taste has a double direction, as it were, for it can refer to the properties of objects (and as such be “objective”) as well as to subjects (whose experience is “subjective”) (Smith 2007; Shaffer 2007). Gustatory taste thus admits of normative standards – as cooks and winemakers throughout the ages have understood. Unless one retains a restriction on bodily pleasures such that they never qualify as aesthetic in principle, taste rather easily joins the other senses with an aesthetic function. Are these seasonings balanced to perfection? Does this bottle of wine need another year before it is drunk? These are questions that are quite like those raised about whether a film, a piece of music, or a painting is satisfactory in its completion.

Does this mean that food should be included among forms of art? Some distinctions are required even to address this question. In recent decades some artists have begun to use food substances in their gallery works. Sometimes these works are meant to be eaten, other times they serve as a critique of and departure from traditional artistic media (Smith 2013). However, the question that is germane here does not refer to foods within the established institutions of the art world, but food that appears on the tables of homes and restaurants. Are these sorts of meals – at least those that are prepared with care – well understood as art? In a relatively loose sense, the answer can be “yes,” especially if we think of decorative presentations of carefully concocted dishes. There is little to preclude food from the category of the practical or applied arts (Telfer 1996). The similarity between food and fine art can be pursued by noting certain parallels with performance arts, since both are appreciated over a period of time in which they alter and disappear (Monroe 2007).

The degree to which the category of fine art suits foods and their preparation is a more complicated matter, however. The fine arts, a category arguably arising in the early modern period (Shiner 2000), are also the arts for which aesthetic value is considered paramount (as opposed to functional, moral, or religious uses, for arts are produced in all these venues). The appreciation of fine art is analyzed as a kind of aesthetic pleasure. But as already noted, if sensuous taste pleasure is food’s sole aesthetic measure, then connoisseurship is more or less the only parallel with the appreciation of art forms such as music and poetry. To go further requires a much stronger case qualifying food and drink as the bearers of the sorts of expressive meaning for which the arts are additionally valued.

In fact, the denial of propositional and expressive meaning to the experience of food and drink is disputable. As anthropologists and sociologists have long observed, social practices of eating bestow meaning on foods, and in the act of eating, we understand both what is being eaten and the importance of the contexts of meals. Once one notices the significant roles of eating not only in

daily life but also in civic and religious ceremonies, the meanings of food are evident. (For examples, see Fletcher 2004.) Recognizing that food has not only aesthetic value in a narrow sense but also cognitive significance establishes that the aesthetic dimensions of foods are not limited to the enjoyments of a connoisseur (Korsmeyer 1999; Heldke 2011). Acknowledging the cognitive significance of food is important independent of the question of whether food ought to be considered an art form.

However, even if one grants that foods can take on meanings in their contexts of serving and consumption, a counterposition can be advanced with the observation that it is only those *contexts* that impart meaning, not the food itself. The source of understanding remains *external* to the eating experience because information that is independent of the act of eating is required to supply cognitive content, as the tastes of food alone will not do the job. If this were the case, then the aesthetic dimension of taste would still remain separable from its moral valence. That is, the aesthetic quality could be excellent (yum!) but the moral quality negative (too bad!). A final set of considerations unifies aesthetic and ethical values in eating, making this separation difficult to maintain.

Some would argue that knowledge about what we ingest does not affect taste experience (Bach 2007). But can this be true? Many tastes are ambiguous without context, and identifying them brings the flavor into focus (Korsmeyer 2011). Unless we know we are eating blue cheese, for instance, its flavor may present as rotten. Sometimes detection of the identity of what is in our mouths entirely changes the valence of the experience, as when one discovers that one has eaten something considered taboo. Retrospective nausea can ensue from this disclosure, and what had seemed a pleasant taste now appears revolting. Separating aesthetic from ethical value in eating would require that there be two distinguishable mental events here: a good taste experience and a judgment that what tastes good is bad to eat. However, recall that “taste” has two directions of reference: the sensation and the substance. Knowledge of the substance is not irrelevant to the presentation of the sensation.

A large zone of ethical value opens when one acknowledges that knowing what one is eating, including how it was cultivated and prepared, can affect one's taste experience. One such context occurs with the now-popular practice of food adventurism, such as cooking dishes from unfamiliar traditions, patronizing restaurants opened by immigrants to one's community, or traveling to sample "exotic" cuisines. These tasting experiences may be respectful and admiring, but if one considers the circumstances that have placed, say, an Ethiopian restaurant in downtown Los Angeles, the possibility of such eating leads one to consider wars, famines, and population displacements (Heldke 2003).

It must be granted that sometimes the foods we eat have ethical valence that must be discovered by means that are indeed external to its aesthetic presentation. Whether a tuna fish sandwich can be linked to the incidental drowning of dolphins in long tuna nets, for example, would not be manifest in the taste of lunch. However, at other times the very suffering of a sentient being is required for a certain taste to be present. Jeremy Strong identifies a category of "cruel food," in which the very taste of the food depends upon a mode of preparation that causes suffering (Strong 2011). Overstuffing a goose for foie gras and depriving a calf of nutrients to impart a pale color to its meat are two familiar examples of cruel food. In cases such as these, moral valence is present in flavor itself, and ethical and aesthetic properties are inseparable (Korsmeyer 2012). The gourmet intent only on the flavor produced might try to detach the aesthetic and the ethical values of cruel foods, such that aesthetic value remains positive while a moral squeamishness intrudes. But the permeability of cognition and sensation renders this separation at least disputable and possibly untenable.

Recent technology has brought a new eating possibility into the moral arena: artificially grown meats that were never part of the body of sentient beings (Wellin et al. 2012). This scientific innovation holds out the possibility of re-separating aesthetic from moral values. If laboratory scientists were able to produce

flavors that previously were properties of cruel foods, would the tastes of such flavors escape moral worries? Perhaps, for example, one could retain the silken smoothness of foie gras without compromising the comforts of goose or duck. This solution is not without problems, however, considering the fact that tastes are always tastes *of* something or other. That is, there is always a cognitive dimension to flavor inasmuch as one at least recognizes or presumes the identity of what is tasted. If laboratory-grown meats are enjoyable insofar as they mimic the original source and fool the palate, then the character problem of eating cruel foods has not disappeared. The eater is happily deceived but is still enjoying a substance with a flavor that connotes cruelty. In the far more distant future, it is possible that food production will have developed to the point where eaters taste only essence-of-laboratory. But that possibility veers into the speculative realm of thought experiment, where one can only guess at what future moral intuitions might be.

Summary

Historically, philosophical theories often separate aesthetic and ethical value into different zones of experience. With food and eating, this separation would divide flavor and enjoyment from moral approval or disapproval of what is eaten. However, taste experience is rarely wholly detachable from concepts of the substance that produces flavor, so ethical valence can be discovered in taste itself, uniting aesthetic and ethical qualities in eating experiences.

Cross-References

- ▶ [Authenticity in Food](#)
- ▶ [Brillat-Savarin and Food](#)
- ▶ [European Cuisine: Ethical Considerations](#)
- ▶ [Fasting](#)
- ▶ [Gustatory Pleasure and Food](#)
- ▶ [In Vitro Meat](#)
- ▶ [Taste, Distaste, and Food](#)

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Africa, Food, and Agriculture

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Introduction

African food security depends largely on agriculture. Agriculture supports the livelihoods of 80 % of the population and employs approximately 60 % of the economically active population, including some 70 % of the poorest people on the planet. The continent has the largest agricultural area per person in the developing world and contains about 11 % of both the world's arable land and the world's population (Bank 2008). Plantation and corporate farming exist, but smallholder, family-owned subsistence agriculture, using simple implements like hoes and cutlasses, is the dominant system, with some commercial activity in local trading. Subsistence farming is “a livelihood strategy where the main output is consumed directly, where there are few if any purchased inputs and where only a minor proportion of output is marketed.”

Agricultural inputs commonly include water through irrigation and fertilizers to increase yield. Only 3.7 % of Africa is irrigated, however, and fertilizer consumption is the lowest globally at only 1 % of the world's fertilizers. Average use in developing countries is 109 kilograms per hectare

of arable land (kg/ha), but in Africa the average is only 12.6 kg/ha. Many farmers fertilize only through collection of animal dung (Glazebrook 2011). Though 70 % of the world's farmers are women (Women for Women International), in parts of Africa, women contribute 80 % of food production. African farmers are thus predominantly women smallholders using methods that are neither capital nor technology intensive to grow subsistence crops.

A main characteristic of subsistence use for farming land is "the centrality of the social" in that food production activities are grounded in social relations within households (particularly gender relations) and between households that affect the negotiation of production decisions, knowledge management, and marketing. For example, families commonly take decisions together concerning crop selection and when to plant and harvest.

Agriculture and food production are part of everyday lived experience for many Africans in contrast to life in the "fast food nations" of the global North where typically less than 20 % of the population are rural dwellers and most people are widely separated from their food source in terms of both production and processing. Rarely do more than 50 % of African populations live in cities. Half of the countries with greater than 80 % rural dwelling are in Africa, with Burundi topping the global chart at 89 %. Issues in food ethics like locavorism; the slow food movement, organic production, processing, and storage; low meat intake; and family or communal gathering for meals are not active choices so much as common practices arising from the field-to-table production-preparation-consumption patterns of subsistence economies. Food traditions are deeply embedded in cultural practice, ethnicity, and ethnic identity, such that food is at the heart of community ethos.

African issues in food and agricultural ethics are thus different from those in the global North. Issues in agricultural ethics include labor, gender, environmental justice, and climate justice. Since agriculture is the main food source, issues in agricultural ethics and food ethics are inherently linked. The most pressing issues are increasing

food insecurity and the current food crisis that is quickly getting worse.

Research into African agricultural and food ethics is limited and mostly confined to debates over genetically modified crops, e.g., the response to MacDonald (2006) in Powers (2006). Concerning agricultural ethics, van Niekerk (2010) also addresses the ethics of genetically modified crops, but also animals, in assessing agricultural biotechnology, and he delves further into issues of HIV/AIDS, land reform, biodiversity conservation, medicinal plants, animal rights and welfare, and agricultural science. Yet subsistence agriculture, the most common form of agricultural practice in Africa that affects the most people and presses for analysis from environmental, distributive, intergenerational, gender, climate, and recognition justice, does not appear as a thematic entry or an entry in the index. Van Niekerk's work warrants reading as an account of the ethics of commercial agriculture in Africa. This entry serves as a complement to his work that prioritizes instead subsistence agriculture in order to indicate the growing humanitarian food crisis in Africa.

Agricultural Ethics

Agricultural Labor

Sub-Saharan African agriculture can be subsistence or commercial. In subsistence farming, the farm provides the family's principal source of income and typically involves some small-scale selling in local markets, mostly to buy schoolbooks or uniforms and sometimes cloth for making clothes or pharmaceuticals where traditional medicine has failed. Subsistence farming in Africa depends on family labor (Cornish 1998). Labor is an issue when children are kept out of school sporadically to assist in subsistence farming. Educational impacts can be long term and preclude completion and affect literacy rates. Given that most farmers are women, the practice of taking daughters out of school to work in the fields during planting and harvest, especially of a parent has fallen ill, exacerbates gender inequities and reinforces the well-documented

“gender gap.” This use of young female labor is hard to counter because the family’s food security and whatever limited income they can generate depends on a successful crop. One resolution, practiced, for example, at the Center for Sustainable Development Initiatives in Bolgatanga, Ghana, is to provide the family with money to hire labor in place of the daughter so she can complete the school year.

In commercial production, cash crops are intended for the market. Fertilizers and pesticides are commonly used to increase yield, so ethical issues include health impacts for laborers. Use of mechanized equipment introduces safety issues. These issues are especially important in contexts of weak or nonexistent government regulation or of corruption. Female workers in particular can be exposed to unwanted sexual advances. Minimum wage standards are nonexistent or inadequate, so labor can easily be exploited.

In large-scale, plantation-style agriculture, child labor is a pressing ethical issue. Indentured labor of children reproduces slavery conditions. Nutrition is an expense and thus usually inadequate; there is no education, minimal concern for health, and lack of protection from abuse. In Ghana’s cocoa industry, for example, ten of thousands of children are forced into hard labor in hazardous condition with no pay.

African Gender Issues in Agriculture

Throughout Africa, women continue to face social inequalities, complete less formal education than men, and have lower literacy rates. They often have a longer workday than male counterparts, yet their agricultural labor is largely overlooked by policy makers because traditional economic indices cannot account for nonmarketed yields. Even more recent measures such as the Genuine Progress Index fail to account for the crucial contribution women make to national food baskets, without which governments in Africa could not function (Glazebrook 2011). Women farmers also face limited access to credit, machinery, labor, fertilizer and agricultural extension services, and exclusion from agroforestry. Weak land tenure rights are especially a problem. Africa’s declines in agricultural production have been attributed in

large part to large-scale land acquisitions that result in local people losing access to the resources on which they depend for their food security and livelihoods (Cotula et al. 2009). If women depend on access to land over which they have no claim of ownership, family food security can be threatened at any time. Agricultural ethics thus intersect with gender on distributive justice issues of workload parity and resource allocation and recognition of justice issues concerning women’s role as food providers and nontraditional economic agents.

Environmental Justice

Environmental injustice in Africa is rampant in the agricultural sector where most farmers have few resources or political and social tools and empowerment to respond. Land grabbing displaces smallholders and subsistence farmers from traditional growing areas, to permit instead large-scale, mechanized, capital-intensive, monoculture production of cash crops for export or of crops to be processed into biofuels. These production approaches not only leave local farmers landless; they also deplete local water resources and can contaminate nearby land and water with runoff chemical fertilizers, pesticides, or genetically modified organisms that outcompete local crops. Moreover, well-intentioned development projects that never come to fruition can deny appropriated land to locals while lying frustratingly empty.

Pollution also compromises environmental justice. Resource extraction industries, e.g., mining and oil development, cause environmental damage to neighboring land by dumping mining tailings and leaving oil spills unattended to. Profits accrue to the polluters, while locals’ livelihood losses often go uncompensated. In Nigeria, 60 years of resistance to oil development and its impacts on agricultural livelihoods, as well as other negative impacts, resulted in the hanging of Ken Saro-Wiwa and the Ogoni 9 for their leadership in protesting Shell’s activities in the Niger Delta but has made little difference to environmental degradation in affected areas.

Control of water can also be a source of environmental injustice. In 2007, when floods were wreaking havoc in Burkina Faso, the dams were opened to relieve local impacts. The ensuing

swell exacerbated flooding in Ghana, Burkina Faso's downstream neighbor, where more than 50 died, over 300,000 were displaced, and many suffered the loss of their entire annual crop. The majority of farmers impacted were women supporting various dependents in extended families separated by urban migration and devastated by AIDS deaths; that is, the most vulnerable community members with the least resources to bounce back were strongly affected.

Elsewhere, transboundary water issues are drivers of war, conflict, and confrontation, e.g., between Egypt and Ethiopia, as upstream dam development reduces flows downstream across the border. Subsistence farmers who depend solely on rains experience less impact on their production from transboundary water control than corporate farmers whose water use in agriculture includes irrigation, though their lives may be affected in other ways, e.g., water availability for daily family needs.

Climate Justice

The factor most likely to impact agricultural production in Africa is global climate change, which intersects with the issues detailed above and is predicted to exacerbate and accelerate all negative influences on agriculture. According to the Intergovernmental Panel on Climate Change's 4th Assessment Report (2007), Africa is "a continent already under pressure from climate stresses and highly vulnerable to the impacts of climate change." These impacts include longer, hotter dry periods, decreased rainfall, unpredictable rainfall patterns, increased temperature, desertification, loss of coastal land to sea-level rise, and severe weather events like heat waves, drought, and floods. Insidious changes in the seasons, i.e., the longer, hotter dry periods, shorter growing seasons, and unpredictable rainfall patterns caused by the consequences to climate of anthropogenic greenhouse gas emissions, are bewildering farmers by making it harder to know when best to sow, cultivate, and harvest (Jennings and Magrath 2009). Impacts if changing weather patterns on water resources are especially threatening to agriculture. A third of Africans already living in drought-prone areas

and 220 million are exposed to drought every year, while 250 million are predicted to experience water stress. Water stress and drought lead to decreased yield that has been directly correlated to the global temperature increases of climate change. Rice, for example, undergoes 10 % decline for each 1 °C rise; global estimates of temperature increase caused by current production levels of greenhouse gases estimate increases as high as 5 °C by 2050.

Women and children are extremely vulnerable to the incremental impacts of climate change on food and agriculture, though they have the least amount of political, economic, and social resources to recover (Peacock et al. 1997; Morrow 1999; Bang 2008). Because they are politically and economically marginalized, women lack access to government or other aid in the form of loans and grants. Nor can women simply move elsewhere when growing conditions deteriorate if they do not have the resources to do so, and they may be constrained by other barriers. Women head 30 % of households in Ghana, for example (Lloyd and Gage-Brandon 1993), but a woman heading a Fra Fra family in a small village in Northern Ghana may speak only Fra Fra, so language is a huge barrier to relocation.

Women also are the primary medical caregivers in the family, so diseases like malaria or other water-vector, insect-carried sicknesses that thrive in standing water left behind by floods increase women's workload while decreasing the capacity of other family members to contribute labor to the family's agricultural projects, as well as increasing the probability that the woman will herself suffer health impacts of climate change. Children whose food security is threatened by climate change can suffer nutritional deficiencies that have developmental as well as lifelong health impacts that impair brain, bone, and organ function. Climate change accordingly has differential impacts across groups with varying vulnerability. Climate justice issues in agricultural and food ethics intersect with issues of gender and children's right to an equitable chance for survival and long-term health.

Agricultural production in Africa in consequence of climate change is indeed expected to

experience catastrophic declines in grain number, size, and quality of 20–30 % by 2080, with declines as high as 50 % in Sudan and Senegal (Cline 2007). 60 % of sub-Saharan Africans depend for survival on livestock that provide dung for fertilizer, occasional protein in the diet, and other resources for various uses. Climate change impacts will bring less forage and feed crops and less water for animals. African agricultural communities will thus suffer severe damage from climate change that affects their livestock and their crop.

At the same time, African production of the greenhouse gases causing global climate change is negligible in comparison with heavy emissions from industrialized countries where inhabitants also live carbon-intensive lifestyles.

Principles of distributive justice are thus doubly breached when those making the least contribution to climate change reap few of the benefits but bear the costs disproportionately heavily. Agricultural impacts of climate change in Africa accordingly breach principles of climate justice. Impacts are and will continue to be heavy in the agricultural and food sector where there are economic consequences for corporate agriculture but also food security consequences that increase human suffering. Climate change impacts are inescapable for many Africans and constitute a massive humanitarian crisis that has already begun and continues to grow through both extreme weather events and the less dramatic but more insidious variability and unpredictability of climate patterns that were previously relatively stable.

Food Security

According to the United Nations, of 36 countries worldwide currently facing food insecurity, 21 are African. The number of undernourished in sub-Saharan Africa rose from 169 million in 1990–1992 to 212 million in 2003–2005 (Biavaschi 2008). Over this period, the proportion of the world's hungry living in Africa rose from 1/5 to 1/4 (FAO 2008). The UN Food and Agriculture Organization also identified four Africa

countries (Lesotho, Somalia, Swaziland, and Zimbabwe) as in acute food crisis, i.e., “facing an exceptional shortfall in aggregate food production/supplies as result of crop failure, natural disasters interruption of imports, disruption of distribution, excessive post-harvest losses or other supply bottlenecks.” A further four (Eritrea, Liberia, Mauritania, and Sierra Leone) were experiencing widespread lack of access to food, i.e., “a majority of the population is considered to be unable to procure food from local markets, due to very low incomes, exceptionally high food prices or the inability to circulate within the country.” Thirteen (Burundi, Central African Republic, Chad, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Ethiopia, Ghana, Guinea, Guinea-Bissau, Kenya, Sudan, and Uganda) had “severe localized food insecurity due to the influx of refugees, a concentration of internally displaced persons or areas with combinations of crop failure and deep poverty.” And Ethiopia, Kenya, Somalia, and Zimbabwe also had unfavorable prospects for that growing season, i.e., “a shortfall in production of current crops as a result of a reduction of the area planted and/or adverse weather conditions, plant pests, diseases and other calamities.”

The following year, 2009, the United Nations identified 235 million sub-Saharan Africans as “chronically hungry” (Kabasa and Sage 2009). By 2050, Africa is predicted to experience a 10–20 % increase in the number of people at risk of hunger, a 21 % increase in the number of children at risk of hunger, and a 26 % increase in malnourished children. These percentages mean that 24 million more children are expected to be at risk of hunger in 2050 than in 2012 and 10 million more are expected to be malnourished. These predictions are especially worrisome concerning children, given long-term health consequences of poor nutrition discussed above as issues in climate justice and the breach in intergenerational justice malnutrition entails. By 2080, the anticipation is that 75 % of everyone at risk of hunger globally will reside in Africa. In 2012, 24 % of the world's undernourished (a classification less severe than “malnourished”) were in Africa, but by 2080, 40–50 % will be.

Oniang'o (2009) traced food insecurity and hunger in Africa to its beginning in the mid-1980s, when it was recognized as a cyclical issue that could be predicted as coming approximately every 5 years, particularly in East Africa, where some arid and semiarid areas can go for as long as 4 years without a drop of rain. Although the concept of global climate change is fairly recent, Oniang'o's timeline is consistent with current scientific analyses from the Intergovernmental Panel on Climate Change that released its most recent Assessment Report in November of 2013, so cyclical variability may have deeper roots in larger, noncyclical global patterns. Whether cyclical or global, the changing African climate is clearly a significant factor in food insecurity.

Lack of adequate nutrition has many impacts on human well-being. Health, mortality, and survival consequences are worst for the more vulnerable, i.e., the young and the old; women subject to the bodily demands and stresses of pregnancy, breast-feeding, menstruation, and menopause; and the sick, who in Africa commonly battle malaria, tuberculosis, AIDS, or a combination. Historically, food insecurity and hunger have gone hand in hand with conflict, to the extent that it is difficult to determine the cause-effect relationship of the two with any degree of certainty.

Food insecurity is a consequence of exceeding carrying capacity, which is a relation between population size and agricultural output. When populations increase, more food is needed to support the increased population, but land on which to grow food is a finite resource. Africa is experiencing both population increase and decrease in agricultural yield. The 2005 population in Africa of 0.9 billion people is predicted by the UN Development Programme to experience 81 % growth by 2035 and to have more than doubled in 2050 by reaching nearly two billion.

Africa is the only region of the world where per capita food production has been declining for the past three decades. By 2003, cereal yields, for example, were only a quarter of the global average (Jones and Thornton 2003). Models

anticipate that countries in Africa are likely to experience catastrophic declines in yield of 20–30 % by 2080, rising as high as 50 % in Sudan and Senegal (Cline 2007). This crisis in agriculture means a decrease in food accessibility that will be especially harmful for groups like women and children that are vulnerable because of pregnancy and childcare in the case of women and developmental impacts of poor nutrition in the case of children but also because of their marginalization and economic invisibility.

Observed declines in agricultural yield are the result of multilayered problems including climate issues of temperature, rainfall and weather events, decline in soil fertility, increases in pests and diseases, changes and delays in cropping practices, decline and poor adoption of external production inputs and productivity-enhancing measures, and limited individual property rights—all of which are major impediments against investment in African agriculture (Amponsah 2009).

The International Institute for Tropical Agriculture also points to lack of microcredit to support small-scale farmers, minimal value addition in processing crops to increase their market value, poor storage facilities, poor food preservation techniques, poor pricing policies, the high poverty level of farmers, and inconsistent agricultural policies (IITA 2007). Holt-Giménez (2008 cited in Vivas 2010) argues that economic “development” policies driven by the global North that began in the 1960s, i.e., the Green Revolution projects, structural adjustment programs, regional free trade treaties, the World Trade Organization, and agricultural subsidies in developed countries, have all contributed to the destruction of food systems in Africa (Vivas 2010).

Beyond short-term causative elements, Vivas (2010) argues further that underlying reasons explaining the current deep food crisis include neoliberal policies such as trade liberalization, payment of foreign debt, 30 years of indiscriminate privatization of public services and goods, and the logic of capital at work in agriculture and food models. All these factors are exacerbated by climate change, which is also the consequence of

uncontrolled environmental degradation from the industrialized countries of the North.

Food insecurity in Africa thus has multiple drivers: some are environmental, but others are rooted in postcolonial, global issues that are political and economic. The justice and ethical issues can accordingly not be assessed without analysis from political economy and political ecology that examine equity, parity, and global North–south relations. Ironically, food security needs of populations in the developed countries of the global North have also created a situation where commercial crops on African farms, especially large-scale, mechanized production systems, now grow food intended for dinner tables and restaurants in the global North, while local workers and neighboring communities in Africa are starving.

An extreme version of this gross breach of global ethics is documented in Director Hubert Sauper's film *Darwin's Nightmare* that shows how livelihood loss from displacement of traditional fish stocks by introduced, invasive pickerel in Lake Victoria has forced starving locals into exploitative employment by the corporate fishing industry to process catches for consumption in Europe. Corporate farms that displace locals, often women, from lands that have historically been used to grow subsistence crops are scattered across Africa. For example, cassava flakes exported to China are derived from cassava, a starch source widely consumed across Africa. Africans thus experience increasing food crisis as crops diminish, while a staple is exported elsewhere. The high incidence of poverty in Africa means, however, that Africans themselves are in large part unable to afford to buy food when their crops fail to last to the next harvest.

In response to food insecurity, Africans have at the community level developed various adaptation strategies. A recommended strategy is alternative income generation (Glazebrook 2011), but this often requires capital investment, education in business management, marketing skills, and other knowledge and resources to which the most vulnerable, i.e., marginally literate women subsistence farmers who live in poverty greater than what the World Bank calls

“abject,” have no access. An on-the-ground strategy is crop selection, in which farmers shift from millet, for example, to rice that is less dependent on steady rains and more successful in variable conditions. Rice is, however, more labor intensive and so difficult for the most vulnerable who are less capable of meeting the physical demands. Moreover, rice is significantly less nutritional than millet that is high in minerals, protein, and calcium and thus a far superior food source than rice for pregnant and lactating women and growing children.

Food and poverty are deeply entangled because poverty is a substantial factor in food insecurity that affects Africans' ability to remediate environmental damage, increase productivity by extending outputs, or purchase food to compensate for inadequate yield. Yet in Africa, 1 % increase in crop yield reduces the number of poor by 0.72 %, i.e., by 200 million people. To increase food security, there is need for an environmentally and socially responsive agricultural system, based on smallholders' needs. It is critical to close the inequality gap and give poor people (especially women) a chance to better care for themselves, their families, and their communities.

Summary

Food and agriculture are at the heart of every culture, and the celebration of food and agriculture is common across African countries, religions, and cultures due to its importance in historical and intergenerational continuity (Shah 2010) and its role in ethnicity and ethnic identity. Food consumption practices in developed countries have become distanced from agricultural sources and alienated by large-scale industrial food production and processing, resulting in intentional practice in organic, local, and slow food movements. In Africa, food production is a significant livelihood strategy; most agriculture is subsistence, largely practiced by women who manage the process from planting to harvest with minimal inputs and do their own processing from field to table. Thus, organic farming, locavorism,

and slow food consumption belong to the subsistence practice itself and do not need to be artificially introduced.

Culturally rich and distinctive food traditions in Africa have been undermined by postcolonial, neoliberal global politics and economics that have disrupted Africa's resource base and introduced large-scale, industrialized, monoculture-favoring, capital- and technology-intensive corporate agricultural models. Perhaps well-intentioned but nonetheless ill-conceived development programs have thus lead to poorly managed agricultural production that has damaged local environments. Global climate change increasingly exacerbates environmental damage, and Africa at present is in a state of agricultural and food crisis that is unlikely to improve and extremely likely rather to erupt in the next 35 years into humanitarian emergency that is globally unprecedented in scale and severity.

Most of Africa's farmers are women rendered vulnerable to food insecurity and agricultural crisis by lack of education and access to resources, economic invisibility, weak land tenure rights, and increasingly difficult growing conditions in fragile ecosystems. Children are also especially vulnerable to health impacts when nutritional needs are not met.

African issues in agricultural ethics involve labor, including child labor; gender issues, including social inequalities, weak land tenure, and limited access to resources; environmental justice issues including distributive, recognition, and intergenerational justice; and climate justice as Africa suffers disproportionate impacts from climate change while generating comparatively small amounts of the greenhouse gases that are causing it. Concerning food ethics, increasing population size in African countries coupled with decreasing agricultural yields has already begun to place African countries on a spectrum ranging from food insecurity to full-blown crisis.

Oxfam (2011), "Growing a Better Future," points to the buckling nature of the global food system from a combination of factors including climate change, ecological degradation, population growth, rising energy prices, rising demand for meat and dairy products, and competition for

land from biofuels, industry, and urbanization. Each of these factors exacerbates the pressure on distribution systems. The report warns that present systems of production and distribution will continue to create millions of hungry people unless there is a redistribution of power from a handful of multinationals to the billions of people who actually produce and consume the world's food (Bailey 2011). Evidence clearly indicates that Africa is the first continent to exhibit this buckling of global food systems. Sub-Saharan Africa is already and will continue overwhelmingly also to suffer the loss of its historically rich, plentiful agricultural base from environmental degradation, climate change impacts, and poorly conceived development approaches and programs. The most pressing issue in ethical assessments of African food and agriculture is mass starvation.

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African Food Security Urban Network (AFSUN)

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History of the Organization

AFSUN was founded in 2008 to generate knowledge on the dimensions of food insecurity among Africa's urban poor, to propose practical solutions on how to feed Africa's hungry cities, and to build the capacity of African researchers, policy-makers, and civil society organizations to develop solutions to the urgent but complex problems of urban food insecurity on the

continent (<http://www.afsun.org>). AFSUN began as a partnership between the University of Cape Town's African Centre for Cities and Queen's University's Southern African Research Centre funded by the Canadian International Development Agency (CIDA). These two organizations now lead an extensive international collaboration involving five Canadian universities as well as institutions in nine African countries (Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe). The network also has partners in the governmental and nongovernmental sectors. All AFSUN activities are guided by a multi-partner Steering Committee and working committees on research, policy, training, and community engagement.

Major Areas

The Global South, and Africa in particular, is undergoing an irreversible transition to a predominantly urban society. The UN projects that Africa will be 50 % urban by 2035 and nearly 60 % urban by 2050. The food riots witnessed in cities around the world and in Africa during the global food price hikes of 2008 are a sobering reminder of the consequences if we do not acquire a better grasp of the dimensions of urban food insecurity (Berazneva and Lee 2013). However, there is a serious absence of knowledge about the crisis of urban food insecurity in Africa and a major lack of human capacity and training to develop policies that enhance the food security of urban populations (Crush et al. 2012). After a period of intense interest in urban food insecurity in the 1990s, the issue has increasingly fallen off the global development agenda. The international food security agenda is now increasingly rural and smallholder focused (Crush and Frayne 2011a). At the national level, responsibility for food security policy and planning usually rests with Departments of Agriculture; a rural focus is the inevitable consequence. AFSUN was established as a corrective to the antiurban bias of the current food security agenda.

Major Activities

AFSUN's activities on urban food security fall under four main headings: knowledge creation, policy advice, training, and community engagement.

Knowledge Creation

AFSUN's primary goal is to generate new applied knowledge on the dimensions and determinants of food insecurity in Africa's rapidly growing towns and cities. In 2008–2011, it undertook a major scoping exercise of all existing research literature on urban food issues in Africa to identify the state of knowledge and any knowledge gaps. These reports, published in the AFSUN Urban Food Security Series, cover a wide variety of themes including the implications for food security of the regional expansion of supermarkets, the relationship between food security and urban agriculture, the impact of HIV and AIDS on food security and nutrition at the individual and household level, the rise of food banking in Southern Africa, the impact of climate change on cities and urban food security, the nutrition transition in African cities and the growth of overnutrition or obesity, the linkages between food security and migration and development, and the impacts of gender discrimination on food security. Many are now being published in leading peer-reviewed development and food studies journals in revised form (Frayne 2010; Battersby 2011, 2012; Crush 2013; Crush and Frayne 2011b; Crush et al. 2011a, b; Lane et al. 2012; Tawodzera 2011, 2012). In addition, a number of AFSUN authors have contributed to a recent book on climate change and urban food security in which many of the chapters draw on the baseline survey (Frayne et al. 2012).

To address the knowledge gaps, AFSUN undertook a baseline survey of the food security situation of poor urban neighborhoods in 11 African cities (Blantyre, Cape Town, Gaborone, Harare, Johannesburg, Lusaka, Maputo, Manzini, Maseru, Msunduzi, and Windhoek) in 2008–2009. The survey used a standardized questionnaire to ensure comparability between cities. To measure levels of food insecurity, the survey

used the four quantitative food insecurity (access) scales developed by the Food and Nutrition Technical Assistance Project (FANTA). The survey was administered to 6,453 households comprising 28,771 individuals and represents the largest regional database on urban food security yet collected in Africa. AFSUN conducted a follow-up survey in Harare in 2012 to ascertain if there had been improvements since the height of Zimbabwe's economic and food crisis in 2008.

The AFSUN baseline survey provides unprecedented insights into the state of urban food insecurity in the Southern African region. The results are being published in a series of city-specific studies. Each of these studies identifies how and why each city conforms to or differs from the regional picture. What is clear is that the analysis of food insecurity, even in cities with similar prevalence levels, needs to take into account the particular local circumstances of each urban area.

The AFSUN baseline survey has also identified a number of key knowledge gaps for further research. For example, the relationship between migration and food security and the integration of migrants into urban food systems require much further investigation. In this connection, AFSUN is implementing a study examining the food security status and strategies of Zimbabwean and Mozambican migrants in the South African cities of Cape Town and Johannesburg. In addition, the AFSUN survey showed that the informal food economy is critical to the food security of many poor urban households. AFSUN is therefore currently undertaking a major study of the interface between formal and informal food retailing in the cities of Cape Town and Johannesburg.

Policy Advice

AFSUN has specifically targeted the municipal level of governance, working closely with city planners as well as local government networks such as the Municipal Development Partnership of Eastern and Southern Africa (MDP-ESA) and the South African Cities Network (SACN). In partnership with these policy networks as well as regional and global research and policy networks such as SAMP, International Metropolis,

and the International Migration Research Centre, AFSUN has convened three major policy conferences to discuss its research results with policy-makers. These include a conference on “Urban Food Security: Strategic Policy Directions” (in Ekurhuleni, South Africa in 2010), “The Urban Food Security and HIV” (in Durban in 2011), and “Migration, Urbanization and Food Security in Cities of the Global South” (in Cape Town in 2012). AFSUN also convenes workshops in individual cities to work with city officials on the challenge of food insecurity in their cities. In 2012, AFSUN collaborated with Reos Partners in the delivery of training workshops for city officials and planners which focus on exposing officials in an experiential learning manner to all facets of the urban food system. In 2013, AFSUN was contracted to work on a food security strategy for the City of Cape Town.

Training

One key aspect of the AFSUN program is building the capacity of network partners to undertake policy-relevant research. AFSUN offers an annual graduate urban food security course as well as modules for undergraduate students and summer school courses with the African Centre for Cities and the Department of Environmental and Geographical Science at University of Cape Town. The general lack of capacity in advanced urban food security research and analysis has prompted AFSUN to offer funding and fellowships to both Master’s and Doctoral students.

Community Engagement

The final component of the AFSUN program is its work with urban community change agents to increase their knowledge of the urban food system as a whole and to build interagency partnerships to influence the accessibility of food in poor urban neighborhoods. To this end, AFSUN runs regular workshops for NGOs and CBOs in partnership with Reos Partners. AFSUN is also involved in media work to raise the level of consciousness about the urban food security challenges facing communities in partnership with the NGO Community Media for Development. The two have produced a major radio

documentary and drama series on food issues for broadcast on community radio stations. To raise general public awareness and the quality of print, radio, and TV reporting on urban food security issues, AFSUN runs educational workshops for journalists and broadcasters.

Landmark Contributions

Publication of 20 major reports in the AFSUN Urban Food Security Series (downloadable at www.afsun.org).

Three major policy conferences on urban food security convened in Southern Africa.

Over 200 undergraduate students in 11 cities specifically trained in fieldwork methods to undertake the AFSUN baseline survey.

Over 40 graduate students trained in urban food security analysis including five PhD theses on Harare, Kitwe, Blantyre, Gaborone, and Windhoek.

Cross-References

- [Food Security](#)
- [Urban Agriculture](#)

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Agrarianism and the Ethics of Eating

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Synonyms

Agricultural ethics; Aquaculture; Ecoregions; Environmentalism; Food ethics; Foodsheds; Small farm; Sustainability ethics; Traditional farming

Introduction

“Agrarianism” refers to certain schools of thought and forms of life which regard farming and related vocations as exceptional in that farmers are independent, self-sufficient, and self-determining and work in step with nature, the local ecology, the seasons, etc. Independent yet attuned to their ecological setting, agrarian farmers think and act

holistically. Working in and with nature, agrarian farmers view themselves as stewards of their ecological setting and who keep an eye on the environmental health of the area. To agrarians, city folks lead dependent, other-directed lives, artificial and out of step with nature. The agrarian life is built on trust, neighborliness, and cooperation, unlike the alienation and distrust of city life. Dwelling in stable communities, rural agrarians nurture a sense of personal identity that is rooted in place and local history and color. Moreover, Agrarianism regards tilling the soil, cultivating crops, raising livestock, producing food stuffs, etc., as transformative toils and virtue-engendering endeavors. Yes, farming is toilsome; however, agrarians deem that this very hardship engenders the farmer's traits of determination, perseverance, and know-how. Agrarianism holds that such virtues are nurtured in farmers via their interactions with nature as they work to forge fecund order out of wilderness.

Why the continued relevance of Agrarianism? Humanity's connection with terra firma is breaking up as people flock to the cities worldwide and increasingly lead artificial, disconnected lives. In the developed nations, the few remaining family farmers feel caught between global agribusiness and big food processors. Meanwhile, city dwellers have slight awareness of the source of their food, which they know as the packaged products on supermarket shelves. In the last half century, industrialized agriculture has rapidly introduced economies of scale and cheap food for consumers; however, this productive efficiency comes at a high cost to the environment. Synthetic chemicals, such as those used as pesticides and fertilizers, can certainly improve agricultural productivity – at least in the short term – but they can also have deleterious impacts on surrounding environments as pollutants of soil, water, and the atmosphere. They can also contaminate farm products too. The widespread use of antibiotics in intensive animal production has resulted in their loss of effectiveness for disease control not only in animals but also in humans. And then there is the matter of an often reduced attention to the welfare of the animals in the production units of industrial farms.

The ubiquitous rise of these phenomena is fueling new calls for Agrarianism and agrarian values. In recent decades, people have been returning to rural lifestyles or at least greening their urban settings.

Age-Old Agrarian Views and Virtues: Classical Antiquity

The agrarian life and virtues were esteemed in classical Greece and Rome. In *Works and Days*, the Greek bard Hesiod depicted the rural life. *Works and Days* celebrates the dignity, toil, and generosity of the farmer and teaches prudential morality. Toil steadfastly, incessantly! Grow your bounty step by step! Cooperate and share with thy neighbor; thy kindness shall be returned in kind! (Robinson 1968, pp. 20–21). Xenophon and Aristotle lent support to Hesiod's agrarian virtues. In classical Rome, such writers as Cato, Pliny, and Cicero and poets as Horace and Virgil celebrated the agrarian life and values. Horace wrote poems set on his Sabine Farm or in a country town, which express the farm's bounty, beauty, and proximity to nature. Virgil's *Georgics* celebrates the piety of country life in sections on field crops, trees, livestock, and bees. Virgil offers didactic teachings about farming but with wider horizons. In the *Georgics*, he affirms moral tenets and philosophic views of wide import. Virgil's farmer stands for broader humanity. For him, farming is the premier human activity across the world. Virgil laments the disappearing solitary farmer who worked his own land as a falling away of humanity from its core vocation.

Classical China

In classical China, the Confucian virtues reflected the agrarian society but were the virtues of the feudal landlords rather than of those who tilled the soil. Thus, in Confucius' *Analects*, rural folk question his wisdom and quixotic ideals. And, in the *Mencius*, followers of the school of Tillers (*Nongjia*) question Mencius' separation of ruler

and ruled, advocating a rural egalitarianism. The Tillers held that society was born with the development of farming and that healthy societies were grounded in humanity's propensity to till the soil together.

The Tillers' ideal of rulership was adopted from the agrarian sage, Shennong, renowned for identifying herbs, crop plants, and medicinal and poisonous plants and for teaching people how to farm. Hence, Tiller kings worked the fields alongside the people, while their queens wove fabrics and performed domestic tasks with the other women. The Tiller kings did not receive state funds but earned money from working their own fields. The Tillers disputed the Confucian notions of administrative elites and division of labor, arguing that egalitarianism and self-sufficiency were the proper grounds of a stable society. Disputing also the idea of stratified prices of basic goods, they insisted that food staples, regardless of quality or demand, should be sold at fixed prices to ensure fair distribution. A follower of the school of Tillers once told Duke Teng, "A worthy ruler feeds himself by plowing side by side with the people, and rules while cooking his own meals. Now Teng, to the contrary, possesses granaries and treasuries, so the ruler is in effect supporting himself by oppressing the people" (Lau 1970 100f; Graham 1979).

European Echoes

Physiocracy, an early economic theory that stressed land and agriculture, arose in the eighteenth-century France. Its leaders, Francois Quesnay and Anne-Robert-Jacques Turgot, were influenced by Chinese agricultural policy. Quesnay advocated such a *laissez-faire* agrarian policy for France. The Physiocrats stressed rural labor and extractive industry, including grasslands, pastures, forests, mines, and fishing, as sources of national wealth. They saw the consumption of farm surplus as the basis of trade and industry, which themselves produce no net product. Naturalists, the Physiocrats believed that if the human order were brought into attunement with the natural order, society would be healthier. They not

only stressed agriculture in economics but rejected the shallowness and artifice of urban life and praised natural living, especially as farmers.

Modern Western Agrarianism too held that wealth originates from the land and that farming is the foundation of other vocations. Modern Agrarianism drew on John Locke, who asserted that those who work the land should be its rightful owners in *Second Treatise of Civil Government* (1690). This labor theory of value influenced Thomas Jefferson who shaped how nineteenth-century American homesteaders viewed the ownership of their farms. In a letter to John Jay, Jefferson wrote, “Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, & they are tied to their country & wedded to its liberty & interests by the most lasting bonds” (1785; Jager 2004, 12).

Agrarianism was a leading theme in the eighteenth-century British georgic poetry. The poets Stephen Duck, Mary Collier, and Thomas Gray sang of the hardships as well as the virtues of farm life. They followed Horace in exploring the themes of town vs. country and the happy man, but Virgil’s *Georgics* held center stage for them as a model for expressing agrarian life and virtues poetically. In the late eighteenth and early nineteenth centuries, European Romantics stressed the individual and viewed nature as a spiritual force. At a time when the wilderness was vanishing across Europe, they identified “nature” with the remaining mitigated wilderness of farm fields and woodlots. To the Romantics, farmers lived in touch with nature – positioned to experience moments of transcendence from the mundane world.

American Echoes

In eighteenth-century America, Agrarianism was espoused by Benjamin Franklin, Thomas Jefferson, John Taylor of Carolina, and others. Mid-nineteenth-century voices included the transcendentalists Ralph Waldo Emerson and Henry David Thoreau. The next wave featured

philosopher Josiah Royce, land reformer Henry George, botanist Liberty Hyde Bailey, writer Hamlin Garland, followed by the Southern Agrarians of the 1920s and 1930s, and novelist John Steinbeck. Volumes 3 and 5 of *The Economic History of the United States* cover the conditions and practices of agriculture in nineteenth-century America: *The Farmer’s Age: Agriculture 1815–1860* by Paul W. Gates and *The Farmer’s Last Frontier: Agriculture 1860–1897* by Fred A. Shannon.

In 1930, the Southern Agrarians published “A Statement of Principles” asserting:

a Southern way of life against... the prevailing way; and ... agree[ing] that the best terms in which to represent the distinction are... Agrarian versus Industrial... Opposed to the industrial society is the Agrarian... Technically, ... an agrarian society is one in which agriculture is the leading vocation, whether for wealth, for pleasure, or for prestige—a form of labor that is pursued with intelligence and leisure, and that becomes the model to which the other forms approach as well as they may. But an agrarian regime will be secured readily enough where the superfluous industries are not allowed to rise against it. The theory of Agrarianism is that the culture of the soil is the best and most sensitive of vocations and that therefore it should have the economic preference and enlist the maximum number of workers. (Davidson et al. 2006)

Prominent agrarian voices in the mid-twentieth century include Aldo Leopold (1887–1944) and Rachel Carson (1907–1964). Leopold saw the farm ethically as a place of conservation. He believed that harm was done to ecosystems out of the farmer’s misguided sense of private ownership, which had eclipsed the idea of rural community. Following Thoreau, he expanded the idea of community to include the environment and the farm. Leopold wrote several essays and *A Sand County Almanac* (1949). Carson alerted the world to the environmental threat posed by DDT and other pesticides in *Silent Spring* (1962). She proposed using biological and ecological means of pest control. *Silent Spring* provoked debate over environmental ethics, government regulation of industry, and the appropriate uses of technology. Carson extended some of Leopold’s ideas about land ethics, such as human duties to the natural ecology.

American Neo-Agrarians

Recent agrarian thinkers are dubbed “neo-Agrarians.” Prominent among them are Wendell Berry, J. Baird Callicott, Paul B. Thompson, Gene Logsdon, Eric Freyfogle, and others. They view the world through green tinted glasses. They espouse the old agrarian views while tackling new fields, such as biotechnology, environmental studies, and new technologies on the farm. Wendell Berry has written books, essays, and poems on farm life, rural community, connection to place, sustainable agriculture, etc. He is a public defender of agrarian values. J. Baird Callicott applies a Leopoldian ethic to the problem of global climate change. He advocates a multifaceted non-homocentric environmental ethic that accords with Leopold’s assertion that “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (Leopold 1949). In Callicott’s view, an effective environmental ethic must address real-life ecological concerns in a holistic way. Paul B. Thompson brings the tools of philosophic analysis and ethics to bear in examining the environmental significance of farming in books and articles, such as *The Spirit of the Soil* (1995). In *The Agrarian Vision* (Thompson 2012), he focuses on sustainability ethics and agrarian philosophy. In several books, Eric Freyfogle explores ways for humanity to live sustainably by responsibly attuning human activities and communities to the environment.

Neo-Agrarianism attempts to incorporate the agrarian values of other traditions, as well as new knowledge to deepen and broaden its view. The past offers lessons, but in the global village today, neo-Agrarians must adopt an inclusive vision for the future. In planning the new rural community, they must register twenty-first-century global trends and society yet stay committed to sustainable living. As humanity is a part of nature, neo-Agrarians constantly remind humanity of the need to integrate human activities with natural processes.

Signs of New Life

Despite the environmental challenges posed by industrial and corporate agriculture, there are signs of new and deepening agrarian awareness. In the developed world, there are biodynamic agriculture, permaculture, and growing demand for organic food sourcing, and in the developing world, there is an upsurge of peasant labor, rural women, youth, and indigenous peoples’ movements, which are autonomous, multicultural, and free of divisive ideological, political, and economic commitments. Such movements were inspired by the Chicano farm worker organizer César Chávez of the 1960s. The new farm labor movements emphasize peasant or family farming based on sustainable practices using local resources and following local traditions. Such peasant farmers draw on their heritage, utilize local resources, and produce organic food stuffs with few external inputs. Their production tends to be aimed locally for family and community consumption and domestic markets.

Biodynamic agriculture is inspired by the work of Rudolf Steiner, especially his insistence on maintaining (1) sustainable soil fertility and (2) the relationship between plant growth and cosmic rhythms. Biodynamic agriculture stresses a holistic, spiritual understanding of nature and human life and thus aims at self-sufficiency in compost, manure, and animal feed, with little minimal external and nonnatural input. The keynote of biodynamic landscaping is preservation of ecological diversity. Biodynamic methods are being adopted worldwide. For example, tea plantations in Darjeeling are retiring chemical fertilizers and returning to traditional worm compost, manure, and biodynamic floral preparations.

Permaculture involves the construction of sustainable human living spaces in keeping with local topography. It draws upon the diversity, stability, and resilience of natural ecosystems in developing sustainable solutions to the problems of one’s living environment. It stresses cooperation with nature and care for the earth and people. Its holistic, integrated approach emphasizes contemplation and minimal impact. Permaculture

regards human beings as nature's kin, related to all life in the biosphere. It encourages people to revere the mystery of existence and approach nature with humility. Permaculturists propound ethical action principles, such as (1) conserve, use only what is needed; (2) stack functions, get multiple outputs from each element in the system; (3) repeat functions, meet each need variously; (4) reciprocate, use outputs of one element to meet needs of other elements in the system; (5) appropriate scale, make output match need scale; (6) diversify, use multiple elements to increase resilience; and (7) donate surplus, do not hoard.

Rural Trends in East Asia

In Postwar East Asia, land reform and land to the Tiller movements led to a resurgence of the independent farmer. In the 1950s, agriculturists from the United States visited various East Asian countries to teach the latest farming methods and introduce efficient, fair marketing. Following Thomas Jefferson, the Neo-Confucian thinker Xu Fuguan (1902–1982) argued that such independent farmers could serve as the pillar of democratic development in East Asia. However, following the success of land reform, cash-strapped regional governments took advantage of the surpluses created by the farmers to prime the well for industrialization, which in turn drew national attention and funds away from the farming sector. In consequence, the hearts of the next generation were set on elegant city life in modern industrial society. In recent decades, regional governments have started to realize the importance of the agriculture and food sector. Moreover, some people are beginning to return to the countryside for respite from the ubiquitous crowds, traffic, noise, and pollution of city life in East Asia.

Throughout East Asia, the age-old peasant societies have vanished, and rural societies have become less dependent on farming. Economic challenges have been pressing rural societies to diversify their economies. Dedicated farmers are

increasingly in the minority. Even rural farm labor is in short supply. Though farm labor was abundant in the recent past, it is no longer easy to recruit farm hands. Rural occupations have diversified because farming cannot support the rural population. Additionally, rising farm operating costs are spearheaded by expensive farm machines, advanced seed, fertilizers, and pesticides as well as by the training and education needed for advanced farming. Living costs have risen, as well, due to new lifestyle trends introduced by globalization. Industrialization also pushes these changes in rural society, and urbanization is penetrating rural society through regional urban centers that relay global trends. To survive, regional rural communities have to be made more attractive to the youth. Local community leaders and boosters brainstorm not only about developing industries but about attracting new businesses to create work opportunities. Still, agriculture remains a key factor.

In Taiwan, joining the WTO caused several crises in the agricultural sector, primarily from the curtailment of rice subsidies and other price supports. Some farmers turned to raising niche and value-added crops to make up for higher overhead. A major innovation has been organic rice production. Over time, the organic farmers in Taiwan have come to appreciate the ethical dimension of their activity and now practice sustainable farming just because "it is the right thing." In addition, enterprising farmers are sidestepping the traditional food marketing system, which favors the middleman, to establish their own brand names, even to deliver their products directly to consumers. Some even distribute catalogs; survey consumer satisfaction, needs, and requests; and inform customers about harvest and processing schedules. Japanese and South Korean farmers are being similarly proactive and innovative.

In China, while organic crop and range livestock production are being introduced, this development is fueled more by entrepreneurs with an eye to the bottom line than by dedicated farmers who love their vocation. The entrepreneurs' mixed motives undermine consumer acceptance

of Chinese organic certifications. Moreover, the ubiquitous soil and water contamination in China makes the organic crop and range livestock quests quixotic there.

The Green and Blue Revolutions

“Blue” has joined “green” as an environmental red button word. The idea of “blue revolution” recalls the green revolution of the 1960s and 1970s but refers to water in terms of fresh water supply and aquaculture. Fresh water supplies are dwindling due to a host of factors, such as melting glaciers, reduced rainfall, chemical and biological contamination of ground water as well as of lakes and rivers, accelerated desertification, etc. Fresh water supplies are dwindling just as human populations are soaring, and experts predict a huge impact to humanity and to the biosphere during the present century. Recent reports of the United Nations Environment Programme (UNEP) warn that as fresh water supplies dwindle, the world will face massive human suffering in the forms of starvation, famine, migration, violence, and possibly warfare as nations fight to secure life-sustaining fresh water resources for their populations. In this respect, the blue revolution will include projects to increase world supplies of fresh water by a wide variety of means.

In recent decades, Indians have realized the importance of the green revolution for increasing agricultural output to overcome starvation, feed a soaring population, and improve the standard of living of rural people. Over time, it was found, however, that the green revolution had a serious impact on fresh water supplies. The experts had led the farmers to concentrate just on crop issues, especially crop output, and did not take a holistic approach and take into account local ecosystems. They took piecemeal approaches to specific problems and completely neglected such collateral issues as the quality of fresh water supplies and the health of the environment. Many farmers still utilize this blinkered approach to farming, though it may erode the fertility of the land they farm. As people realize the danger posed by the dwindling

fresh water supply, farmers are increasingly encouraged to take off their blinkers and think about their crop issues holistically in terms of the water/food/energy connection. The time has come to initiate a blue-green “turquoise revolution” that takes a holistic approach to challenges and risks of water as well as of land.

Fish and shrimp aquaculture have arisen as another a key facet of the blue revolution – that is, the effort to farm an array of aquatic species. As in the case of the green revolution, the blue revolution is touted as a way to feed the world’s hungry; however, blue revolution producers to date mostly aim at high-end seafood production for the affluent consumers rather than at mass seafood production to feed the poor.

While salmon and shrimp farms are most prominent forms of aquaculture, aquaculture includes a wide variety of operations, aquatic species, and management systems. Aquaculture is not limited to just one form of industry or set of operations, so it is difficult to manage or regulate. While there is constant interest in expanding aquaculture operations and production, new models of aquaculture development are needed which would be ecologically attuned, incorporate technical ecosystem design and ecological principles, and be adaptable to local environmental settings. Aquaculture on any scale makes a significant environmental impact, as does land agriculture. Future aquaculture operations must be ecologically friendly, that is, enhance natural fisheries, reclaim broken ecosystems and habitats, and offer a holistic vision of the coastal areas. With new forms of aquaculture development that incorporate environmental planning, humanity could become stewards rather than destroyers of the world’s coastal aquatic ecosystems. In short, to succeed, the blue revolution must be greened and turn turquoise.

Some Problems with the Blue Revolution

Aquaculture is often touted as offering the promise of a blue revolution in fish production. Like agriculture’s successful green revolution,

aquaculture is promoted as a way to increase food production from the sea. To date, however, industrial aquaculture has wrought serious environmental and social problems. As local ecosystems and species have been adversely impacted, indigenous coastal peoples have lost their food supplies, livelihoods, even their homes and cultures, to industrial aquaculture. Meanwhile, the affluent consumers of the fish products are unaware of the negative effects of farming the sea.

In recent decades, shrimp aquaculture has spawned long-term environmental and social problems, including degradation and loss of coastal resources, tainting of waters from nearby estuaries and coastal bays, and loss of fish breeding and nursery grounds to shrimp farm operations. The shrimp aquaculture farms disrupt coastal ecology. Precious mangrove forests and diverse ecosystems are cleared to make way for the farms. Crucial coastal habitats, including mudflats, sea grass beds, and coral reefs, are degraded or despoiled. And waterways and underground aquifers are increasingly contaminated due to the farms. Ironically, shrimp farming uses clean fresh water but causes water pollution, often fouling its own nest. The use of antibiotics, pesticides, and water additives, combined with pond residues of unused feed and waste, leads to disease and pond closures. Shrimp farms, like other forms of aquaculture, create risks of genetic contamination and reduced biodiversity. Accidental release of farm shrimp or fish can negatively impact the native species. Moreover, a key factor impacting local fisheries is selective catching of wild shrimp larvae to restock the shrimp farm ponds. As global fisheries decline, the shrimp fry fishery for aquaculture has a high bycatch rate of up to 20 lb of fish lost per pound of shrimp larvae caught. Vital habitats have been lost for fish, mollusks, and crustaceans, as well as for birds, migratory species, and endangered species near the shrimp farms.

In Asia, the average aquaculture farm lasts for only a few years before pollution and disease problems cause pond closures. Overstocking and overuse of feeds and water additives are practiced. The key problem is that shrimp

farming is being conducted even though the technology is still in the R&D phase. Serious problems remain to be solved. The shrimp product itself contains health risks. The farmers' use of antibiotics, pesticides, and feed additives raises serious questions for consumers. Some of the antibiotics used in shrimp farms are close to antibiotics used to treat human diseases. Due to public concern over health risks, Japan has identified over fifteen antibiotics used in shrimp farms and has banned shrimp products with these antibiotics.

The Ethics of Eating

People the world over are increasingly concerned about the rapidly expanding degradation of the environment and biosphere. And they are becoming aware of the environmental implications of farming operations and practices and, by extension, of their eating choices. Farming activities occupy up to 50 % of the earth's land surface and exert serious impacts on the environment. Additionally, vast numbers of the world's poor people farm marginal lands and waterways and in hard times turn to global charities to carry on. Global hunger and environmental ethics concerns thus intersect, as environmental degradation erodes the livelihood of the poor.

The sustainable agriculture movement took shape during the 1980s in the United States, connecting the rural economic crisis with the environmental problems of agrichemicals and soil pollution. Sustainable agriculture promotes farming practices that sustain local ecosystems and topsoil as a necessary alternative to the industrial farm model. It embraces not only environmental protection but social fairness by arguing for sustainable farming methods and for the well-being of farm hands and consumers. Social fairness includes economic equity for farm hands as well as access to basic food stuffs for the poor. A popular way to practice sustainability ethics is to buy locally grown food in season from the producer, for example, at farmer's markets.

The local food movement advocates setting up locally based food economies that encourage

sustainable food production to enhance the environmental and public health of a locale. It defends local economies by buying locally produced food products and services rather than those delivered by distant giant food companies. In short, the local food movement encourages consumption of local food stuffs and use of reliable short supply chains.

Local food systems are the key to implementing local food values. The concept of local food systems covers how food is produced and reaches consumers, as well as consumer food options. It includes the notions of food chain and food economy. Local food systems stand in stark contrast to the industrial corporate model of food systems wherein producers and consumers are often widely separated. Local food systems reflect close relationships between producers, retailers, and consumers in particular locales. The local food systems are nuclei working to ensure the ecological and social sustainability of local communities. "Local" in this discourse is measured in geographic distance but is also understood in terms of basic ecological units demarcated by climate, soil, watershed species, and local agriculture practices. These units are called ecoregions or foodsheds, that is, locales where food is produced and consumed.

Why should people eat locally? A community supported agriculture system enables consumers to support local farmers; obtain fresher, healthier food; and better understand how the food is grown. Local eating also fosters relationships between farmers and consumers. Shopping at farmers markets often features health sessions, dissemination of information, and a space for community engagement. Local farmers' markets build community sociability and maintain local traditions while creating unique senses of community. Locally grown goods do not need to be transported cross-country or constantly cooled in large refrigeration units. Besides, locally grown foods are better because of the farms' smaller size. Local farms produce far less waste in quantity and concentration than do factory farms, which seriously pollute the surrounding air, land, and waterways. Locally grown foods support free-range or pasture-grazing farming

methods, decreasing the need for factory farms, with the accompanying waste and its effects on surrounding areas.

With the rapidly increasing world population, efficiency is crucial to reducing the widespread malnutrition today. In this respect, the questionable effectiveness of a local food system is challenged for reduced productivity per farmer that might result in decreased food supply as well as the need for agricultural expansion into new lands. Such expansion, a major contributor to global deforestation, is a huge problem, especially in regard to greenhouse gases and biodiversity. Further research on the difficulties of implementing local food systems is needed to find ways to avoid these side effects associated with small farm production.

Summary

In closing, the question arises, why Agrarianism today? Humanity's connection with the living earth is breaking up as people flock to the cities to lead artificial, disconnected lives. In the developed nations, the few remaining family farmers feel caught between giant global agribusiness and big food processors and retailers. Meanwhile, city dwellers have passing awareness of the source of their food, which they recognize as the packaged products on supermarket shelves. In the last half century, industrialized agriculture introduced economies of scale and delivered cheap food for consumers; however, this productive efficiency comes at a high cost to the environment. Moreover, industrial farm operators often neglect livestock welfare and depend on dangerous chemicals, which damage ecosystems and contaminate soil, water, and even food. The ubiquitous rise of such phenomena is fueling new calls for Agrarianism and agrarian values. And, in recent decades, people have begun to rediscover rural lifestyles or at least green their urban settings. This is important, for the survival of humanity will depend on people's acceptance of sustainable agrarian values and practices to reduce climate change and restore the health and well-being of Mother Nature on whom human life depends.

Cross-References

- [Agricultural Ethics](#)
- [Agriculture and Ethical Change](#)
- [Biodynamic Agriculture](#)
- [Buddhist Perspectives on Food and Agricultural Ethics](#)
- [Farmers' Markets](#)
- [Farms: Small Versus Large](#)
- [Jefferson's Moral Agrarianism](#)
- [Permaculture](#)
- [Sustainability of Food Production and Consumption](#)
- [Water, Food, and Agriculture](#)

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Agricultural and Food Products in Preferential Trade Agreements

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Synonyms

Agricultural and food products in regional and bilateral trade agreements; Preferential market access for agricultural and food products; Reciprocal and unilateral preferential access for agricultural and food trade

Introduction

The primary agricultural sector has been generally characterized by considerable governmental interventions through domestic support and international trade policies (Schmitz et al. 2010). Such governmental interventions are often extended to cover selected processed food products, particularly those that are deemed to be sensitive. The sensitivity of the primary agricultural sector is mainly associated with food security issues. It also stems from the influence of farmers'

organizations that persuade governments through lobbying activities to implement protectionist policies vis-à-vis foreign products and to adopt price and income support schemes. Although these policies are expected to affect consumers and taxpayers, they are normally justified by ethical arguments regarding the well-being and competitiveness of domestic agricultural producers. These arguments are often countered by questioning the ethical validity of various protectionist policies in the first place. In this context, there are two evident ethical questions that can be addressed when comparing the outcomes from trade liberalization schemes and those from protectionist policies. First, to what extent is the reallocation of benefits between few producers (gains from protectionism) and lots of consumers (gains from trade liberalization) ethical? Second, is it ethical to weigh the welfare of one group more than the welfare of another group when total welfare goes up with free trade policies or goes down with protectionist policies? These ethical questions are relevant through various trade liberalization policies, including preferential and multilateral trade agreements.

Preferential trade agreements (PTAs) are preferential market access agreements for international trade between two or more member countries relative to nonmember countries. Preferential market access policies are normally expressed through reductions or eliminations of tariff barriers and also through various types of nontariff trade preferences such as trade facilitation practices over customs administrations for imports originating from member countries. PTAs often comprise regulations that manage trade between member countries such as Sanitary and Phytosanitary (SPS) provisions, safeguard measures, Technical Barriers to Trade (TBT), and provisions on domestic support and export subsidies. In some cases, PTAs encompass common regional sector-specific policies, such as the Common Agricultural Policy (CAP) of the European Union (EU).

Policy barriers applied on agricultural and food trade remain generally higher than those applied on manufactured products' trade. Consequently, the implications of PTAs for agricultural and

food trade are expected to be different compared to those prevailing for manufactured products' trade. For example, the implementation of a comprehensive regional free trade agreement is expected to have a higher impact on intra-regional agricultural and food trade compared to trade in manufactured products. Many PTAs have more limited degrees of market access preferences for sensitive agricultural and food trade compared to trade in manufactured products. The vertical linkages between the primary agricultural sector and the food processing sector generate diverse implications of PTAs for the patterns of trade and industrial growth. Also, PTAs' treatment of domestic agricultural support policies, the prevalence of various SPS and TBT measures, and the regularity of provisions on nontariff trade policies further distinguish the implications of PTAs for agricultural and food trade.

There are several types of PTAs that are determined according to the number of member countries, geographic location, and the implementation of reciprocal versus unilateral preferences. One prominent type of PTAs is plurilateral, involving several countries. Most of these plurilateral PTAs cover countries located in geographic proximities. Such agreements are commonly termed regional trade agreements (RTAs). Prominent examples of RTAs include North American Free Trade Agreement (NAFTA) in North America, *Comunidad Andina* (CAN) or the Andean Community and *Mercado Común del Sur* (MERCOSUR) or the Common Market of the South in South America, *Mercado Común Centroamericano* (MCCA) or the Central American Common Market in Central America, Association of Southeast Asian Nations (ASEAN) in Asia, EU and the European Free Trade Association (EFTA) in Europe, Common Market for Eastern and Southern Africa (COMESA) and Southern African Development Community (SADC) in sub-Saharan Africa, Greater Arab Free Trade Area (GAFTA) and Gulf Cooperation Council (GCC) in the Middle East and North Africa, and the Caribbean Community (CARICOM) in the Caribbean region.

Many PTAs are bilateral trade agreements (BTAs), which are trade agreements between

two distant or two neighboring countries. Examples of BTAs include the United States-Chile Free Trade Agreement and Egypt-Turkey Free Trade Agreement. BTAs are often realized between one regional trading bloc and one country. Examples of such BTAs include the EU-Chile Free Trade Agreement and ASEAN-China Free Trade Agreement. RTAs and BTAs are normally characterized by reciprocal preferences in the sense that member countries offer each other preferential market access. There are some PTAs that are unilateral in nature and are mainly intended to enhance the market accessibility of various products, particularly primary agricultural commodities, from developing countries and Least Developed Countries (LDCs) to the markets of developed countries. The EU's Generalized System of Preferences (GSP) and the Development Cooperation between the EU and the African, Caribbean, and Pacific Group of States (ACP) are prominent examples of such PTAs.

There are also several types of RTAs that are classified according to the extent of market integration. Free trade areas depict the basic stage of market integration. Member countries offer each other preferential market access, but maintain their own external tariff schedules vis-à-vis imports from nonmember countries (e.g., NAFTA). Customs unions represent the next stage of market integration where member countries adopt common external tariff schedules vis-à-vis imports from nonmember countries (e.g., MERCOSUR). The extent of market integration is further promoted through Common Markets where factors of production have free intra-regional mobility (e.g., the former European Economic Community). Market integration culminates at Economic Unions where member countries harmonize their macroeconomic policies. The EU is often considered as one prominent example.

Preferential and Multilateral Trade Agreements

The sensitivity of the primary agricultural sector has resulted in slow progress in multilateral

agricultural trade negotiations through the World Trade Organization (WTO), which was formed in 1995 as the successor to the General Agreement on Tariffs and Trade (GATT). Multilateral negotiations over global liberalization schemes for agricultural trade were initiated through the GATT's Uruguay Round of multilateral negotiations (1986–1994) and resulted in the Uruguay Round's Agreement on Agriculture (URAA). The subsequent negotiation rounds over the draft modalities of the Doha Development Agenda (DDA) for agriculture have been difficult. The resulting sluggish progress in multilateral trade negotiations over agricultural and food trade have further emphasized the role of PTAs as alternative international market access policies for agricultural and food trade. PTAs often include countries that share many common economic interests, and hence, they are easier to realize compared to multilateral trade agreements.

The proliferation of PTAs could be associated with some ethical concerns when some countries are being “left out” from major influential PTAs. These countries could be then forced to ride the waves and make significant concessions when engaging in preferential agreements. PTAs are sometimes considered stumbling blocks since they can diffuse the pressure on the global trading system to reach multilateral trade agreements which could be beneficial to many groups in many countries. Consequently, PTAs could contribute in delaying the realization of multilateral agreements for agricultural and food trade through the current WTO's DDA and could adversely or favorably affect the agricultural and food sector and national welfare in many countries. Alternatively, PTAs could be perceived as building blocks toward a globally liberalized trading system which parallel the WTO's attempts through multilateral negotiations. Thus, progress in PTAs could ultimately lead to freer global trading systems and would arguably enhance global welfare in the long run. This outcome is consistent with many ethical considerations when it ultimately improves the well-being of many groups in many countries. However, some ethical concerns could be also

addressed since a freer global trading system could unfavorably impact a wide range of agricultural and food producers who could incur significant losses from increases in foreign competition and could face adversity through the process of adaptation to a globally liberalized market.

There could be some supplementary ethical considerations associated with membership in PTAs when carrying out multilateral trade negotiations. RTAs are expected to strengthen the negotiation positions of member countries through the WTO's DDA multilateral negotiations. A member country that does not individually have a strong position through these negotiations can better voice its interests through a regional trading bloc. However, the dominant negotiating positions of major regional trading blocs could occur at the expense of the interests of other (mainly developing) countries that are left out. This outcome could negatively affect many groups in these countries.

Characteristics of PTAs

The depth and breadth of trade preferences exhibit a wide variation across different PTAs. Some PTAs cover trade in virtually all products and grant free market access. Other PTAs cover some products and/or offer reduced preferential trade barriers to member countries relative to nonmember countries. Members of the WTO are required to maintain nondiscriminatory trade policies vis-à-vis all other members. These nondiscriminatory policies are expressed through the principle of Most-Favored Nation (MFN) treatment, where a preference given to one country should be extended to all other countries, and through the principle of national treatment of imported products. However, there is an exception through Article XXIV of the GATT where countries are allowed to form PTAs, provided that they do not increase barriers on imports from other WTO member countries. This Article also requires the elimination of trade barriers on “substantially all trade” between PTA member countries. The ambiguity of “substantially all

trade” has often led to various interpretations. In some cases, limited depth of trade preferences and incomplete product coverage of PTAs could be viewed as being inconsistent with the requirements outlined in this Article.

There are many agricultural products that are deemed to be sensitive because of lobbying activities (supply-managed products in Canada and the United States), cultural reasons (e.g., rice in Indonesia and Japan), or food security reasons (e.g., wheat in Middle Eastern countries). Some PTAs set limitations on preferential access for several sensitive agricultural and food products. For example, supply-managed products in Canada, such as dairy products, eggs, and poultry products, remain protected vis-à-vis imports from other NAFTA member countries. Meanwhile, several sensitive agricultural products in the United States (e.g., cotton, dairy products, and peanuts) are shielded against competition from other NAFTA member countries. Member countries of SADC implement trade barriers on intra-regional trade flows in many sensitive agricultural products, namely, cereals, cotton, and dairy products. Member countries of MERCOSUR have individual lists of sensitive agricultural products that are exempt from duty-free market access and from the implementation of common external tariffs. Also, ASEAN member countries exclude rice and other sensitive agricultural products from preferential access through the exceptions granted under the Common Effective Preferential Tariff (CEPT) scheme. Some PTAs comprise Tariff Rate Quotas (TRQs) applied on trade among member countries for sensitive agricultural products. TRQs have a two-tier tariff structure where a maximum level of imports is taxed at a low in-quota tariff rate and additional imports are subject to an over-quota tariff rate. For example, the United States-Chile Free Trade Agreement contains TRQs applied on imports of several agricultural commodities (e.g., beef, cotton, and dairy products). These limitations could favor domestic producers’ well-being. However, they could come at the expense of efficient allocation of resources and foreign producers’ and consumers’ benefits.

The extent of trade preferences of PTAs for member countries can be examined by contrasting trade barriers applied on trade flows between member countries (e.g., preferential tariffs) to trade barriers applied on imports from nonmember countries (e.g., MFN tariffs). For example, the applied MFN tariff barrier of the EU bloc on beef imports from nonmember countries is estimated to be equivalent to an ad valorem rate of 77 % in 2005, while imports from member countries have a duty-free market access (Ghazalian et al. 2011). Mexico applied an MFN tariff rate of around 20 % on beef imports compared to a duty-free market access for beef imported from NAFTA member countries (Ghazalian et al. 2011). Also, the common external applied MFN tariff rates of MERCOSUR on imports of maize (excluding seed imports) and on imports of common and durum wheat were 8 % and 10 %, respectively, compared to a duty-free intra-regional market access (United Nations Conference on Trade and Development 2012). Naturally, some ethical issues could be addressed when larger tariff gaps between MFN and preferential access rates prevent efficient producers in nonmember countries from reaching markets of regional blocs and give advantage to less efficient producers in member countries.

PTAs often apply Rules of Origin (ROO) when conferring preferences for agricultural and food trade between member countries. As discussed in Fulponi et al. (2011), there are variations in ROO criteria for products to be considered having originated from member countries. ROO requirements could include a stringent criterion that agricultural and food products should be wholly produced in member countries to benefit from preferential access. They could also include de minimis criteria which allow certain percentages of agricultural and food products to be produced in nonmember countries. The ROO policies are commonly associated with free trade areas where nonmember countries have incentives to access the regional bloc through the member country that has the lowest tariff rate. Such practices are often termed “trade deflection.” Consequently, ROO policies could be justified since they are applied by member countries

as preventive measures to trade deflection practices. However, stringent applications of ROO measures could raise concerns for some. This is because they could be implicitly used as TBT against efficient producers in nonmember countries along the supply chain, favoring domestic producers in member countries. There are some supplementary deadweight losses that are associated with complex systems of ROO. In this context, the “spaghetti bowl” phenomenon could prevail for agricultural and food trade where ROO policies of overlapping PTAs distort trade patterns and generate important transaction costs (Bhagwati 1995).

The implementation of the mandatory Country of Origin Labeling (COOL) program in the United States, which took effect on March 16 of 2009, has disturbed Canada’s and Mexico’s exports of many agricultural products to the United States (Carlberg et al. 2009). It has arguably lessened the magnitude of preferential market access provisions of NAFTA for these products. COOL regulations require retailers to provide mandatory labels on certain agricultural products (e.g., beef, chicken, lamb, pork, and fresh and frozen fruits and vegetables) indicating the source country. For meat commodities, these labels should indicate the countries where the animals are born, raised, and slaughtered. The labels indicate product of the United States when all three stages take place in the United States. For the proponents of this program, these labels are ethically defensible since they are intended to have better informed consumers regarding the attributes of the purchased products and to enhance food safety along the supply chain. However, COOL programs are perceived by some as an implicit TBT which confers an advantage to domestic producers. This mandatory labeling requirement has particularly impacted the Canadian meat industry. In many cases, producers and processors in the United States along the supply chain would incur significant costs in establishing separate lines of production to segregate primary products according to their countries of origin. Consequently, an integrated supply chain where all stages of production occurring in the United States

would circumvent these segregation costs (Carlberg et al. 2009).

The extent of nontariff preferences is generally more difficult to evaluate without empirical analysis. One of NAFTA’s nontariff preferences for Canadian beef and pork exports was the recognition of Canada’s inspection certificates by the United States (Veeman 1994). Nontariff preferences can be also implicitly generated when restrictive nontariff trade policies are applied on imports from nonmember countries. For example, the EU import restrictions on hormone-treated beef and genetically modified organisms (GMOs), which are common features in agricultural production of many major exporting countries (e.g., Australia, Canada, and the United States), have indirectly magnified the value of regional preferences for EU producers. Promoting food safety and conveying information on the process of production and on products’ attributes to consumers conform arguably well to various ethical standards expressing consumers’ rights to food information and safety. However, these policies are controversial since they are often believed to act as disguised supplementary TBT vis-à-vis foreign producers.

Many PTAs have SPS and TBT provisions that oversee trade between member countries. They often include harmonization or recognition of standards for agricultural and food products. These provisions could potentially act as implicit nontariff preferences for member countries vis-à-vis nonmember countries which have their conventional standards unrecognized or different than those accepted within the preferential trading bloc. Failing to recognize foreign standards could be incompatible with ethical norms when purposely used as implicit TBT against nonmember countries. In some other cases, SPS and TBT provisions of PTAs are associated with restrictive measures that could lessen or even eliminate the significance of trade preferences between member countries. For example, the United States implemented restrictive SPS measures on cattle and bovine meat imports from Canada following the discovery of Bovine Spongiform Encephalopathy (BSE) in Canadian cattle farms in 2003. Such intra-regional SPS and

TBT measures often operate as food safety policies. However, in some other cases, they could be considered as implicit barriers favoring domestic producers by lessening import competition from other member countries.

Implications of PTAs

Free trade policies are often associated with increases in trade flows and positive overall welfare implications. They could, however, adversely impact some groups through the process of adjustment and could bring about some ethical issues. In this context, Palmetter (2005) discussed the general aspect of free trade through various ethical theories, underscoring the costs of protectionist policies vis-à-vis losses incurred in some segments from free trade.

The evaluation of the implications of PTAs for agricultural and food trade is commonly carried out within the conventional analytical framework that describes the effects of PTAs through the trade creation and trade diversion effects (Viner 1950). The trade creation effect implies that trade preferences induce an increase in trade levels between member countries. This effect has positive welfare implications because inefficient (higher cost) production in one member country is replaced by imports produced by more efficient (lower cost) producers in another member country. Nevertheless, many higher-cost domestic producers facing a more intense import competition from lower-cost producers in other member countries would incur losses and would ultimately exit the market. The theoretical analysis suggests that these domestic resources would be eventually reallocated into other comparatively advantaged sectors. The process of labor reallocation could be cumbersome and many producers would be harmed by PTAs, at least in the short run. The trade diversion effect of PTAs indicates that trade is diverted from more efficient producers in nonmember countries to less efficient producers in member countries. In this context, trade diversion is associated with negative welfare implications. Furthermore, many producers in nonmember countries would be

disadvantaged and could face adversity through the process of adjustment and transition from their current sector to another more competitive sector.

The net welfare implications of PTAs can be arguably assessed based on the relative magnitude of trade creation and trade diversion effects. However, such additive assessment could miss some detailed ethical issues regarding the well-being of adversely affected groups. It is commonly argued that PTAs between “natural” trading partners, which are normally located in close geographic proximity, are welfare-enhancing agreements given that trade diversion effects become less significant (Wonnacott and Lutz 1989). Various policies that facilitate (or compensate for) the reallocation of producers who are adversely affected by PTAs could enhance the case for PTAs. This is particularly relevant when trade agreements are realized between natural trading partners with limited trade diversion effects.

Preferential access schemes intended to facilitate agricultural and food exports from developing countries and LDCs to the markets of developed countries (e.g., EU’s GSP, EU-ACP Development Cooperation, and many BTAs) are often favorably regarded through the development lens. They are expected to impact the well-being of domestic producers in the beneficiary developing countries and LDCs and to enhance the growth of the agricultural and food sector in these countries. However, there are concerns that such unilateral preferential agreements are not stemming from a pure goodwill adherence to ethical perspectives. Many unilateral preferential agreements arguably consist of binding procedures mainly intended to secure specific primary agricultural commodities that are scarce in developed countries (e.g., cocoa), and they do not always cover a wide range of agricultural products. Such agreements could force these countries into an undiversified production pattern.

There is a significant empirical literature that examines the implications of PTAs for agricultural and food trade. This empirical literature has estimated the trade creation and trade diversion effects on trade flows. However, it has not conducted comprehensive welfare assessments

in general. Many empirical studies examined the implications of various RTAs for aggregate agricultural and food trade (e.g., Grant and Lambert 2008; Korinek and Melatos 2009; Lambert and McKoy 2009; Sun and Reed 2010). Several other empirical studies carried out the analyses of the effects of RTAs on agricultural and food trade at disaggregated levels (Sarker and Jayasinghe 2007; Jayasinghe and Sarker 2008; Ghazalian et al. 2011). The empirical literature has reported significant trade creation effects for several RTAs at aggregate and disaggregated levels, but it has also detected considerable trade diversion effects for some RTAs.

Several PTAs, particularly those signed between developing and developed countries, include provisions to upgrade labor and environmental standards or enforce existing ones. Adherence to these provisions could conform to labor and environmental ethical standards. For example, developing countries should satisfy many basic labor and environmental conventions to benefit from an upgraded GSP system and gain improved access to the EU market. Some preferential systems could arguably generate a “race to the bottom” when they do not include labor and environmental provisions. There are ethical concerns when the formation of RTAs leads to the deterioration of domestic labor regulations due to increases in market competition levels (Häberli et al. 2012). Also, competition from lower-wage member countries could create various ethical considerations for the labor market within the regional trading bloc.

Lastly, RTAs could enhance regional food security by reducing fluctuations in output available in the market and by stabilizing prices (Josling 2011). This positive outcome is ethically relevant especially in the case of RTAs composed of developing countries (e.g., COMESA) where food security remains a major issue for a large proportion of the population. Also, PTAs could result in dynamic gains through the occurrence of flows of knowledge and information between member countries (Josling 2011), particularly from highly competitive agricultural and food sectors in some member countries to agricultural and food sectors in other member countries.

Summary

Membership in a PTA can affect national economic interests in different ways. It can strengthen countries’ positions in international negotiations. Alternatively, it can overshadow their individual economic interests, particularly when their influence is limited within the PTA compared to other member countries. Furthermore, countries which are left outside major influential PTAs could be unfavorably impacted and could be forced to make significant concessions. Several segments in such countries could be negatively affected, raising ethical concerns.

The characteristics and implications of PTAs for agricultural and food trade encompass several economic and ethical considerations. The use of SPS and ROO measures and the implementation of various agricultural and food standard policies through PTAs could be favorably regarded when associated with the declared food safety concerns along the supply chain and with the rights of consumers to product and process information. Hence, they can be perceived as being ethically consistent with the rights of consumers to food safety and food information. However, these measures could be arguably used as implicit TBT to favor domestic producers and could eventually affect the well-being of producers in other member and nonmember countries.

Trade creation effects of PTAs are expected to promote efficiency since lower-cost production replaces higher-cost production within the preferential trading bloc. However, trade creation effects also mean that higher-cost producers would incur losses and would eventually exit the market and that the adjustment procedure could be accompanied with adversity for these producers. Equivalent description applies to producers in nonmember countries who incur losses and exit the market due to trade diversion effects. These adjustment procedures could generate some significant ethical concerns.

In theory, some of the gains realized through PTAs could be redistributed to the adversely affected producers through relevant policies. This would alleviate the ethical concerns about the economic distress faced by these producers.

In practice, such policies may be difficult to implement and could generate considerable dead-weight losses to the economy. Hence, some attempts to correct one ethical issue could generate another one.

Finally, PTAs could lead to improvements in labor and environmental standards. They could also promote spillover effects expressed through the flow of knowledge and technology from a competitive sector in one member country to another member country. These events could arguably contribute in supporting the case for PTAs.

Cross-References

- [Agricultural Ethics](#)
- [Economy of Agriculture and Food](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Food Labeling](#)
- [Food Security and International Trade](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [International Food Quality Standards](#)
- [Multilateral Trade Organizations, Food, and Agriculture](#)
- [NAFTA and the Food and Agricultural Industries](#)
- [Trade and Development in the Food and Agricultural Sectors](#)

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Agricultural Cooperatives

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Synonyms

Agrarian social movement organizations; Farm organizations; Farmer cooperatives; Farmer empowerment strategies; Peasant organizations

Introduction

Cooperatives are formal social movements utilized around the globe often in reaction to various social-economic injustices and/or market failures. Their formation in the USA has been influenced by a legacy inherited from farmers and agricultural cooperatives developed first in Germany, Switzerland, Denmark, Ireland, and Iceland and from labor and consumer cooperatives in the UK, France, Sweden, Finland, Norway, and Italy. Historically disadvantaged farmers and/or workers have spearheaded their development both in Europe and the USA. They have also been used in a formal development context throughout the developing world, often driven with a similar impetus to address social justice issues, though with mixed results. This entry focuses on agricultural cooperatives in the USA only, though the tensions specified here highlight the kinds of challenges and trade-offs faced by cooperatives elsewhere.

Agricultural Cooperatives in the USA

Agricultural cooperatives began to appear in the USA in significant numbers in the 1800s, though organizing efforts existed back into the colonial era. The period from 1890 to 1920 was particularly active, with as many as 14,000 farmer cooperatives operating by 1920. Much of this activity was triggered by a severely depressed farm

economy of the 1890s, as well as the emergence of large corporate bodies that could exercise monopoly (seller) and monopsony (buyer) power over farmers. Cooperatives were organized to accommodate to the severity of economic conditions and to help empower farmers relative to the market power of much larger firms.

Cooperatives were controversial however in that they raised questions concerning collusion among farmers, price fixing, and violations of antitrust legislation. Hard fought political action prevailed in favor of farmers in 1922 with passage of the Capper-Volstead Act. Capper-Volstead provided farmers the legal right to market their output collectively. Currently there are 2,285 agricultural cooperatives in the USA with an overall gross business volume of \$213.5 billion (Ali et al. 2011). Historically, they have accounted for approximately one third market share of all agriculture marketings and one quarter of supply purchases. Radical declines in numbers have occurred over time, due to the industrialization of farm production, globalization of competition, and organizational consolidations through mergers and acquisitions, as well as bankruptcies.

Most of the scholarly literature on agricultural cooperatives exists within two academic disciplines, agricultural economics, and rural sociology; and of these two, agricultural economics predominates by sheer volume of work. The agricultural economics lens tends to resolve within a neoclassical perspective, with much of the writing (though not all) conflating to questions of efficiency, with important subtopics of study on finance, market concentration, market structure, life cycle of firms, value-added, and new generation cooperatives among others. Sociological research tends to resolve to issues of power, democracy, and social justice as viewed within three conceptual lenses, i.e., micro, mezzo, and macro. Microlevel research focuses on social-psychological and demographic determinants of participation. Participation is understood both as economic patronage and involvement in democratic governance. The mezzo level of analysis examines the design of organizations to achieve such governance provisions as member

oversight, policy making, as well as participation. Macro levels have focused on such issues as women's involvement in decision-making, market concentration, conversion of cooperatives to investment firms, choice of cooperative structure, impacts of technological change on cooperatives, and cooperative functions in alternative food systems. Both economic and sociologically relevant literature can be found in the *Journal of Cooperatives* and its predecessor the *Journal of Agricultural Cooperation*, *Rural Sociology*, *Sociologia Ruralis*; *Journal of Rural Cooperation*, *Journal of Co-operative Studies*; *Journal of Agriculture, Food Systems, and Community Development*; *Annals of Public and Cooperative Economics*, *Agribusiness*; and the *American Journal of Agricultural Economics*. There are significant libraries online at the University of Wisconsin Center for Cooperatives, the Center for Cooperative Studies at the University of Saskatchewan, and the USDA, Rural Development-Cooperative Programs web page.

Much of this literature is unidimensional, however, in the sense that it does not present cooperatives' intrinsic design and history as full of opposing tensions and contradictions. It tends to be strictly economic or sociological without a more holistic detailing of various trade-offs and dilemmas. In introducing agricultural cooperatives for this entry, their organizing principles as designed to be distinct from investment-oriented firms (IOFs) will be reviewed, as well as their traditional role as providing countervailing power for farmers, and as conditioned by the development of integrated "dirt to plate" value chains since the turn of the last century. These aspects of cooperatives, i.e., their design and role, themselves generate additional tensions internally within the organization and externally in relation to a dynamic socioeconomic and highly competitive environment. Mooney (2004) and Gray et al. (2001) have specified several of these tensions and dilemmas in various publications; to include complex expertise/grass roots needs, efficiency/equality, bureaucracy/participation, and authoritarian logic/democratic logic. Three iconic tensions will be highlighted here, (1) capitalism/democracy, (2) local/global, and (3) production/consumption.

Examination of these tensions will be used to highlight how cooperative institutionalization (i.e., diminution of original democratic commitments, embeddedness and power) has occurred over time, but also how, as organizations, they continue to hold promise for addressing larger contextual challenges.

Organizational Design and Cooperative Difference

Cooperative Principles

Cooperatives are organized around a set of guiding principles, variously formulated and presented by the International Cooperative Alliance (2013) and as referenced in Zeulie and Cropp (2004) among others. These principles were first formally codified by the Rochdale weavers of England in the mid-1800s and Schulze and Delitzsch of the German credit union movement during the same period.

Central to all formulations is an emphasis on member/owner/patron **use** of the activity of the organization. "Use" can involve, among many functions, assembling of a commodity, grading, processing and manufacturing, and wholesaling and retailing. Products might include, among others, milk, fruits and vegetable, grains, livestock meat, as well as supply purchases. This use aspect of cooperatives is perhaps best captured by Dunn (1988) in three cooperative principles as:

1. The user-owner principle: Those who own and finance the cooperative are those who use the cooperative.
2. The user-control principle: Those who control the cooperative are those who use the cooperative.
3. The user-benefits principle: The cooperative's sole purpose is to provide and distribute benefits to its users on the basis of their use.

While other versions exist, this set of principles best highlights the use aspects of cooperatives. Designed for use is perhaps one of the most distinctive features of cooperatives, particularly when compared to their organizational rivals, investment firms. The following section provides

greater detail on cooperative to IOF differences, in order to emphasize what they are, by also reviewing what they are not.

IOFs and Cooperatives Differences

Investment-Oriented Firms: In linear logic, investors with money seek to make a return on their money by investing in an activity that will return a profit, thereby ending up with more money. Investors-owners have little connection to the business activity of the firm. If use is made of the activity, it is only on an incidental basis. Governance is, in part, organized by shares owned. Typically shareholders have one vote per share held, i.e., votes are tied to shares owned. They are no organizational limits on the amount of shares any one investor can own. Since votes are attached to shares, this allows for concentrations of influence and power in ownership. These concentrations are not discouraged since it is understood that those with the most ownership capital have the most at risk.

A board of directors, elected by the shareholders, provides policy making and strategic planning, as well as long-term oversight and direction of the firm. A Corporate Executive Officer (CEO) is hired by the directorship to assemble a complement management team to handle the daily decision-making and activities of the firm. It is not unusual for the firm CEO to be a major stockholder of the firm, also permitting additional concentrations of power in cross board/management relations. These concentrations are encouraged, since managers with ownership are seen as increasingly vetted to firm success. Firm success ultimately translates as profits. The fundamental and organizing logic of the firm, as with all investment firms, the dominant business form globally, is to make a return on investment (roi) for its shareholders.

Cooperatives are distinct from IOFs in use, ownership, and governance. In a cooperative, members (or potential members) of a cooperative may need a service or a product and collectively organize in order to provide it or obtain it at a more reasonable price. The organization must achieve some financial margin over costs, to continue to finance, and provide for

a flow of services through time. They are not organized to make a return on investment. For cooperative patrons, the activity of the organization (and their use of that activity) is central to their relationship with the firm. Ownership is based on use rather than on shares purchased. Members own the cooperative in proportion to the use they make of it. The more they use the organization, the larger their contribution to its funding and ownership, as well as the greater the benefits received. Generally, no matter how much each member owns, they still have only one vote in elections, i.e., one-member, one-vote, though proportional voting is utilized in a small percentage of cooperatives. In proportional voting, the more a member uses the cooperative, the greater the volume accounted for by their patronage, the more votes held. However, the predominant voting/governance system used in the cooperative community generally is based on one-member, one-vote. Members elect a governing board either directly or through an elected delegate system. The elected board provides policy making, strategic planning, long-term oversight, and direction of the firm. A Cooperative Executive Officer (CEO) is hired by the board to assemble a complement management team and to handle daily decision-making and activities of the firm. In a cooperative, while the CEO may also be a farmer and a member, farmer-member status does not entitle a manager voting rights any different from any other farmer-member.

For cooperative patrons, the activity of the organization (and their use of that activity) is central to their relationship with the organization. Ownership, governance, and use of the activity are contained within the same group of people in an internal relationship of membership; the fundamental and organizing logic being to provide service (broadly defined) through time to members. The multiple functions of cooperatives as patronage (use), ownership, democratic governance, and equality are organizationally designed for and emphasized.

Traditional Role as Countervailing Power

Cooperatives are often formed when “overproduction” results in low prices (relative

to costs) and/or when “holdup” situations occur, such that a monopsonist (single buyer) or a oligopsonist (few buyers with a large market share) can dictate prices to independent producers. By aggregating, farmers are able to coordinate sales, gain some market power, and improve incomes. Similar dynamics can occur upstream when purchasing from a single seller (monopoly) or oligopolist (few sellers with large market share). By organizing, members can assemble their own input-supply orders and services without having to rely upon monopoly and/or oligopoly firms. Agricultural cooperatives have integrated into value chains as well, processing their output, giving themselves scale and product niche for capturing value, rather than turning their output over to commodity traders and private processors.

Modification of Countervailing Role

Beginning with the emergence of what some have termed “the new agriculture” (Boehlje and Schrader 1998; Gray 2000) at the turn of the last century, various technological developments, e.g., information monitoring and biotechnology, have permitted very tight vertical integrations of food chains from “dirt to plate” in some sectors of the agricultural economy. Large agribusiness multinationals, e.g., ConAgra, Cargill, and ADM, developed these chains, while holding large market shares across several commodities. These chains are solidified with contracts between firm and farmer, such that the firm controls many of the production decisions, while limiting farmer control over their own output. Where production contracts are used, farmer empowerment is often diminished.

Cooperatives are caught by the limits of their own structure. Large IOFs can offer a diversity of products, produced in different locations, with set limits on amounts of product accepted from farmers. They can control their supply. Cooperatives, as vehicles for their farmer-member-owners, are obligated to accept, with some few exceptions, the entire product their members bring for marketing/processing. They guarantee a market, no matter how much product members seek to market. Farmers are embedded in

location, by the location of their farms, and as such cooperatives are embedded locationally by of their membership. Farmer-owner-members generally are committed not only to the activity of farming but to specific products of production. These aspects of quantity, location, and product represent rigidity relative to large IOF multinationals with their multiple locations, multiple products, and the capacity to limit acceptance of product from suppliers.

Continuing technological developments, firm flexibility, and access to resources facilitate IOF development of a diversity of differentiated products, and segmented markets that are integral to the formation of tightly controlled value chains. This presence as a market force allows IOFs to forgo price competition (a possible cooperative leverage) in favor of competing with brands, advertising campaigns, research and development, and expansion in plant capacities (Gray et al. 2001).

Under these conditions gaining market access for farmers can become a problem, let alone being able to countervail IOF power. The strategy taken by some cooperatives, e.g., Land O’Lakes, Cenex-Harvest States, Profac, has been to partner and to form joint ventures and strategic alliances with IOFs. IOFs can integrate into IOF-owned value chains, the core competencies of cooperatives, i.e., the ability to handle massive quantities of primary commodities in a regulated and predictable fashion, with direct links with farmers. Farmers in return obtain access to markets for their products.

However, when these cooperative to IOF relationships occur, they do mix organizational logics and tend to place “use” in a subordinate position relative to “roi” and the profit interests of stockholders. Very few if any agricultural cooperatives can approach the scope and market presence of such deep pocket firms as Cargill, ADM, ConAgra, or Dean Foods. Possibly Cenex-Harvest States, Land O’Lakes, Dairy Farmers of America (DFA), Ocean Spray, some of the largest agricultural cooperatives in the USA, are positioned in terms of scale and scope to challenge IOFs in the interests of their farmer-members. However and paradoxically, to the extent

cooperatives take this path, they also put various democratic-member responsive aspects of the organization at risk.

Socioeconomic Tensions

Cooperatives must operate with the multiple functions of farmer use (governance, ownership, benefits,) with organizational commitments to equality and democracy, in a context primarily dominated by investment firms and IOF logic. These relationships among members, cooperative firms, and competitive context can act as tipping points to the character of the cooperative organization. Consideration of these tensions and shifts integral to them can help explain cooperative institutionalization (i.e., loss of democratic commitments and embeddedness, as well as loss of power) though it can also highlight some of the continued promise of cooperatives.

Democracy/Capitalism

While cooperatives are democratic organizations of members that emphasize use, they must also realize earnings to survive over time. They must function as a democracy in a context that emphasizes share, roi capitalism. The cooperative-democracy/capitalism tension is perhaps better understood with some greater detail as “person-use-democratic-organization/capital-return on investment (roi)-share-organization.” Cooperatives privilege personhood, IOFs privilege capital. Cooperatives privilege person-use, IOFs privilege capital-return on investment; and cooperatives privilege democracy and equality, IOFs privilege share-voting and proportional governance.

Earnings must be made in competition with a predominant business form that emphasizes short-term return on investment. IOFs as the dominant business form in the larger sociopolitical economy create a context of pressure that pulls on cooperatives to adapt to the needs of capital rather than the needs in use. Needs of capital are often translated as the need to be unencumbered for efficiency reasons and due to a return equivalent to the size of

investment – argued as “investment will not occur otherwise.” The tension, “person-use-democratic-organization/capital-return on investment (roi)-share-organization,” becomes very real with considerable pressure from within the competitive context, to simplify it toward a “capital-roi-organization.” From a neoclassical economics perspective, to do otherwise is not to be efficient.

There are then, frequent threats to the “one-person, one vote” principle in terms of modifying it, eliminating it, or de-vitalizing it due to the unintended consequences of other dynamics. Direct threats can often come out of the theoretical agency of neoclassical economics. From this position, arguments are made to shift one-member, one-vote to proportional voting, i.e., aligning votes held to volume transacted with the cooperative. It is a general practice in cooperatives that as “use” is made of the cooperative, equity contributions are assessed according to “use” made of the organization. The greater the volume transacted by a member, the more equity, and in proportional voting, the more votes. However, when proportional voting is used, it de-privileges equality of member and personhood and in turn weights organizational rationality toward the needs of capital, and in particular toward the selective needs of larger farmers. Larger farms, in general, account for greater level of volume committed. With proportional voting, equality fades.

At other times there is pressure for the wholesale restructuring of cooperatives to IOFs (e.g., California Olive Growers, Calavao Avocados, GoldKist, Capital Milk, American Rice, Saskatchewan, Manitoba, and Alberta Wheat Pools). Conversion to IOFs simplifies cooperatives away from the multiple values of “use” and the potentialities of democratic voice and reorganizes them to a singular logic of roi and exchange value. Conversion eliminates the democracy/capitalism tension entirely and shifts the organization to a capital-roi rationality.

There are secondary pressures that serve to devitalize democratic principles. As mentioned previously, there has been considerable concentration of ag-markets such that large agribusiness IOFs often hold commanding market shares

(e.g., Cargill, ADM, and ConAgra). These firms set the competitive context for cooperatives in many sectors. To accommodate to this competition (as well as to the decline in farm numbers due to farm industrialization), many cooperatives have merged, made acquisitions, and formed joint ventures creating complex bureaucracies in their own right. These structures create distance between farmers and the decision-making points of the organization, thereby muting democratic dynamics, even if one-person, one-vote principles are followed (Fairbarin 2004). These distances are even more elongated, and in fact there can be a near complete fracture of member voice in cooperative/IOF joint ventures. Boards of directors continue to be elected from farmers, though the complexity of these organizations and expertise required to function on boards can be well beyond the skills of individual farmer-members.

This distance is complicated by a management that frequently holds more information about, for example, law, finance, and marketing than directors. Fulton and Larson (2012) refer to this dynamic as a problem in “asymmetry of information” between agents and principal, agents being a management, hired by directors, and directors acting as the principals of the organization (ultimately serving at the behest of the members). Fulton and Larson (2012) suggest the agent/principal problem is more complicated by CEOs who come with different agendas, often based in inflating their own marketability and exchange value in the larger national and global market. They tend to conceive and manage organizations in a manner congruent with the management of IOFs. Their performance expectations may be based in “grand visions” for the organization and such personal goals as high salaries, perks, and job security (Souza and Herman 2012). Under these circumstances the board may come to be in a near dependent relationship to management, rather than in a position as strategic decision-maker.

To continue through time in providing service to members organized around use values, the cooperatives must retain the use/financial returns tension. Earnings are necessary to maintain the

financial needs of the organization. However, vigilance must be exercised to prevent a dominant tipping toward roi imperatives (in spite of the considerable pressures to do so, as articulated above). To do otherwise is to render impotent the use-democracy aspects of the organization (Gray and Stofferahn 2014).

Local/Global Tension

In pursuing growth and profitability, some cooperatives have developed global locations (e.g., Cenex-Harvest, Land O’Lakes) to compete with investor-oriented transnational corporations (TNCs). This adds another layer of distance (i.e., physical distance) between members, member governance, and cooperative decision-making. This distance can then tip a member/management tension toward management prerogatives (the agent) as well as the needs of capital.

Globalization, along with bureaucratization, tends to demand standardization and often a resulting subordination of unique local qualities. Cooperatives, given their unique user-owner character, have a strong tendency to be locally embedded. Equity-capital resides with the user-owners and in the case of farming, where user-owners live, i.e., on the farm. This is quite different from investment-oriented capital that seeks fluidity and freedom (as opposed to freedom of the person). Local embeddedness from the standpoint of capital and from the agency of neoclassical economics is an unnecessary constraint that interferes with mobility and the efficient application of capital resources. However, from a person-centered understanding, geographic embeddedness prevents capital flight. Mooney (2004, p. 88) suggests that, from a historical perspective, “geographic embeddedness serves a long-term functional adaptation (an efficiency of a different sort) that shields cooperatives and communities to which they are [embedded] from . . . recession that would drive capital from the region.”

While cooperative character results in a natural embeddedness, the demands of a neoclassical efficiency and the mobility of capital, IOF competition, organizational complexity, globalization, and CEO managerial culture, call for a “freeing-up” and disencumbering of capital

from locally “constrained” attachments. Like the person-use/capital-investment tension, cooperatives need some degree of both in terms of market development, but an overemphasis can result in a loss of local identity as well as a differentiated uniqueness that only embeddedness can provide (Gray and Stofferahn 2014).

Production/Consumption Tension

There is little acknowledgment in either the cooperative literature or in cooperative practice, of the importance of deliberately linking production with consumption. However, it is of central importance in the context of challenges from the larger socio-political economy; and it is here that agriculture cooperatives hold the most promise. The current organization of agriculture tends to treat various environmental and human costs as externalities. There is little opportunity, beyond direct government regulation, to bring these costs inside business decision-making, particularly as organized around IOF logic and rationality. This is in part due to the severe market separation of production and consumption. Production and consumption interests tend to be understood at antagonistic poles. Yet they presuppose each other, one requires the other. Production anticipates consumption, consumption anticipates production.

As a potentiality and as articulated from an earlier tradition of cooperative development, Voorhis (1961, p. 150) suggests the development of a cooperative commonwealth: “...if a considerable proportion of farm crops [and food] could be sold directly by farmer-owned enterprises to consumer-owned ones, the spread between what farmers receive and what consumers pay would amount simply to the costs of processing, transportation and sale” (as cited in Mooney 2004, p. 85). This would raise the possibility of better returns to farmers and lower prices to consumer. Perhaps more importantly, “member-users” of the respective services of agricultural and consumer cooperatives could provide, through democratic process (and through the use values of governance, ownership, and benefits) a basis for internalizing what has been externalized (Mooney 2004). Health, environmental, and land-use concerns would no

longer need to be as external as they are with the ROI logic of investment firms. With membership and use values of democratic governance and ownership, what exists in a member’s life world (e.g., environmental and social costs among many other things) could be internalized.

The potential of cooperative organizations to internalize externalities with use values, and through their respective democratic process, provides a potentiality for addressing these problems. In a relative sense, this potential is much greater than the singular rationality inherent in IOFs, given their characteristic external and disconnected relations among production, investment, ownership, benefit, and consumption. The emergence of community-supported agriculture (CSAs), farm to school and institutional agriculture, farmers’ markets, cooperative farm stores, and produce auctions, though yet on an incipient level, demonstrates the viability of this linking (Gray 2005). Many of these initiatives are organized either formally or informally along the guidelines of cooperative principles (Gray and Stofferahn 2014).

Summary

Agricultural cooperatives’ distinct form and role in countervailing investment-oriented firms in the marketplace has generated a series of socioeconomic tensions, both internally and in relation to the external environment. Three iconic tensions addressed here were democracy/capitalism, local/global, and production/consumption. To varying degrees, both aspects of these tensions are needed to preserve cooperative character. While cooperatives are democratic organizations of members that emphasize use, earnings must be realized to continue to provide use value over time. However, an overemphasis on earnings can result in loss of its democratic voice aspects. Cooperatives need both local embeddedness plus some degree of geographic expansiveness for market development; however, an overemphasis in expansion can result in a loss of local identity, product uniqueness, as well as member voice. Historically it has been difficult to retain the tensions in a balance that preserves cooperative democratic character. Various technological and

industrial developments, organizational consolidations, as well as the globalization of IOF competition have shifted firm shape and behaviors toward an investment model and away from the local and toward the global.

LeHeron and Roche (1997) suggest more energy be spent from a civic legacy perspective, on sorting out and bequeathing institutions to future generations that are structured for democratic voice opportunities. As economic entities, agricultural cooperatives may be among one of the few institutions in rural areas that retain a semblance of democratic governance (Mooney 2004). Those cooperatives, in intense struggles with large multinational corporations, have surely lost some democratic vitality as discussed above; though from a comparative perspective, they continue to account for greater local ownership than IOFs.

Both Alperovitz (2013) and Wolf (2012) highlight cooperatives as a possible alternative solution to the current systemic problems of economic stagnation, unemployment, and environmental degradation. Alperovitz in particular, speaks of alternative forms of ownership, cooperatives, and credit unions, among others, as representing a possible “prehistory.” He posits that while some alternative forms of ownership and production may be in a weak or early stage of development, they may gain much greater ascendance if the objective conditions of everyday living continue to worsen. The current incipient but rapidly growing nature of community-supported agriculture, farm to school and farm to institution agriculture, farmers’ markets, and cooperative farm stores may be a methodology that brings production and consumption together in a more collaborative way and in a manner that currently is oftentimes facilitated with the democratic voice opportunities of cooperatives. By internalizing into an organization with democratic voice and use opportunities, i.e., governance, ownership, and benefits, various environmental social and economic costs might be more holistically addressed (The views expressed in this entry are those of the author and do not necessarily reflect those of any associated program, department, administration, or university (Gray and Stofferahn 2014)).

Cross-References

- ▶ Agriculture of the Middle
- ▶ Civic Agriculture
- ▶ Community-Supported Agriculture
- ▶ Farmers’ Markets

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Agricultural Ethics

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Synonyms

Farming Ethics

Introduction

Agricultural ethics is a form of practical ethics that addresses ethical issues or questions that arise in conjunction with the production and distribution of food and fiber goods. The scope of agricultural ethics is, in one sense, delimited by the scope of agriculture. Conceived narrowly, agriculture is the use of technology to cultivate crops or the practice of animal husbandry: A narrow scope would exclude the various forms of scavenging, hunting, or fishing that have contributed to human food needs for centuries. It might also exclude activities that occur after food crops or animals leave the premises of a farming operation, including transport, milling or slaughter, further processing, food manufacturing, food or fiber distribution, and retail sales. Defined more broadly, the scope of agriculture might include all of these activities and might further be extended to include a variety of natural resource management practices such as forestry, game management, and water resource conservation. An even broader definition might

follow from the scope of research institutions and government ministries organized around the idea of agriculture, which might include all of food safety, veterinary medicine, parks and tourism, or any of the applied biological science activities that support these more practical activities. In its broadest definition, agricultural ethics would thus encompass all the subject matter contained in the *Encyclopedia of Food and Agricultural Ethics*, though common parlance would probably deploy an implied distinction between agriculture and cooking, on the one hand, or dietetics and nutrition, on the other.

Given that many if not most of the other articles in this volume are dedicated to substantive topics falling under the general heading of agricultural ethics, this article will make no further attempt to survey, list, or categorize the topics that would be included under the heading of agricultural ethics. A quick look at the *Encyclopedia* index will provide an overview. However, there are a number of philosophical and methodological questions that arise in connection with the content and approach in agricultural ethics: Is agricultural ethics best thought of as an application of more general ethical theories? Does a non-theory-driven approach to practice speak to ethical issues in agriculture? Is there anything unique or special (other than general subject matter) that would distinguish agricultural ethics from other forms of practical ethics, including business ethics, medical ethics, environmental ethics, journalistic ethics, or research ethics? What is the relationship between agricultural ethics and these other fields, and especially environmental ethics, given the latter's concern for environmental impacts of human practice and the ethical norms that should apply to our treatment of nonhumans, including animals, species, and ecosystems? How does agricultural ethics intersect with classical approaches in philosophical ethics such as consequentialism, deontology, or virtue ethics? What is the relationship between agricultural ethics and the broader tradition of philosophical inquiry and writing? The balance of this essay will take up each of these questions in turn.

Agricultural Ethics and Ethical Theory

Many philosophical problems within agricultural ethics are, in fact, typical of practical ethics in general. Practical ethics is the division of ethics in which arguments or analyses are expected to bear directly on human practice or action. An inquiry in practical ethics addresses the general question “How should we act?” in reference to specific circumstances faced by individuals or groups. Practical ethics can be distinguished from *meta-ethics*, where the focus of the inquiry is to provide a general account of the nature and logic of ethical conduct or decision making, and from *ethical theory* where the focus is to articulate a broadly – often universally – applicable theory of right conduct. Some theorists in practical ethics (including agricultural ethics) presume that arguments addressed toward steering or evaluating human conduct in specific cases should *apply* ethical theories. For them, the task of practical ethics is to specify empirical details that would make general norms or principles supported by ethical theory (e.g., act so as to produce the greatest good for the greatest number) meaningful and action guiding in a particular situation. Hence, some theorists characterize agricultural ethics as a form of *applied ethics*. Other theorists have questioned this model and see practical ethics as a process of moral reasoning in which individuals and groups indeed bring judgment to bear on human conduct, but not in a manner that can be accurately described as the application of a moral theory. Thus, for example, one might think of ethical theory as a way to generate arguments and systematize reasoning so that many different possible reasons could be considered at the moment of evaluation or practical decision making, rather than as an activity prior to practical decision making where general principals of moral correctness are adjudicated.

Some authors writing in agricultural ethics seem clearly to explore the implications of a particular theoretical approach for problems that arise in the production and distribution of food and fiber. The most prominent example in contemporary times may be Peter Singer. Singer

is widely known for work on two key problems in agricultural ethics, global hunger, and the treatment of livestock. In both cases, his practical conclusions derive from a general moral principle: If one can do something that alleviates great harm to one party at very small cost (or harm) to oneself, one is morally obligated to do it. Singer has argued on the one hand that this principle is so general that it would be endorsed by everyone, without regard to their commitments to a systematic and consistent view of morality (e.g., an ethical theory) (Singer 1972). On the other that the principle is strongly supported by a sophisticated version of utilitarianism, and Singer’s book *Practical Ethics* makes this connection explicit (Singer 1979a). Either argument can be seen as strategy for establishing a general principle that can then be applied to specific cases so as to generate action-guiding recommendations in practical ethics.

In the case of hunger, Singer’s application of the principle has been to support arguments that comparatively better-off people (such as any middle-class person from an industrial economy) are morally obligated to divert some portion of their income to help hungry people. In early versions of this argument, Singer focused specifically on the obligation to support efforts at famine relief. He argued in favor of food aid, first and foremost as personal obligation that individuals would fulfill through donations to organizations (such as CARE or Oxfam) dedicated to the relief of hunger but also as a political obligation to support actions by governments that would also be organized around feeding hungry people. In later work, the argument was formulated more generally as an obligation to help people in extreme poverty, without specifying that the target of assistance is necessarily tied to relief from hunger and the delivery of food aid. Singer’s modification of this argument may have reflected his growing awareness that food aid can have deleterious effects on poor farmers; hence, a prescription too narrowly focused on food may support forms of action that, in fact, *fail* to satisfy the terms of his general principle.

With respect to animals, Singer has argued that the suffering endured by livestock in modern production systems is very great in comparison to the pleasure that human beings derive from consuming meat and other animal products. Thus again in a fairly straightforward application of his general principle, Singer argues that individuals are obligated to desist from consumption of animal products that have been derived from conditions in which livestock suffer (Singer 1975). Singer has shown awareness that this position does not prescribe vegetarianism in all cases. Certainly in cases where consumption of meat, milk, or eggs is necessary for survival, eating animal products would be morally justified. More subtly, if animals can be raised under humane conditions and slaughtered painlessly, Singer's general principle might not entail any form of vegetarianism. Humane dairy and egg production, for example, might be compatible with Singer's principle; hence, veganism would not strictly be implied. What is more, Singer has at one juncture argued that the painless death of a nonhuman animal is not a deeply significant form of harm to them; hence, there may be circumstances where eating meat would be justifiable, as well (Singer 1979b).

In both hunger and animal ethics, Singer's arguments reflect an approach that can be accurately characterized as an application of ethical theory to a specific problem in agricultural ethics. His approach to practical ethics is to first assert and argue for a principle or rule, then to explore the implications of that principle with respect to key issues arising in connection with agriculture and food. Singer's work is thus a particularly apt illustration of the applied approach, but others who see agricultural ethics as a form of applied ethics would reject his commitment to utilitarianism and consequentialism. Several philosophers who have written on the two problems of most interest to Singer – animal use and global hunger – exemplify the application of deontological or neo-Kantian ethical theory. Tom Regan's book *The Case for Animal Rights* was an explicit attempt to develop an approach to the ethics of animal use that draws on Immanuel Kant's philosophy. Regan argues that many nonhuman

animals – including all livestock species – are “subjects of a life.” They exhibit the features that we associate with mentality or mental life. They are conscious and sentient – features noted by Singer in connection to their ability to feel pain – but they are more than simple receptacles or vessels that, like an empty glass, get filled up with painful or pleasurable sensations (Regan 1980).

Regan's work is more characteristic of an applied approach than Singer's in one important respect. Regan's strategy is to first refute ethical theories such as utilitarianism, arguing that they fail to show adequate respect for the individual dignity of beings that have sense of their own individual identity as subjects. Indeed, Regan finds fault with Kant's own theory, arguing that it fails to recognize animal subjectivity. Once other theoretical approaches have been shown to be lacking, Regan offers his own theoretical alternative. In Regan's view, *any* relationship defined by instrumental use of a creature who possesses subjectivity fails to respect that creature's dignity. Theories that are not based on respect for subjects of a life are, given Regan's arguments, going to fail with respect to animals and also with respect to many human beings, including children and adults with severely compromised cognitive capacities. It is on these philosophical grounds that he finds animal production in general, and certainly any use that involves the death of the animal, to be strictly forbidden on moral grounds.

Philosophers including Onora O'Neill and Henry Shue developed deontological approaches to the question of global hunger. In *Faces of Hunger*, O'Neill argues that global hunger places human beings into positions of abject need, a position that is totally incompatible with Kant's master principle of ethics, the Categorical Imperative. It is impossible to will that people should occupy such positions of abject need and vulnerability as a universalizable principle of morality; hence, those social and political practices that create circumstances of hunger are inconsistent with the most basic demands of morality (O'Neill 1986). Shue developed a general theory of rights in his book *Basic Rights*

such that basic needs of health and bodily integrity have priority over political rights such as freedom of speech, assembly, and the right to pursue economic endeavors in a market economy. A global order in which some are hungry violates the basic principles of a just society and cannot be rationalized on moral grounds (Shue 1980). Deontological arguments such as those developed by O'Neill and Shue have been generalized by philosophers working in development ethics, where the specific emphasis on hunger is often underplayed in favor of a more general discussion of poverty, deprivation, and subsistence needs.

Although the details of these arguments are worthy of attention in their own right, the point to stress in the present context is that Singer, Regan, O'Neill, and Shue can all be seen as following a philosophical approach in which key philosophical matters are decided on purely theoretical and abstract grounds. Subsequent to *this* philosophical debate at the theoretical level, the concepts, rules, and reasoning characteristic of the given theoretical approach are then applied to a particular case. Animal use and hunger are considered to be cases to which the theoretical apparatus of a deontological or consequentialist theory can be applied, but cases do not bear on the question of which theory to adopt except in so far as the application of a theory suggests a result that is viewed as so profoundly curious and inappropriate as to be found absurd. The use of cases to refute or challenge applied results brings up the problem of intuitions in ethics.

Practical Ethics and the Problems of Agriculture

The applied strategy in ethics was sharply criticized by philosophers such as Alasdair MacIntyre and Bernard Williams, both of whom suggested that the moral significance of outcomes, the basis of rights, and the application of concepts such as dignity, virtue, character, and vice are better understood and utilized when one does *not* presume that they can be configured in terms of general theory of morality or moral decision

making (MacIntyre 1984; Williams 1985). Broadly sketched, MacIntyre and Williams represent a tradition in ethics which presumes that moral concepts provide a basis for moral inquiry and moral discourse, for conversations, debates, and deliberations about what is right and what should be done. They hold that there is no general theory that explains how conversation, debate, and deliberation should determine ethical correctness for every conceivable circumstance. If that were the case, one could dispense with the conversation, the debate, and the deliberation and simply hand the problem over to an expert schooled in the details of moral theory. In contrast to those who develop detailed theories of ethics, this school of thought in practical ethics presumes that there is no substitute for actually engaging in an inquiry or moral discourse. They hold that one should not presume in advance some set of prior considerations about what kind of arguments or considerations will be deemed relevant to participants in a moral discourse or inquiry. Furthermore, advocates of this approach would argue that *having* these conversations, debates, and deliberations is precisely what philosophers have always done. In contrast to an approach that stresses the application of theory, this approach stresses the process or procedure for conducting an ethical inquiry.

Anyone advancing a point of view on a topic of relevance to agriculture and the food system might take themselves to be participating in a conversation with others who can be expected to have contrary opinions. Any collaborative exchange of views that is dedicated toward improving judgment or understanding the basis for action fulfills the most basic procedural requirement for ethical inquiry. An argument that appeals to concepts and principles associated with prominent ethical theories (such as utilitarianism or deontology) can be advanced as a reason or rationale pertinent to a given topic without this also implying an overarching commitment to that theory or to the belief that ethical questions must ultimately be settled by arriving at a comprehensive and internally consistent theoretical outlook. One can assert that something should be done because it promotes the greatest

good for the greatest number without also asserting that *every* ethical question can be settled by appeal to this utilitarian principle. Although a procedural approach is open to reasons that apply the familiar arguments of ethical theory, it does not presume that the philosophical debate among advocates of competing theories is particularly relevant to determining right action or conduct in a particular case.

Procedural approaches do require that argumentation be sincere. Participants in an ethical conversation, deliberation, or debate must be dedicated to actually getting the ethics right, as opposed to simply prevailing over other perspectives. This simple requirement has profound implications. Firstly, it presumes that the debate is truly open: There is a genuine question at stake as to what the outcome of an ethical deliberation should be. It also implies that participants in an ethical debate must take their own views to be fallible – potentially capable of being shown wrong, mistaken, or in some other way inadequate. It implies that perspectives should be viewed as subject to revision in light of comment or critique by others. All of these characteristics distinguish a genuine ethical inquiry from frequently encountered real-world settings where people offer arguments primarily to create difficulty or trouble for enemies or antagonists who have different interests or political objectives. Although persuasion is an important component of ethical inquiry, the fundamental spirit of ethical inquiry is violated when persuasion is attempted by people who are not also willing to be persuaded.

There is thus a structure or system of practice that shapes ethical discourse. To the extent that this system can be characterized in terms of rules, it might be said to govern ethical discourse. Such rules could be said to form a basis on which ethical discourse could be distinguished from other forms of thinking, symbolic practice, or communicative exchange. Some philosophers have dedicated themselves toward a general description of this structure and to stipulation of basic rules. In the twentieth century, both John Rawls and Jürgen Habermas undertook this task. Habermas's "discourse ethics" can be understood

as a theoretical project intended to place a general philosophical framework around constructive ethical disagreements, without also stipulating specific ethical principles that indicate the outcome of a debate in a particular case (Habermas 1990). Discourse ethics has been characterized as a form of ethical pragmatism by some authors writing in agricultural or environmental ethics (Thompson 2002; Norton 2005). However, philosophical debate over the nature or specifics of the rule structure for ethical discourse quickly becomes just another approach to ethical theory. What distinguishes *practical* application of discourse ethics in agricultural contexts is the practice of debating ethical issues directly, without prior development of an ethical theory whose tenets are being explicitly applied.

Procedural or discourse approaches are especially attractive in agricultural contexts because they encourage nonspecialists to participate directly in ethical debates. Anyone who is willing to offer reasons for a prescriptive claim can do ethics. But nonspecialists may be more willing to participate if they are given a rubric for guiding them toward key ethical questions or topics. Tom Beauchamp and James Childress developed a rubric for initiating ethical discussions or debates in medical bioethics that features four key principles that can be discussed and evaluated with respect to any proposed activity: autonomy, beneficence, non-maleficence, and justice (Beauchamp and Childress 1979). Consideration of autonomy will direct discussants to consider how the activity encourages or possibly violates the freedom or agency of stakeholders. Discussion of beneficence involves a consideration of the benefits of the activity, while non-maleficence is a restatement of Hippocrates (c.460 BCE–379 BCE) master principle for physicians: First, do no harm. Justice is a principle that encourages participants in an ethical discourse to consider how the benefits and burdens of a biomedical activity or policy are distributed across various types of social groups (e.g., by income, gender, racial, ethnic, or other relevant social grouping).

Ben Mepham introduced a similar heuristic device in agricultural ethics which he called

“the ethical matrix.” Mepham’s approach involved an $n \times n$ matrix in which principles much like autonomy and beneficence define one axis, while various types of agent or affected party defines the other (Mepham 2000) (► [Ethical Matrix and Agriculture](#)). This augments the discussion that might be generated by a Beauchamp and Childress rubric by directing discussants to consider how living human beings, unborn future generations, nonhuman animals, and finally entities such as species or ecosystems might be affected by an activity. The matrix thus is especially relevant for activities where it is important for an ethical discussion to consider environmental impacts of various kinds. Using the matrix approach does not necessarily imply that every cell defined by the grid will be ethically significant, only that discussants should at least ask themselves whether they might be. So, for example, a matrix with “autonomy,” “benefits and costs,” “social justice,” and “virtue” defining the rows and “living humans,” “future generations,” “animals,” and “ecosystems” defining the columns will generate 16 cells. Discussants might conclude that there is nothing interesting to say about the intersection of “autonomy” and “ecosystems,” though they might also find something very significant to discuss. The point is simply that the matrix provides an order to the discussion so that opportunities to introduce key topics can be raised.

Although it is clear that Beauchamp and Childress introduced their four principles purely as a heuristic device for helping nonspecialists think and discuss ethical issues in a somewhat less haphazard fashion than they otherwise might have, the four principles have acquired a theory-like status of their own. As a result, philosophers and other scholars of bioethics now discuss and debate “principlism” as if this rubric were itself intended to be a comprehensive ethical theory. There is thus a risk that any procedural, discourse, or matrix-style approach to practical ethics will be derailed into a theoretical discussion. In this connection it is important that both Beauchamp and Childress, on the one hand, and the developers of the ethical matrix, on the other, have understood these rubrics to be somewhat flexible

and have recognized that a rubric developed for one set of ethical questions (or one group of ethical discussants) might not be particularly useful or appropriate for another. For example, a discussion of genetic engineering applied to plants might well include “plant genomes” as a potentially affected type of entity, though it is less clear that plant genomes should be included in a discussion of alternatives for farm finance. Such flexibility is a strength of procedural or discourse approaches, but it does not lend itself to detailed theorization.

The Uniqueness of Agricultural Ethics

The last half century has witnessed the emergence of bioethics, environmental ethics, and business ethics as subfields in practical philosophy. Agricultural ethics has emerged more recently, along with numerous other contenders including research ethics, journalistic ethics, computer ethics, and climate ethics. There is an obvious sense in which each of these fields reflects a vague demarcation of a certain subject matter. But it is also obvious that each of these fields can be defined more and less broadly. Van Rensselaer Potter (1911–2001) coined the term “bioethics” in 1970 with a stated intention that it include environmental as well as biomedical themes (Potter 1971). Within little more than a decade, common practice limited the term to biomedical issues, and very few people interested in the ethical dimensions of environmental topics were calling themselves bioethicists. In his 1995 book *The Spirit of the Soil*, Paul Thompson characterized agricultural ethics as a subfield of environmental ethics, though he also argued that agricultural questions were being neglected by the community of environmental philosophers (Thompson 1995). Many scholars working in agricultural or food ethics today would not associate their activity with the subfield of environmental philosophy.

One reason for claiming that an emergent domain of practical ethics is unique or special is that the questions it asks are new or have little precedent in the 3,000-year history of

philosophical ethics. For example, Holmes Rolston argued that environmental ethics was unique because it raised questions about the moral standing or status of nonhuman and even nonliving entities such as wilderness, endangered species, or ecosystems (Rolston 1975). No one has yet argued that agricultural ethics is novel or unique in this specific sense. On the one hand, some of the key questions in agricultural ethics, such as the sustainability of a production system, do have precedents even in the ancient world. On the other hand, even this age-old question is unlikely to be considered by specialists in many fields of practical ethics – including environmental ethics. In short, although there do not appear to be philosophical reasons for regarding agricultural ethics as a unique type of inquiry, the current disciplinary practice within philosophy and the various areas of practical ethics ensures that important questions relating to agriculture will *not* receive scholarly attention in the absence of agricultural ethics being defined and recognized as a distinct subfield.

The discussion of Singer and O'Neill given above shows that it is possible to see agriculture as a particular area in which classical approaches to philosophical ethics (such as consequentialism or deontology) are applied. However, some topics in agricultural ethics challenge the applied model. Since the earliest years of the twentieth century, philosophers working in ethics have recognized that intuitions – deeply held and seemingly involuntary reactions that people have toward specific cases – may conflict deeply with what a given ethical theory might say about proper action in a particular case. One area where intuitions have been discussed in agricultural ethics concerns the use of genetic engineering to address problems in animal welfare by making deep changes in the organisms that provide animal products such as meat, milk, and eggs. From the 1980s, Bernard Rollin has written a series of articles arguing that while a sound ethic for animal use requires respect for an animals' *telos* – the genetically based drives that give rise to needs, interests, and typical behavior on a species by species basis – there would be nothing wrong with using genetic engineering to

change an animal's *telos* (Rollin 1995, 1998). But numerous philosophers have noted that the idea of using genetic engineering to create hens or pigs more tolerant of the crowded conditions on industrial livestock farms strikes most people as profoundly wrong (Bovenkirk and coauthors 2002; Fiester 2008). Even those who end up supporting such technology agree that there is something troubling about it, but because such a change would improve both aggregate and individual welfare, neither consequentialist nor deontological theory has an easy time explaining the source of this intuition.

There continue to be heated debates about the prevalence, meaning, and significance of intuitions among general ethicists, and the response to such intuitions often leads authors in agricultural ethics to evoke concepts from virtue theory – the third major tradition in ethical theory. Here, the claim is that actions such as genetic engineering to change animals (or even to improve crops) are morally suspect not so much because they harm or disrespect a moral subject, but because the profit motive or disregard for common decency shows that the agent in question (the genetic engineer) has a defect of moral character. The ethical problem is not occasioned by an outcome (consequentialism) or by the violation of a right (deontology) but by some flaw in the motivations, habits, temperament, or mentality of the agent (Sandler 2005). Thus, here again a problem in agricultural ethics can be seen to be resolved by appealing to some more general theory – again an *application* of ethical theory. It is thus likely that many scholars working in agricultural ethics will continue to see their work as a form of applied ethical theory.

It is also possible to find discussions of agricultural topics distributed throughout the history of philosophy. Thus, someone knowledgeable about English land tenure disputes will see echoes of them in John Locke's development of the social contract, and scholars of John Stuart Mill will discover that he wrote a number of significant essays on the English Corn Laws, governing agricultural trade. Treatises on agriculture were written by Virgil and Xenophon, and Hegel's lectures on the philosophy of history begin with

extended (if also somewhat imaginary) discussions of food production in Africa, Asia, and the Peloponnesian Peninsula. More recently, Michel Foucault weaves a discussion of Hesiod's discussion of agriculture into his analysis of Aristotle's formulation of "the will to know." As such, there is a wealth of material in the history of philosophy that might be included under the heading of agricultural ethics. To date, relatively few practitioners of contemporary agricultural ethics have seen fit to draw upon these historical precedents.

Summary

The definition or characterization of agricultural ethics is itself a metaphilosophical problem: One's answer to it will depend on what one takes ethics and/or philosophy to be. Discussion and debate among people holding different views or perspectives on the nature of ethics rapidly becomes a philosophical debate unto itself. This essay has attempted to sketch some of the most prominent threads that might characterize such a debate. Certainly some philosophers writing on agricultural topics take themselves to be applying well-recognized approaches in ethical theory. However, it is noteworthy that many of the most frequent contributors of scholarly work in agricultural ethics seem to work from a more pragmatic or procedural orientation to their field. In either case, direct engagement with the metaphilosophical questions that arise in attempting to define or theoretically circumscribe the field of agricultural ethics are quite rare. This is in distinct contrast to environmental philosophy, where many have noted that the field does not seem able to move beyond highly theoretical debates about the nature of intrinsic vs. instrumental valuation in order to take up the ethical dimension of substantive environmental issues.

In conclusion, the field of agricultural ethics is perhaps best defined ostensively, that is, by indicating the work of its practitioners. In that, we return to the observation with which this essay began. It is the entire *Encyclopedia of Food and Agricultural Ethics* that best delimits and indicates the scope and nature of the field. Observing

and analyzing the diverse activities of practitioners will yield the most perceptive and accurate account of what agricultural ethics is.

Cross-References

► [Ethical Matrix and Agriculture](#)

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Agricultural Science and Ethics

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Synonyms

Animal welfare; Ethics of nature; Sustainability; Values in science

Introduction

Humans live in constant interaction with nature. That is part and parcel of being a biological creature on this planet. On one hand, humans exploit the available resources to survive, and at the same time, humans are deeply dependent on the continued capacity of nature to sustain their lives and the lives of their children and future generations. But something has changed over the past 50 years: Never before in human history have so many animal and plant species been made extinct so fast – in the last few hundred years about 1,000 times as much as in the planet's history – and 10–30 % of mammal, bird, and amphibian species are currently threatened with extinction; freshwater ecosystems are particularly at risk.

Never before has humankind been so destructive and exploitative in relation to ecosystems and vital resources as now. Just as an example, in the last decades of the twentieth century, about 20 % of the world's coral reefs and 35 % of the mangrove areas were lost (Millennium Ecosystem Assessment 2005).

In the following, the development of agricultural science will be sketched out and the role of ethics in agricultural science will be discussed. Then different views of nature that have shaped agriculture and the role of science in agriculture will be discussed by analyzing some of the presumptions behind the concept of ecosystem services and the way animals are viewed. Finally, the concepts of animal welfare and sustainability will be explored to show how they make vivid the connection between agricultural science and ethics.

The Development of Agricultural Science

Although the first traces of agricultural research can be traced back to the thirteenth and fourteenth century, organized agricultural sciences emerged from the mid-1800s, primarily with increased mechanization and organization of agricultural production and the possibilities to make agriculture “rational” and use different technological inventions to increase productivity in agriculture and food production. In the late eighteenth century, chemical compositions of soil and systematic measures of the growth conditions of different crops started the chemical intervention in farming, and hence the development of agronomy. The introduction of chemical and genetic control increased in late 1800s and early 1900s. The development of scientific approaches to agricultural development can be seen as a contrast to the previous centuries' practical development of farming, where knowledge and skills were passed on between generations on local context-specific levels. However, more systematic collection of information from farmers and dissemination of “best practice” in agricultural schools or published texts, e.g., initiated by progressive

landowners, was also increasingly practiced from seventeenth to eighteenth century and improved production or knowledge in relation to agricultural challenges (Jones and Garforth 1997).

A boom in the development of agricultural production happened in the Northwestern world in the post-Second World War era, where mechanization of agriculture increased dramatically and the Western European agenda was to ensure food security for the population, as increased welfare was seen as one way to avoid wars and conflicts in the future. In this phase, agricultural research stations and institutions grew and were viewed as necessary instruments to an increased production through a “rational growth agenda.” In the following decades, subsidized farming in parts of Europe and North America became increasingly specialized and industrialized and continued to increase in productivity, and international trade grew and larger. In other parts of the world, e.g., India and Mexico, so-called Green Revolutions of agriculture involving hybrid seeds, mineral fertilizer, and pesticide use introduced mainly at the larger farms resulted in major increases in agricultural productivity and at the same time had severe long-term impacts on soil degradation and environment (Cullather 2010). In the past decades, agricultural and food systems have been influenced by an enormous growth of transnational food corporations, liberalization of international food trade and foreign direct investments, and increased globalization of the diet (Hawkes et al. 2009). The food and agricultural industry has supported research which influences this development (Lesser et al. 2007), both through establishment of own research units as well as funding to universities and other research institutions through various channels. Out of this, at least two major trends in agricultural research are developed: (1) research which is more or less guided and controlled by large private companies like Monsanto (Robin 2010) that seeks to develop products such as agrochemicals and patented seeds to agricultural and food systems which meet the demand for huge amounts of cheap food products and (2) research which focuses on critical issues in relation to the industrialized

agriculture and food systems and have the potential to inspire changes of farming practices toward a more environmentally and socially responsible agricultural sector. This is, for example, research in climate change, biodiversity, social aspects of farming, and governance of food chains that has led to a value-based critique of, e.g., growing reliance on experts and increased vulnerability of farmers, science-techno-based farming, intellectual property rights, and labor conditions (Beus and Dunlap 2010; Thompson and Stout 1991).

The Role of Ethics in Agricultural Science

The understanding of agricultural science developed above makes it obvious that there is a strong link between agricultural science and ethics, since the goals of agriculture and the choice of strategies of how to obtain them are not themselves only scientific questions but also questions that require answers based on value. These are questions as what kind of foods to produce (animal products or vegetarian), which methods to use (organic, conventional, extensive, intensive, biodynamic), what consequences of human action to accept (landscape, animal welfare, wild life, environment), and what conditions to provide for farmers, farm workers, and all others working on the land and in the food producing sector (health, social status, rights). These questions can only be answered through ethical considerations and reflections and not through natural sciences. The ethical discussions include a discussion of who can legitimately answer these questions. Or, in other words, who should govern the land? Is it a political task, should it be market driven, should it be through participation from civil society actors, or should it be left to the market and thus be decided through the often silent negotiation between producers and consumers? In the latter scenario, there is a risk that decisions are shaped in the space between a commercialized market and individual consumers left to fight for their values with their wallets. This is not unproblematic as the outcome of this negotiation is also of obvious interest for

those who are not part of it and have no voice: the poor, future generations, animals, plants, and ecosystems.

Such questions reach into the area of political and societal structures and are thus often not seen as part of agricultural sciences, despite the fact that the structure and governance of agriculture itself strongly influence the way in which we ask scientific questions, and vice versa. This is not surprising, since the perceptions and goals of scientists are just as full of value assumptions as the goals of politicians. Objectivity in science does not cover the goals of science but only the methodologies, where, e.g., data can be described in terms of repeatability and reliability, but the choice of how and which data to collect, focus on, and analyze is still a choice of each researcher or research team and should be communicated as such. Further along these tracks lie the questions of how risks are understood and communicated and how the interpretation of scientific uncertainty influences the way that scientific results are presented (Webster 2003).

Describing the relationship between agricultural science and ethics entails recognizing the ways in which values penetrate agricultural sciences and determine goals and methodologies. The classic notion of an objective science that develops technologies, which the civil society then choose from, is replaced with an understanding where science is seen as embedded within the social framework through which complicated interactions shape the more-than-human lifeworld. Thus, from a moral and social point of view, agricultural scientists have an obligation to be transparent about the assumptions underlying their work as their results and advice are expressions not only of knowledge but also of values.

Agricultural science can enhance understanding of important aspects of the soil and ecosystems on which humans are dependent for food and – to a growing extent – energy. Agricultural sciences participate in collecting, systematizing, and transforming practical knowledge and skills of farmers and agricultural professionals into more time- and/or cost-efficient practices and technologies and in inventing new technologies and machines which can increase efficiency in

different ways (Tilman et al. 2002). As long as this is not connected to funds for inventing tools or patents that only benefit few, or distort power relationships etc., and it is clear and transparent, then it is quite simply a generally accepted feature of scientific approaches.

It becomes problematic, however, when there is a move from *methodological reductionism* and into *ontological reductionism*. Methodological reduction is a necessary prerequisite of science, by which certain aspects of the phenomena being examined are excluded/deliberately ignored to achieve objectivity or at least intersubjectivity in a group or community of science. Ontological reductionism occurs when the results from a specific scientific inquiry are viewed as the only valid knowledge about a given phenomena, no matter of the context. The context in a complex world (e.g., a farm) can be very different – and hence influence and interact in a different way – from the quite controlled environment in which the phenomenon was studied. In such a case, the world itself is reduced and every part is seen as a simple sum of smaller parts, which can be studied independent of their context (Fang 2011). This could, for example, be a study of how certain plants grow and thrive being provided with different levels of a certain type of nutrient under controlled conditions in a laboratory. The results of these studies are valid under similar conditions, but plants of the same species and variety may turn out completely different in relation to the same type of nutrient under different on-farm conditions, where they are not only influenced by these studied nutrients but also by, e.g., temperature, seasons, other trees, plants, and management practices which were not present in the laboratory.

The same move can be seen within agricultural science when the basic ethical relationship between humans and nature is denied on the basis of the results of an agricultural science that from the outset looks away from this relationship to enable a scientific inquiry. How agricultural science is done both from a teleological and methodological perspective is thus very dependent upon the view of nature presupposed in the scientific work.

Views of Nature

Humans have lived with, in, and from nature for thousands of years and increasingly transformed what formerly was “living on the mercy of nature” into “taking control and forming agricultural systems.” This has happened in different ways: In some cases, it has been based on a rather interaction-based view and practical approach, such as forming systems which build on or mimic the mechanisms of natural ecosystems, e.g., permaculture and certain agroforestry systems. In other cases, it has been based on a more control-based view, where humans aim at getting the full control over land, plants, animals, and agriculture and use the resources around them. These different approaches are built on different views and values related to “what nature is” and how the relationship between humans and nature should be seen.

A dichotomy between “nature” and “culture” is often taken as granted. However, “nature” and “culture” are mixed into new forms as new hybrids are produced in agriculture and agricultural sciences. For example, in the meeting between the farming landscape and nature, “nature” is guided and restricted by agricultural activities. Yet, the existence of a “nature” which can be distinguished from “culture” is often emphasized.

Within environmental philosophy, a distinction between views that are mainly anthropocentric, pathocentric, biocentric, and ecocentric has been developed – the latter also sometimes religiously inspired from especially animistic traditions (Abram 1996; Griffiths 2006). Each viewpoint describes the kind of entities that are seen as members of the ethical community (Krebs 1999). These basic views influence the ways farmed landscapes and animals are perceived and shape the understanding of which responsibilities humans have and how to act and interact in relation to nature. “Nature” is a complex concept with many layers of meaning. Some of the qualities linked to nature are, for example, described: (a) wilderness, the quality of natural processes not disturbed by human interference including pollution; (b) continuity, e.g., that

a habitat is allowed to exist over long time; (c) authenticity, meaning that “nature” is not constructed or planned; and (d) originality, understood as nature with native species and habitats (Tybirk et al. 2004). Different basic views on nature can be described, for example, a “naturalist view” (where all four described dimensions are present and humans should protect natural areas and manage seminatural areas very carefully); an “ecologist view” in which humankind can interact, structure, and “enhance” natural processes also in relation to agricultural activities; and a “cultivist view,” where nature is only found outside farmed land areas.

The concept of ecosystem services vividly illustrates how farmed and nonfarmed land is viewed within an anthropocentric framework. If humans do not interact with or “use the services” of nature, then it is basically without interest, as it is of no “service.” The microbiological life in the soil can be viewed as such an ecosystem service: Without this life – which consists of “natural microorganisms” – cultivated plants cannot grow well. The goal from an anthropocentric point of view therefore becomes to control and preferably improve the microbiological life in the soil to enhance the ecosystem services that it provides. This can be seen as a contrast to the deep ecology philosophy, which insists on the inherent value and worth of every living organism in their own right.

Pollination is another example of an ecosystem service, on which agriculture is deeply dependent – about 70 % of the global plant production relies on pollination, so if the bees die, food production will be gravely challenged. Scaringly enough this has been the case since the beginning of this century. The phenomena – labeled as colony collapse disorder (CCD) – was first reported in the USA and then spread to Europe. The reasons behind the vanishing of bees are still not entirely understood, but human actions, especially the use of pesticides and herbicides, are suspected as major factors (Suryanarayanan and Kleinman 2013). One response to the increasing threat to bees has been a suggestion to invent “robot bees” (Anonymous 2012; Steadman 2012). Such an

attempt to “repair” a problem that is most likely created by human action clearly comes from the anthropocentric and cultivist side of the value landscape. The role of science (agricultural, biological, and engineer sciences) is seen as inventing such robot bees, and the role of the industry is to market something which before was an “ecosystem service.” From a more ecocentric view on agricultural sciences, solutions would aim at creating agricultural systems which respect animals and the living communities that they are embedded in and help create conditions, allowing and supporting the pollinators to work and live as part of an organically sustainable system.

Views of Animals

Through domestication and breeding, humans have for thousands of years increasingly shaped animals to more efficiently produce meat and animal products. This development has escalated since the intensification of animal production in the 1950s and raises a range of ethical issues. In intensive animal production systems, animals have been bred to grow faster and produce more, leading to a range of production-based welfare problems (Gamborg and Sandøe 2005). Discussions of sustainability within animal breeding clearly show that the narrow focus of production efficiency has been a mistake – although the long-term goal of breeding is still to ensure the economic sustainability of the production. Thus, economic concerns and not environmental or welfare concerns rule the day. Only to the extent that environmental considerations or animal welfare concerns are compatible with this overall goal, a growing interest in the environment or welfare of the animals can be expected.

Besides breeding the animals to fit the production facilities better, the animals are also “shaped” by more direct methods: They are cut and shaped so as to allow farmers to keep them under very restrictive conditions – cows are dehorned, pigs have their teeth, tail and testicles are cut, and poultry have their beaks trimmed. All this is done to ameliorate the physical damage

which they can make on themselves and each other – often as a result of the stress caused by the inability to perform their species-specific behavior: The animals still have basic needs such as need for a certain space around them, for territories, for foraging, for a hierarchy, and for sexuality, just to mention some. Agricultural animal research has to a large degree been directed toward developing animals that fit into predefined production systems and at the same time yield and grow at a maximum rate. “Farms” have turned into production facilities and the understanding of the animals changed so that they are seen as production units and described in terms of kilograms rather than living individuals (Anneberg 2013). This process has been most visible within the poultry, egg, and swine industry, but the production of milk and beef is following the same tracks.

Farm animals, even though they have been selected and bred during many generations to fit as smoothly into the production systems as possible, still have species-specific behaviors that are not possible to perform in the intensive production systems. They compensate by showing stereotypical behavior. An example is a sow’s needs to build a nest before farrowing: She shows this behavior even when completely restricted between iron bars on concrete floor, where she does not have the physical material to build this nest. The compromises between the needs of the animals and the degree to which these are met in production systems are thus partly guided and informed scientifically through a wealth of studies on animal diseases, production, behavior, and other things. Agricultural sciences have participated in the development of the concept of animal welfare and have developed a number of different schools and definitions of animal welfare (Haynes 2008). This science can be characterized as a mandated science, meaning science with the purpose of informing political debates and decision making (Fraser 2008). Scientific studies have also participated in the development of so-called animal welfare assessments, which is part of the development of the current animal production systems. The concept of animal welfare is thereby shaped, used, and interpreted both

by a huge number of different actors in the agricultural industry, as marketing arguments for products, and by authorities and governments to formulate detailed regulations on animal production systems and in the public debate (Anneberg 2013).

Animal Welfare as an Example of an Agricultural Scientific Field

The concept “animal welfare” can be viewed as an example of a scientific approach to handle the increased industrialization of animal production and the increased concerns about this production and the well-being of the animals. “Justice” to animals was discussed already back in the ancient Greece, and animals have been “subjects for protection” in legislation for a couple of centuries, mostly in terms of “unnecessary cruelty to animals,” e.g., beating horses. However, the type of suffering linked to restrictions in not meeting the animals’ natural needs and allowing them natural behavior, access to space, and systematic mutilations such as beak trimming, tail docking, and dehorning has become an issue both in the public debate and in science from the 1950s and onward. One of the first books on the effects on animals of intensive farming that lit the spark to the debate was *Animal Machines: The New Factory Farming Industry* by Ruth Harrison in 1964 (Harrison, 1964), which among other things led to the so-called Brambell Report, on which some of the animal welfare principles were built.

The concept of “animal welfare” is an interesting example of a mandated science, where scientific factorial knowledge, e.g., about animal behavior or the presence of disease, is constantly intertwined with ethical considerations and understandings of “what is good or bad for the animals.” This is obviously perceived differently in different historic and cultural contexts.

Within the “animal welfare science,” different animal welfare assessment systems are developed. The choice of focus and detailed parameters in such assessment systems are made with scientific studies as background. This scientific knowledge can be “delivered” to inform and give

arguments for ethical considerations and decisions of what is acceptable for animal farming and to create certain norms within the context in which the systems are being used. However, this does not remove the choices of the scientists: These choices are inevitably taken partly on background of their perceptions of what animal welfare is. Studies have been made to develop “animal welfare assessment” in caged hens systems focusing on advantages and disadvantages of different cage systems, where some researchers will study feather coats and egg production and relate “animal welfare” to such parameters and other actors will claim that it is not possible to talk about “animal welfare” in a system which restricts natural behavior and ask whether it would not make more sense from an animal welfare point of view to question whether caged systems are “fair” to living animals at all. Here the question also becomes what the relationship is between the fields of “animal welfare” and “animal ethics” (Yeates et al. 2011).

The welfare of farm animals must be understood as both a normative ethical concept and a scientific field of inquiry. It is a clear example of a field where the methodological choices made before the research can be done are strongly dependent on the ethical values of the researcher (Fraser 2008). Some have claimed that “animal welfare” can be seen as a social technology, which participate in a basic “scientific legitimation” of industrialized farming systems, and that a focus on “animal welfare” among the involved professionals can help create trust among non-professionals (consumers/citizens) that “animal welfare is taken care of” (Anneberg 2013).

Sustainability

The concept of “sustainability” has been more or less intuitively understood and practiced during centuries by people who were living closely in and dependent from the surrounding nature, as “the responsibility to act so that the seventh generation from now could still sustain itself.” The concept of “sustainability” as used today arose in the forestry industry more than 200 years ago and

has since grown almost organically into a multifaceted and complex concept (Wiersum 1995). In 1987 the United Nations placed the concept in the middle of discussions on environmental management through the Brundtland Report. Here sustainability is understood as "...a development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations 1987).

Since then the concept of sustainability has been developed and discussed, scientifically and in societal debates as a response to the challenge of feeding an increasing population of humans in an ecologically responsible and just way at the same time significantly reducing our short- and long-term environmental impact. Clearly, this debate is closely interlinked with how food is produced and distributed. To an increasing degree, this happens in the light of the changing climate that is both a threat to current production – and to a large extent a result of it (Steinfeld et al. 2006).

In most currently used definitions of sustainability, at least three pillars are acknowledged as constituting the concept of sustainability: an economical aspect, an ecological (environmental) aspect, and a social aspect. Recently, a fourth distinct pillar has been included by some authors, namely, the institutional aspect. The understanding of the concept – including the pillars and their interconnectedness – is nevertheless hugely disputed because different actors and organizations can define, understand, and use it in different ways and place weight on the pillars differently and in accordance with specific interests (Valentin and Spangenberg 2000).

The whole issue of designing agricultural and food systems to be sustainable is extremely complex and involves many players – in the end everybody, because everyone eats food, and all humans can be considered citizens. Agricultural sciences typically focus on the production aspects, based on the argument that there is a need to feed nine billion people in few decades. This has, however, been criticized as too narrow a view of the issue as it seemingly ignores that food production per capita has never been higher

and issues of distribution, the complex picture of food trade systems, food waste, ethical considerations related to industrialized agriculture, land rights, and a steadily increasing consumption of animal products are not seen as part of the context of the problem (Mephram 1996). What sustainability is and how to balance the emphasis on the four pillars in a given context thus need to be decided on an ethical and political basis, before agricultural science can begin to provide answers. Science is a tool, but before using it, it needs to be decided what it is to be used for.

Summary

Discussing sustainability and animal welfare within the context of agricultural science entails a lot of ethical reflection as many of the assumptions about what the concepts cover, how they should be scientifically examined, and what goals they should be directed against are based on values. Agricultural science is, as any other science, performed in a social and cultural context and therefore embedded in values. Agricultural science is a very important factor in the current situation where a growing population, increased pressure on resources, climate change, genetically modified plants for human consumption, production of plant-based biofuels, and further intensification of animal production with growing welfare problems as a likely result challenge societies. But it is important to realize that the way these issues are approached and the solutions that are suggested by scientists are part not only of a scientific inquiry but also a societal and ethical discussion on how human beings should relate to animals and the rest of nature.

Cross-References

- ▶ [Agricultural Sciences and Ethical Controversies of Biofuels](#)
- ▶ [Farmer-Scientist Knowledge Exchange](#)
- ▶ [Industrial Food Animal Production Ethics](#)
- ▶ [Sustainability of Food Production and Consumption](#)

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Agricultural Sciences and Ethical Controversies of Biofuels

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Synonyms

Bioenergy; Biomass; Energy crops; Food versus fuel; Land use change

Introduction

The non-food sector has always been an important part of agriculture providing fuel, fiber,

building materials, and medicine among other resources. Agricultural sciences have focused on the non-food sector in recent years as a means for societies to replace fossil fuels with more sustainable alternatives. This entry will give a brief history of agricultural sciences and non-food production, highlighting the recent increased production of biofuels and the “bio-based economy.” It will focus on the use of agricultural biomass (any organic matter that is living or was once living) as a transport fuel, what is commonly referred to as biofuels. These will be considered under the headings of energy crops and crop residues. The term “agricultural sciences” is used to refer to the application of natural, social, and economic sciences to the further development and understanding of agriculture. Thus, natural, social, and economic sciences have been involved in attempts to develop non-food agricultural products to address societal needs and in highlighting and analyzing controversies, developments, and trends within this sector.

Biofuels have been a particularly controversial area from the mid-2000 that has focused attention on the ethical aspects of non-food production. They incurred significant environmental impacts and were seen to compete with food production. Agricultural research on “first-generation” food-based biofuel was within what de Lattre-Gasquet et al. call the “productivist ethos” of increasing production and stabilizing prices (2010, p. 309). Science then also played a role in questioning the environmental and social credentials of biofuels. These biofuels not only faced issues of inequality and environmental destruction in line with other conventional, industrial-agricultural production of food but also undermined the productivist ethos of producing more food, by being seen to divert food from the food market to the fuel market (Thompson 2008a).

The increased demand for non-food agricultural products is seen by many as a challenge, given previous controversies around biofuels and ever increasing resource constraints. It is also seen as an opportunity for further development of agriculture, with a move away from using food

crops towards non-food crops and residues and coproducts. Some view this opportunity as calling for agricultural scientific research within an industrial, intensive model that promotes efficiency. Others see it as an opportunity to tackle environmental issues and inequality by moving agriculture towards an agroecological model.

History of Agricultural Sciences and Non-food Crops and the Growth of the Bio-based Economy

Humans have been dependent on agriculture to supply non-food products for millennia. In pre-historic times people used plants and animals for fiber; obtained fuel from wood, vegetable oils, and animal fats; and obtained medicine from a variety of plants (Fuller et al. 1996). Agricultural technology changed little between 1000 BC and 1500 AD, although certain non-food crops such as tobacco were introduced to the west (Fuller et al. 1996). The onset of the industrial revolution in the nineteenth century in the global north saw an expansion in scientific development within agriculture and the potential to produce far more non-food goods. This can be seen in the early twentieth century when Henry Ford produced his new V-8 car featuring plastic components and paint made from soybeans. Plant fuels could be used to power vehicles; the diesel engine unveiled by Rudolf Diesel in 1900 ran on peanut oil. The industrial revolution also meant the availability of cheap and abundant fossil fuels and agricultural products often found it difficult to compete. Fossil fuels became the dominant supplier of transport fuels.

The 1973/1974 oil crisis focused attention on fossil fuel dependence and created some renewed interest in biofuels. Brazil was one of the earliest countries to respond to this concern and establish a national biofuel policy producing bioethanol from sugarcane. During the first decade of the twenty-first century, many other countries, including the USA and EU countries, followed suit and developed biofuel targets. There was much initial optimism about biofuel’s potential,

with many seeing them as a way science and technology could be used to address the issues of climate change mitigation, energy security and independence, and rural development (Landeweerd et al. 2009). Biomass was initially seen as a carbon neutral alternative to fossil fuels because it stores carbon as it grows, which is then released into the atmosphere when the biomass is burned; it can be grown in the country of use and also can provide an additional source of income for farmers. Government subsidies and incentives created a market for biofuels and production increased significantly during the 2000s. The USA and Brazil are currently the largest producers of bioethanol with the majority of biodiesel produced in the EU, Malaysia, and Indonesia. Biofuels from food crops currently make up a small proportion of transport fuels, for example, among the EU 27 2.5 % of transport fuels are biofuels (Nuffield Council on Bioethics 2011).

The increased production of fuel from agricultural produce can be seen in the wider context of replacing fossil fuels with “greener” agricultural produce, what has been termed the “bio-based economy.” Work is underway within the agricultural sciences to develop further agricultural applications in energy, chemicals, and advanced materials from food and non-food crops for industries such as construction and manufacturing (FAO 2012). These are promoted as having lower greenhouse gas emissions and higher energy efficiency than fossil fuels, as well as being biodegradable. The concept of the oil refinery is transferred to agriculture, with the “biorefinery” proposed as a way to extract every ounce of value from agricultural produce.

The above story is not equally true for all parts of the world, however, as many areas are still awaiting or in the midst of an industrial revolution. 90 % of the biomass for energy used globally consists of charcoal, dung, residues, and waste combustion in the global South in conditions of energy poverty (Schubert et al. 2008). Countries in the global South do play a role in the global non-food sector; however, they currently dominate the production of natural fibers from jute, sisal, and hemp (FAO 2012).

Energy Crops

Biofuels from Food Crops

This section will focus on energy crops used as biofuels in order to illustrate some of the ethical issues raised by non-food crop production and the role of agricultural sciences. The agricultural science these crops are based on is not new; the technologies have long been in existence: starch from crops such as sugarcane, wheat, or corn is fermented into ethanol and used instead of petrol, or oil crops such as rapeseed oil, palm oil, and vegetable are used in diesel engines with only minor alterations. Research and development (R&D) into energy crops was undertaken within universities and private companies, incentivized by the need to meet government targets. Multinational agribusiness, biotechnology, car manufacturing, and dedicated biofuel companies have undertaken work on biofuels, as well as large oil companies such as Shell and BP.

Some contend that the ethos behind the agricultural science was also not new. De Lattre-Gasquet et al. (2010) state that in France the ethos was that of productivism based on the post-war time principles of increasing production, stabilizing prices, and ensuring supply. Thompson (2008b) also states that in the USA corn-based ethanol was developed within the industrial, productivist model of agriculture which emphasizes efficiency. This story is similar in other countries, with the majority of Brazilian sugarcane ethanol being produced within an industrial model of agriculture and government incentives in many African countries promoting large-scale production systems (Amigun et al. 2011).

The initial optimism over biofuels and the prospects of a win-win-win outcome gave way to controversy and criticism as it was claimed that biofuels competed with food production, were very environmentally damaging, and were produced in conditions of social inequality and injustice.

Ethical Issues: Food Versus Fuel

2007 and 2008 saw food riots in numerous countries because of a sudden increase in food prices.

Many commentators blamed this price spike partly or wholly on the diversion of staple food crops such as corn and wheat from the food market to the biofuel market, what has been dubbed the “food versus fuel” controversy. In October 2007 Jean Ziegler the UN special rapporteur on the right to food stated, “It is a crime against humanity to divert arable land to the production of crops which are then burned for fuel” (BBC 2007). Many NGOs made biofuel an important campaigning issue and linked up with food companies to press governments for the removal of biofuel targets. The issue became increasingly controversial with the right to food of the poorest contrasted with the desire of the rich to drive their cars and biofuels generally framed as an unethical, unacceptable technology (Nuffield Council on Bioethics 2011).

The role biofuels played in raising food prices has been disputed. There were many causes attributed to the price spike such as speculation on agricultural markets, poor harvests, low grain stocks, and rising fossil fuel prices, with different estimates of the exact responsibility of biofuels (FAO 2008). Some maintain that the food versus fuel controversy oversimplifies the debate, contending that the food crisis had been building for decades, with vulnerable countries becoming net food importers and the problem is not only one of supply and demand but also of a political-economic problem of access to food (Thompson 2008a).

Others have taken a different view of the issue and frame biofuels as a potential opportunity for agriculture, and even food production, in the global South (FAO 2008). They state that biofuels could prompt the research and investment needed to develop struggling agricultural markets. The global South could leapfrog the “dirty” fossil fuel-based technologies used in the global North and concentrate on bio-based alternatives. Ewing and Msangi (2009) state that there are numerous examples of small-scale bioenergy production in developing countries to benefit the poorest. They state, however, that barriers exist to their further development such as access to capital, technology, and secure land tenure. They also state that the benefits of

large-scale developments can bypass the small-scale producers who make up the majority in these countries.

Environmental Controversies

While biofuels were initially promoted as a scientific solution to environmental issues, science also played a role in highlighting biofuel’s hidden environmental impacts. Since current biofuels are made from food crops, they have followed the same industrial trajectory as other food crops produced in the global North (Thompson 2008b). Industrial production requires large amount of inputs in the form of fossil fuels, pesticides, herbicides, and fertilizer which result in local environmental impacts. The large embedded fossil fuel footprint has meant the resulting energy produced: the balance of energy input to energy output achieved can be minimal, depending on the crop in question (FAO 2008). Embedded carbon emissions and nitrogen oxide emissions from fertilizer use have also significantly reduced biofuel’s greenhouse gas savings.

It has also been reported that some biofuel crops are grown on deforested land, such as palm oil production in Malaysia, resulting in more biodiversity loss and carbon emissions – a problem termed direct land use change (dLUC) (Nuffield Council on Bioethics 2011). A number of studies also emerged modeling the problem of what is called “indirect land use change” (iLUC). This is the phenomenon whereby biofuel production replaces food production, causing land with high biodiversity or carbon stocks elsewhere in the world to be converted to food production to make up the shortfall. If the resulting carbon emissions from land conversion are attributed to biofuels, then total greenhouse gas emissions can be far *higher* than those of fossil fuels.

Doornbosch and Steenblik (2007) state that the sheer scale of agricultural resources involved in production means there are “permanent physical limits to the extent to which biofuels can replace fossil fuels” (p. 5).

Social Justice

Biofuels have also been linked to numerous human rights violations. Reports of slave-like

conditions for workers in Brazil have come to light and reports of people dying from overwork (Nuffield Council on Bioethics 2011). There is also evidence of the forced eviction of indigenous people from their lands to make way for biofuel production as well as fears about large tracts of land being legally bought for biofuel production, making it then unavailable for local food production in the global South – so-called land grabbing (Franco et al. 2010).

Biofuels from Non-food Crops

While biofuels were initially proposed as an agricultural technology that could solve several issues simultaneously, they have proven to be very controversial. There have been different responses to these controversies. Many NGOs see the technology and policies that promote it as too problematic calling for biofuel targets to be ended. Others see it as an opportunity for agricultural sciences to address these issues through innovation within the university-industrial complex.

One common way forward suggested for biofuels is the production of “lignocellulosic” non-food crops such as grasses like miscanthus and switchgrass and trees such as willow and poplar. These could produce what are called “second-generation biofuels” and also be used in stationary energy applications. The sugar in non-food biomass is more difficult to access than in food biomass, making their conversion into ethanol more problematic. There are a small number of commercial applications of this technology. Other non-food crops have also been proposed, such as the oil-producing plant *jatropha* which has been grown, with limited success thus far, in the global South.

There are many perceived benefits to these feedstocks that some claim will mitigate the negative effects of first-generation biofuels. They would not divert food from the food market. In contrast to food crops, all of the plant can be used for energy resulting in higher yields of biomass/hectare. Trees are perennial and so lock more carbon into the soil than annuals; in some cases willow has been used to rehabilitate depleted soils. They are also considered to be more favorable for biodiversity and require fewer inputs.

Because crops such as willow are currently used a little in energy production, some see this as an exciting and promising area for agricultural sciences. It is claimed the plants can potentially be bred to achieve higher yields and increase their suitability to certain habitats and uses, using techniques such as genetic modification. Many have also claimed that these crops could be grown on “marginal lands” unsuitable for food production (Nuffield Council on Bioethics 2011).

There is also agricultural research underway on alternative models of bioenergy production within what might be called an agroecological framework. These also emphasize the possibility of obtaining different types of products from the land and moving towards a bio-based economy but eschew monocultural agri-industrial production. Instead the multifunctionality of a piece of land or a landscape is emphasized, and the possibility of synergies between food, animal, energy, and other types of production is explored within a low-input, often small-scale model (Harden et al. 2013). For instance, agroforestry involves allowing chickens and pigs to circulate in a willow plantation grown for bioenergy production.

Potential Ethical Issues

Work from the social sciences has highlighted potential ethical issues raised by the development of these technologies, however. Gamborg et al. (2012) point out that it is the use of *land* rather than food crops that is the ethically important issue because the use of any land for energy crops excludes the possibility of growing food on that land. Production on marginal land has often proved to result in marginal yields, and indeed the term can serve to “marginalize” the people who previously used that land and downplay their claims to it (Franco et al. 2010).

De Lattre-Gasquet et al. (2010) state that research in agricultural sciences is now responding to the issue of agricultural scarcity. This could be seen to be true of the move to lower input non-food crops. They state that the dominant ethos behind agricultural science research is currently technological and economic: “Whether they like it or not, public research institutions are being propelled to the crossroads of science and markets as a result of

unprecedented hybridisation of scientific and economic rationality which leads stalwartly into a knowledge economy.” (p. 310). Thompson (2008a) states that future biofuels may continue to be viewed as a technology that is in opposition to nature and will meet resistance from the same groups who oppose industrial agriculture. Levidow and Paul view non-food energy crops as promoting the same model of industrial agriculture as first generation: “Current R&D priorities for GM crops are designed to sustain agri-industrial monoculture systems, operating economies of scale and producing uniform products for industrial processing. R&D specifically for bioenergy aims to make crops more flexible, efficient sources of energy as a global commodity.” (2008, p. 28). Thus, large-scale production of non-food energy crops may also prove controversial.

Agricultural Coproducts

Agricultural “coproducts,” “residues,” or “wastes” are seen as another potential feedstock for second-generation biofuel production that would overcome the controversies faced by food-based biofuels (Nuffield Council on Bioethics 2011). Residues such as straw, sugarcane bagasse, and palm kernels are also currently used in the global North and South for stationary energy production. These are by-products of food production and so will not take up land of their own, as some see it, overcoming the “food versus fuel” controversy and requiring no additional inputs. Research on use of residues and coproducts could be seen to be within industrial or agroecological models, depending on the scale and other specifics. An example of industrial production is use of grain to produce animal feed and fuel within a biorefinery. The protein for the grain is extracted for feed, while the carbohydrates are used in biofuel production. Animal manure is another source for energy production: dung is burned currently in the global South for energy and can also be used in other high-tech applications such as anaerobic digestion that produce biogas.

Potential Ethical Issues

Use of coproducts presents their own ethical issues, however. Gomiero et al. (2009) question whether or not there is such a thing as “waste” in nature. Returning residues and dung to soils is essential to soil health, increasing carbon and nutrient content. Removal of these residues can result in soil degradation and erosion. The quantity of crop residues that can be removed from soil without depleting the soil fertility is a complex question within agricultural sciences as it is dependent on many factors including the type of soil and the use of the land, making generalizations difficult. The application of post-combustion ash to the soil can return some of the nutrients, but little of the carbon. Residues also have other uses in the livestock sector for animal bedding and feed, creating potential competition with the energy sector.

Gomiero et al. (2009) point out that humans have already appropriated a huge volume of the earth’s primary productivity and these resources are still limited. Karafyllis (2003) maintains that there are two views of nature at work here – nature as intrinsically productive allowing humanity to siphon off its surplus or nature as frugal, letting nothing go to waste: everything in nature is needed by nature. Some question the logic burning precious agricultural resources for energy, each time we burn plants we are burning valuable nutrients.

The idea of incorporating food and feed production within a biorefinery is based on the concept of efficiency and the need to extract maximum value from the resources at hand. Levidow and Paul (2008) raise objections to the ethos behind this step as were raised against food and non-food energy crops: it provides incentives for a shift towards large agribusiness and a strengthening of ties between industrial food and industrial fuel production. Others see this as a viable move representing the most efficient way to use scarce resources.

Summary

Non-food produce has always been an important part of agriculture. Fossil fuels came to replace

many non-food applications of agricultural produce in the industrialized global North. Industrialized society's desire to move away from fossil fuel use and the need to provide the global South with a clean alternative have created more interest in non-food produce within agricultural sciences. Energy crops for biofuels have been a particularly high profile and controversial non-food output. The majority of food-based biofuels were developed within an industrial, productivist ethos and not only incurred similar environmental impacts and issues of inequality as other industrial agriculture but also believed to compete with food production. Much current research within agricultural science focuses on the use of agricultural coproducts and non-food crops in response to these controversies. Some research is also taking place on promoting small-scale, local, and low-input agroecological models of bioenergy production, although this area is not widely researched within ethics and the social sciences.

Some are optimistic about the prospects of advanced technologies to reduce input requirements and lower and mitigate negative environmental impacts. Some are more cautious, making the point that any use of resources, whether "marginal land" or "wastes and residues," is likely to incur some environmental or social cost. Commentators state that many of the barriers in place to reaping the supposed rewards of these technologies are structural rather than purely technological. Others who are opposed to industrial, productivist agriculture see these developments as more of the same and indeed a further consolidation of power in the hands of agribusiness. It is likely that the non-food uses of agricultural produce will expand in the future as well as work within the natural, social, and economic agricultural sciences to achieve desired outcomes and negotiate resource constraints.

Cross-References

- [Access to Land and the Right to Food](#)
- [Biofuels: Ethical Aspects](#)
- [Climate Change, Ethics, and Food Production](#)

- [Land Acquisitions for Food and Fuel](#)
- [Resource Conflict, Food, and Agriculture](#)
- [Synthetic Biology and Biofuels](#)

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Agriculture and Ethical Change

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Synonyms

Agrarian empires; Feudalism and agriculture; Market agriculture; Subsistence agriculture; The great transformation

Introduction

Agriculture has been at the heart of the human ethical systems since 9000 BCE when plants and animals were first domesticated. The “invention” of agriculture meant that humans changed the way they looked at land, food, sharing, home life, family, gender, age, technology, and property.

Such massive changes have happened twice in human history. The first change was after 9000 BCE when hunter-gatherers settled down in farms in different parts of the world. New ethical systems emerging included new systems of social stratification, rural and urban, and professions. Many of these relations were rooted in ties of

personal loyalty and fealty between unequal people. Such systems even included large agricultural empires like those of Rome, China, and the Maya. These systems were often “feudal” in nature, because personal loyalties were at the heart of social interaction. In these worlds, agricultural production and food were central to the meaning of social life even though farm families were often poor and oppressed.

However, beginning about 1500 CE, new ways of organizing food production using globe straddling agricultural markets emerged. For this to work, though, new ethics about the production and sharing of food emerged. Most importantly, food became a commodity in the market, just like any other. Food, land, and labor became exchangeable for cash in a marketplace where economic advantage was more important than personal loyalty. Food was also the same as any other commodity and could be bought and sold at market prices. This is the globalized market system, which continues to extend its tentacles into remote farming areas, even in recent years.

From the Beginning

In the beginning, all humans were hunter-gatherers. Humans subsisted by following food sources – whether they were seals in the Arctic tundra, ripening berries and herds of deer in the temperate regions, fish that runs along rivers and coasts, roots dug in the desert, or the animals and fruits of the tropical forests.

Such subsistence strategies required extensive territories to support a family or clan that moved frequently. As a result the land supported very few people per square kilometer. This is because little of the natural biomass is suitable for human consumption in the form of fruits, vegetables, fish, grains, or game. Even in the tropical forests with their towering tree canopies, much of the biomass was woody or leafy and unfit for human consumption.

With such an irregular food supply, there were times of hunger and of feast. For example, the felling of a large animal, fish run, or even a termite swarm could mean that a clan ate well

for a few days before the meat spoiled or was stolen by scavenging animals. But this feast could be followed by days or even weeks of food shortage when the band might eat little. A particular type of ethical structure emerged which reflected this type of subsistence. In such societies, there is little wealth and hierarchy, and the basic unit is the clan of at most a few tens or a hundred people who shared food and worshipped a symbolic god or “totem.” Such societies were relatively egalitarian, and the only type of social stratification was that of age and gender, in which the surviving older men would receive some deference – though they still needed to walk with everyone else (Collins 1992, pp. 47–48).

Frequent movement also meant that people owned only what they carried. Strangers were rarely encountered and often perceived as potential threats. There was no fixed place of residence – rather there was a territory in which the band or clan wandered. Most important from a latter-day perspective, there was no way to store food, and what was collected, hunted, or caught was consumed quickly. The one domesticated animal the wandering bands had was the dog, which warned the group of approaching nocturnal predators (including at times other humans) and was also helpful with hunting. Constructed shelters were temporary and typically used for a few days or weeks.

Women in such bands had on average 4–5 children in a lifetime, and life expectancy among hunter-gatherers was typically pretty short – perhaps 20–25 years, largely as a result of the frequent deaths of infants, small children, and older adults during the stressful times when food was scarce. An injury also meant that if a person could not walk, they would likely die – anyone older than an infant who could not walk with the group to the next food source risked abandonment.

The First Great Transformation

About 9000 BCE a few of the wandering humans began to settle down into small villages, cultivate grains, and domesticate animals. They did this

first in the Middle East, though other areas of the world soon followed. In effect, these humans stopped following the edible crops and animals and instead developed plants which produced a great deal of food suitable for humans on land which was within walking distance of a “house.” This piece of land, instead of growing woods and leaves which humans could not eat, was cleared and covered with crop-like wheat, maize, vines, fruit trees, or other crops, which were edible by humans.

Also, beginning about 9000 BCE, the farmers domesticated animals like sheep, goats, cows, and chickens. Domestication had big advantages over hunting for humans; with hunting, humans hunt animals that hide. But with domesticated animals, the “meat” follows the humans who tend them. Slaughtering (or milking) one of the animals was much easier than chasing wild animals in the forest. The most important meat could be slaughtered when it was needed. Instead of wandering in the forest searching for animals to snare, trap, or spear, the “hunter” could simply slaughter one of the chickens when it came to roost at the farm in the evening!

In other words, farming and the domestication of plants and animals meant that the old order was reversed. Instead of searching nature for food and subsistence, humans bent nature to produce the food products they needed where they lived and no longer needed to follow the harvests that nature provided. Settling down meant that humans accumulated more goods than they could carry and in particular meant that food supplies could be stored, eliminating the terrible hungry periods.

With such changes, new ethics framed by the nature of agriculture emerged. The most important were ideas about the ownership of food stores and other properties. For example, who had rights to ownership, who lived in a home and hamlet, and who inherited the wealth of those who died? New ethics about the unequal distribution of property and the rights and responsibilities to protect property were created too. Who would be responsible for sharing in times of famine? What did it mean to be invited to eat at a stranger’s house? How would raiding parties

be organized when there was hunger and the only food available was in a neighboring field? And who would decide how to erect defenses against raiders? Finally, who was required to work in which fields and when, and what did this assistance mean for the sharing of the harvest?

A strongly gendered division of labor in which women cared for the house and children while the patriarch was the “public” face of the family also emerged in most such societies. Patriarchy emerged to assert control over the resources that the family or clan produced.

There were more implications for social life, particularly with the development of permanent housing made from local materials (e.g., mud, sticks, stone, reeds, hides, etc.). Birth rates also increased as the time between pregnancies decreased, since it was no longer necessary to carry children until they walked. Women became pregnant more often and, as a result, more focused on child rearing; a typical average birth rate was 7–8 children per woman. Finally, a simple injury was no longer necessarily fatal since a leg wound could be tended at home and the injured person fed from the ripening fields of their family, even if they did not work.

Permanent dwellings meant also that clans began living near each other and socializing with a larger group that came to be thought of as kin-based ethnic group or what is known by the archaic term “tribe.” Such groups were organized into a homesteads, hamlets, and series of hamlets. Such groups grew quickly, because of rising birth rates, and the fact that the young and elderly survived hungry periods and simple accidents did not lead to abandonment. Older people – grandparents – became more common and honored.

It was in this first Great Transformation from a sparsely populated hunting and gathering world in which life was focused on migration to a farming world focused on the cultivation and harvest of crops that the arts, trade, law, philosophy, music, religion, and literature could be cultivated. Such new culture eventually became the basis for the wealth, power, and ethics of great agriculturally based empires like Ancient Rome, Ancient China, and Mesopotamia.

But making all this work required shifts in what was viewed as right, wrong, good, and bad, i.e., what was *moral*. To reinforce this, densely populated areas began to tie themselves together with shared cultural rituals. By about 5000 BCE, they began to create cities centered on a government. Such governments were controlled by powerful political figures such as kings and their courts and even emperors.

Ethics and Early Farming Communities

Starting about 9000 BCE, farming communities in places like Mesopotamia, the Indus River valley, China, and Egypt began emerging. Annual rituals marked planting, arrival of annual floods or rains, and harvest. These rituals reminded people of the centrality of agriculture to subsistence. Such rituals connected the group to the spirits that were often identified with the landmarks near where they lived and the animals the group respected. Supernatural forces were associated with weather because of the importance of timely rains for a good harvest. Specialists, i.e., shamans, who could divine or control the rains, became important figures. Concepts defining gift giving and trade also emerged, with personal gift giving regarded as the most honorable form of “exchange.” And a few people began to specialize – and become very good at – the tending of animals, horticulture, ritual, trade, rainmaking rituals, and even fighting.

Nevertheless the overall organization of each community was not like the complex economy of today, in which every family is dependent on the functioning market to survive. Rather it was what the classical sociologist Emile Durkheim (1973, pp. 64–69) called “segmented.” To illustrate, when a clump of seaweed grows on the floor of the sea, each individual leaf moves together with the waves and seems very alike. But what looks one single plant is not. Any single leaf does just fine if separated out and planted elsewhere on the sea floor. In the same way, Durkheim wrote, each independent peasant household provided for itself independently of its own needs by growing its own grain, building similar housing, and wearing similar clothing.

Or as Karl Marx described the French peasantry in the nineteenth century using an even more vivid metaphor, that of a bag of potatoes:

The small peasants form a vast mass, the members of which live in similar conditions, but without entering into manifold relations with one another... The field of production, the smallholding, admits of no division of labour in its cultivation, no application of science and, therefore, no multiplicity of development, no diversity of talents, no wealth of social relationship. Each individual peasant family is almost self-sufficient... The smallholding, the peasant and his family; alongside them another smallholding, another peasant and another family. A few score of these make up a village, and a few score of villages make up a [province]. In this way, the great mass of French nation is formed... much as potatoes in a sack form a sackful of potatoes. (Quoted in Waters 2007, p. 9)

French peasantry in other words produced what it itself needed, without reference to larger markets. Families planted enough wheat for their own bread, barley for their own beer, raised their own vegetables, and tended the livestock they needed to feed their family. Little food was grown for the market.

But this was not all. Often farmers were dominated by a chief or king who sought tribute from them which might be 5–20 % of their crop; so as a rule of thumb, a peasant family might plant 90 % to feed themselves and then an extra 10 % in order to satisfy their tribute obligations to the local nobles. In turn, the noble was responsible for “his” peasants in the event of famine, pestilence, invasion, or impoverishment. The relationship was a sentimental but unequal relationship, not one where labor was bought and sold. It was a *moral* relationship that had a past, present, and future between noble families and the peasantry.

The Ethics of the Great Agrarian Empires

Daniel Chirot (2011, p. 141) calls the implicit compromise between the relatively independent peasants on the countryside and the luxury-loving elite a “terrible dilemma,” because the peasantry gave up individual freedom, in exchange for being part of a state which provides protection from invasion and famine. The dilemma was that the subsistence peasantry became ever more

productive; they became attractive to raiders and brigands seeking to steal the wealth their lands and herds produced. The first response of the farmers was to band together under the leadership of a great fighter. At first, this warrior chief was only “in charge” during times of military threat. When there was no threat, he would return to his fields and be the patriarch of his own clan. But, by about 5000 BCE, a few of these villages developed into cities that supported a permanent “court” of officials. In an implicit exchange for organizing military protection, these new “nobles” required the peasantry to surrender not only the crops but the freedom to leave the “kingdom.”

The right of the king to “his” peasants was legitimated via ideologies emphasizing the divinely ordained power of the king vis-a-vis the peasantry. Thus, even though the health of the kingdom ultimately rested on the success of the low-status peasantry, ideologies emerged that insisted that the nobility was higher and more important. The kings were even considered to be deities. In this way, farmers became “tied” to the land, i.e., they were “inalienably” connected to a particular place in a manner which meant that they could not abandon their ruler but also their ruler could not expel them from their farm.

Wherever agricultural wealth accumulated, such systems of inequality between the rulers and ruled emerged. Such systems were focused by the personal loyalties of feudalism. Typically the peasantry owed the particular king’s court a share of their crops and service in his army. In exchange the feudal lord extended protection from famine and invasion specifically to the peasants for whom he inherited responsibility. Farmers all over the world encountered this terrible dilemma in places as diverse as Ancient Mexico, Peru, China, Rome, Egypt, Mesopotamia, and the Indus River valleys. But what was lost and gained in this trade?

The peasants of course lost their freedoms to travel and criticize rulers, and the sons of the peasantry were drafted into battle. Tax loads could be heavy, too. But, this loss of liberty also protected for the peasantry from other threats,

especially attack by enemies, and periodic famine. The nobility protected “their” peasantry from attack and starvation by maintaining fortresses or castles, where food was stored to distribute during famine or military siege.

Such rights and responsibilities were embedded in feudal society via ritual and religion. Rituals celebrated the connection between the peasants and their king, who was a father figure to whom the mysteries of religious faith demanded obedience. From today’s perspective, such tie seems fantastical; but they worked to tie kingdoms and even empires as large as Rome together in unequal kinship-like loyalties.

The Ecology of Feudalism: Elites and “Their” Countrysides

Historian William McNeill (1978) described well the ecological relationships of what became the great agricultural empires between about 4000 BCE and 1500 CE. What these agricultural empires had in common was that they had rich farm areas, which McNeill called the “engines” of demographic and economic growth, centered on a city.

Cities had three things essential to such empires: the court of the king or emperor, a priestly caste who controlled religion, and the markets with their traders. Unlike today, the cities were not centers of manufacturing and production, and the wealth of the kingdom came from the rural areas.

But still the nobility, priests, and traders had two problems. First, they could not produce enough food to feed their population and so relied on the existing countryside to send them the foodstuffs they needed to live and become wealthy. But there was a second problem, too, which was that the premodern city was dirty and had high rates of disease so more people died than were born. As a result, a continual influx of new people from the countryside was needed so that the king’s court, the priestly caste, and the marketplace could be staffed. The engine of growth – the settled rural areas – provided a solution to both problems. They had surplus population as a result of their high birth rates and sent food as a symbol of their obeisance.

The Ethics of Food and Agriculture in Feudalism

Food was the center of ethical life in feudalism whether sending tribute to the king, offering food to the spirits or gods, feeding a family member, or hosting honored guests. Food defined love, responsibility, and friendship. Those who were the “us” group supped together. “Come and eat, this is my grain, that I grew with my sweat, and it is given to you.” The food the farmer grew had special meaning beyond its role in nourishment – it was produced through the farmer’s own work and sweat and was created because the farmer gave of himself. The sweat was turned into food, which was used to nourish children, and those who the farmer loved. Or it went to guests, who were invited to eat of the rice, maize, beans, or bread that the farmer created; guests were told to “come and eat, this food is created personally by me, and I give it to you as a mark of my respect for you.” Or perhaps, “because I have grown this (rice or maize) myself, it tastes far better than what money buys!” (Waters 2007, pp. 10–12).

In agrarian societies, the agricultural cycle of planting, tilling, and harvesting structured the year. And everywhere rituals marked shifts in the weather and cropping cycles. In the temperate zones, spring festivals signaled planting. There were also special ceremonies associated with the winter and summer solstices and especially harvest festivals. The priestly caste emerged, which claimed control over dangers that threatened the crop cycle. Songs, dances, altars, religion, and artwork were created to appease gods who controlled the weather, the harvest, crop diseases, and particularly rain cycles.

Loyalty to the group was a primary ethic in traditional horticultural societies. Work groups, military groups, occupational groups, ancestor cults, and many other types of groups were organized. Ancestors buried on the land in places like China, Africa, and Europe were important too, representing the connection between the ancestors, the land, and the future. Holy days were timed to reconstitute the group; indeed, these agriculturally derived holidays are still important rituals for extended families, even in the modern world. For example, in the modern United States

and Canada, this happens during the Thanksgiving holidays. In China today, this happens in the context of the spring and fall festivals when factory workers return home.

The primary unit of loyalty in subsistence societies is the extended family, i.e., what Durkheim called the “segment” and Marx sarcastically compared to a potato in a bag. As Marx and Durkheim described, tasks were delegated within this family, and the growth (or shrinkage) of the family unit was key to the family’s well-being, not the cleverness of a particular individual entrepreneur.

This also led to an ethic emphasizing that if one member of the family was fortunate and became rich or powerful, the rest of the family could call on that person to share. Modern writers sometimes call this “amoral familism” because it means that when a person does have the capacity to favor others in decisions about hiring, purchasing, and so forth, they tend to look to family first, not the “best financial deal” or the interest of a larger corporation. To call such a situation amoral or corrupt, though, belies the centrality of family loyalty in traditional agricultural communities. In such communities, ethical behavior is to serve one’s own kin first and not that of a distant modern bureaucracy.

The Second Great Transformation

The first Great Transformation gave birth to the type of agricultural society described above. There were villages, extended families, nuclear families, “tribes,” feudal systems, and the agricultural empires. Relations between the nobility and the peasantry were exploitative, but also sentimental. But then something began happening about 1500 CE in Europe to end this long era. Values and ethics shifted toward something new: Markets, money, and economic efficiency came to be a new source of both values and ethics. This of course is the world familiar to the modern readers of encyclopedias like this one; it is the world of the global marketplace in which we sell our labor to the highest bidder, in exchange for the hard cold cash needed to buy our subsistence.

Or as “Ma Wilder” complained in the nostalgic *Little House on the Prairie* children’s books written by daughter-in-law Laura Ingalls Wilder:

“There’s not ‘but’ about!” Mother said. “Oh, it’s bad enough to see [our son] Royal come down to being nothing but a shopkeeper! Maybe he’ll make money, but he’ll never be the man [a farmer is]. Truckling to other people for his living, all his days. . . .”

A farmer depends on himself, and the land and the weather. If you’re a farmer, you raise what you eat, you raise what you wear, and you keep warm with wood out of your own timber. You work hard, but you work as you please. You’ll be free and independent son, on a farm. (Wilder 1935, pp. 367, 370, quoted in Waters 2007, p. 5)

As Ma Wilder knows, the older ethic of family loyalty is turned on its head in the new world, and cash becomes the ethical imperative for our capacity to eat. Land and labor become “alienable” in the new world, meaning that each can be sold separately. You must become a person who values time as money and opportunity to “truckle,” rather than relationships and independence. Land becomes defined in terms of market productivity, separate from the people who may or may not live there. You come to define good in the way Benjamin Franklin did:

Remember that time is money. The man that can earn ten shillings a day by his labor, and. . . sits idle, on half of that day, though he spends but sixpence during his diversion or idleness, ought not to reckon that the only expense; he has really spent, or rather thrown away, five shillings besides. (Weber and Kalberg 2002, pp. 13–16)

So how did the ethic of cold hard impersonal cash described by Franklin become so important in the older farming world, where sentimental relationships were so central? After all, to create this new world, the older ethics of personalism, paternalism, feudalism, and tributary payments need to disappear and be replaced by the new ethic. How did this happen?

The Rebellion of the Rich Against the Poor

The classical sociologist Karl Polanyi (1944) describes the second Great Transformation, when traditional agricultural society became the modern market economy. Polanyi describes the second Great Transformation as beginning in

England in about 1500 CE, when the rural areas began to be transformed. Polanyi writes that traditional peasant farmers were changed from being decent farmers taking care of their own families to being labor, which could be bought and sold on the open market, particularly in the new industrializing cities. Polanyi calls this a “revolution” because it upended the old unequal relationship between the feudal lord and peasant and replaced it with a world where cash, labor, land, and product could be bought and sold. He blames this change on the nobility who profited when they abandoned their responsibilities to protect “their” peasants and sold the land the peasants had considered theirs since “time immemorial” to the highest bidder. Polanyi wrote about The Great Transformation, which he called the “revolution of the rich against the poor” (1944, p. 35):

The lords and nobles were upsetting the social order breaking down ancient law and custom, sometimes by means of violence, often by pressure and intimidation. . . . The fabric of society was being disrupted; desolate villages and the ruins of human dwellings testified to the fierceness with which the revolution raged, . . . wasting its towns, decimating its population, turning its overburdened soil into dust, harassing its people and turning them from decent husbandmen into a mob of [urban] beggars and thieves. (1944, p. 36)

A new type of severe urban poverty emerged in the nineteenth century from this dispossession, even as the world became richer as a result of the Industrial Revolution. Farmers who had feudal rights to farmland since “time immemorial” were pushed off the land that produced food and into the cities where they became urban factory workers. Planting decisions were determined by the needs of the marketplace for food, raw wool, cotton, and linen needed by the textile mills. The final word was with the price-setting commodity brokers, not the farmers.

In nineteenth-century Europe, this change often meant the land was shifted to raising sheep for the wool needed in the factories of the Industrial Revolution. In India and the southern United States, vast tracts were planted to cotton. In other places, and at other times, central

governments and capitalist farmers created farms for wheat, maize, and other grains which were sold into markets and purchased by the wageworkers in the rapidly growing industrial cities. The point Polanyi made was that peasants who had had rights vis-a-vis old feudal lords in the “terrible dilemma” lost much in a world torn asunder, where the old ethics were traded for new ones. The old subsistence peasantry suffered being decent but poor farmers, but the new urban wage laborer lived or died at the whim of the industrial labor market described by writers like Polanyi (and Charles Dickens) who saw them become “a mob of beggars and thieves,” in cities like nineteenth-century London.

In feudalism, land, and the food it produced since “time immemorial,” was *inalienable* from the peasants who lived on it – meaning that feudal landlords could not kick the peasants off when they sold the land. There also was no such thing as “title.” As a result the peasants could also not sell “their” land rights nor borrow money from a bank using the land as collateral. In the older system of feudalism, the peasantry and the land were the same inalienable unit. And indeed the king might “sell” the lands (complete with peasants) to another noble, or the land might be captured in a war, but irrespective of this, the older morality of feudalism prevailed, i.e., the peasants and their heirs remained on the land, alive and producing for their own consumption and payment of tribute.

But the advent of capitalism with the separation of subsistence peasants from their farms introduced new incentives to the nobles who held legal title to the land, to move the “landless” peasants off. And indeed, this was the “Great Transformation” and “revolution of the rich against the poor” that Polanyi wrote about. For example, when cotton, flax, and wool in great quantities were demanded at the textile mills, peasants were foreclosed on. For example, in nineteenth-century Scotland, peasant land was given to the production of single cash crops, for example, sheep for wool, flax for linen, or wheat to make the bread sold to factory workers. Similar programs that required the alienation of land

from the subsistence peasants occurred around the world and, indeed, continue today in parts of Africa, Latin America, and Asia where subsistence peasantries persist (Waters 2007, pp. 155–214).

But this new ethic means that land is a commodity, which is bought and sold, and produces what the market demands, rather than what farm families need to eat during the following year. What is more, the peasants who moved into the urban labor market must rethink what work means. Is it work to independently feed you and your family? Or is it work for the generation of money? Benjamin Franklin's ethic said that money was important for its own sake, and human labor was money as measured with a stopwatch. Labor no longer meant producing personally to feed family, neighbors, nobility, or guests either. It meant truckling to other people to make a living – and as much cash as possible. “Subsistence” means buying food from the box or bin of a middleman who does not grow anything, but squeezes profit out of what others produced by “truckling” to other people rather than laboring in the earth, that most honorable of profession!

Thus, the new ethical system emerging after 1500 CE in Europe assumed that land, labor, capital, and commodity were bought and sold in the open marketplace for cash. A “spirit of capitalism” emerged, and food became only one element in a global economy, in which farms were simply capitalist factories in the field.

Watching this transformation in 1787, Thomas Jefferson framed this term in explicitly moral terms:

Those who labour in the earth are the chosen people of God. . .Corruption of morals in the mass of cultivators is a phenomenon of which no age nor nation has furnished an example. [Corruption of morals] is the mark set on those, who. . .depend . . .on the casualties and caprice of customers. . . . (Jefferson 1787, pp. 164–165 quoted in Waters 2007, p. 4)

Most importantly, farming and all other economic activity were no longer like that uncomplicated seaweed growing on the floor of the sea,

or a bag of potatoes, but a finely tuned watch in which many elements were key. As for the old nobility, the new markets asked them to remove the peasantry from the land so it could be put to the most efficient economic use. They did this through evictions and foreclosure using bankers, the sheriff, and the army. In the process the old nobility and their capitalist successors no longer saw itself as benevolent patriarchal figures, but as hard-nosed businessmen for whom time, land, and production were cash. Former nobles came to see themselves as plantation owners with an interest in squeezing capitalist profit out of their investment in the land and labor.

So the new ethic is the marketplace Jefferson and Ma Wilder disdained as immoral. Food is no longer seen as the stuff of life, and farms sell their entire crop to a local grain or cotton dealer. Food is just another commodity, interchangeable with any other. This is fundamentally different from the older subsistence ethic, which valued food production on a farm above all others and in which food was assumed to be essential to social, psychological, and physiological sustenance.

The American writer Mark Twain described this change in ethical outlook most succinctly, when he described his protagonist Huckleberry Finn, the ne’er do well son of the town drunk, in the following way:

Huck was always willing to take a hand in any enterprise that offered entertainment and required no capital, for he had a troublesome superabundance of that sort of time which is not money. (Mark Twain, *The Adventures of Tom Sawyer*)

The Emergence of the Modern Capitalist Middle Class

But this complex marketplace also permitted the emergence of the middle class which seeks its meals not from hunting and gathering, as did all of our remote ancestors before about 9000 BCE, or by farming as our more recent ancestors did until recently, but from the vast global marketplace. People still need food, but few grow much themselves, and they instead happily “truckle” for jobs in the labor market and for food at a nearby supermarket. As Polanyi put it, the

ethical transformation is as great as when a caterpillar metamorphoses into a butterfly. Farmers and consumers become reliant on the price setting undertaken at the Chicago Board of Trade, where global grain prices are set. This market system is very successful in its own way; where before about 90 % of the people produced food for everyone living in countryside and city, in the modern United States, farmers make up less than 2 % of the population and are able to produce enough for the other 98 % to eat and even more for export into world markets.

In this vast global marketplace, almost everyone (except Huck Finn) sells his or her labor for cash, not for love of family, or even a local noble. Today's farmers grow food and receive cash back to purchase their own food from the local supermarket, just like the rest of us. In this new world the ethics of the marketplace where "time is money" dominate. This applies equally to the modern capitalist farm, the modern capitalist consumer, and the modern capitalist grocery store, which all negotiate for market advantage, rather than appealing to the romantic, agriculturally based ethics Thomas Jefferson and Ma Ingalls asserted. In this vast market system, people who are strangers to each other work and produce in a fashion which benefits and feeds a vast network of people. And again, this market has advantages: The new system is extraordinarily productive, far more than the farmers like Ma Wilder who only raised what they ate, raised what they wore, and kept wood for their own warmth, and little else.

Food, Agriculture, and the Spirit of Capitalism

The ethic of the underlying metamorphosis is the spirit of capitalism which sociologist Max Weber described in his book *The Protestant Ethic and the Spirit of Capitalism*. Weber's spirit of capitalism reflects the view that money and cash trumps all other considerations in modern social life – particularly those of the traditional farm where there was a close personal connection

between the producer of food and those who ate. Instead, time is money and vice versa – work is not about family loyalty, sentiment, or love. Ethics are about business and profit where a close connection between work and cash is mediated by the modern businessman and where spreadsheets describing cash flow drive patterns of consumption, production, and distribution. Ironically, in the new world, only a layabout like Huck Finn can anymore afford the luxury of "a superabundance of that sort of time that has no money." In such a world, food, even with all its cultural and ritual significance, becomes just another alienable commodity. It no longer matters who produced the grain, just that it is grain, in the same way the production of a computer is just an anonymous computer. The person who grew the grain is as irrelevant to the final user, as the person who assembled an iPad.

So the modern capitalist farm is a factory in the field, with the same ethical imperative for profit-making a textile or iPad factory has. From an ethical perspective, today's farmer is a businessman, not the romantic figure Jefferson wrote about. And yet Jefferson's romance still holds a place in the modern imagination; food production is still often privileged with special legal protections. Such protections often draw on nostalgia for the old days when farm work was sacred and more honorable than that of a truckling shopkeeper. Ultimately such ethical reasoning is still closely connected to the personalistic and paternalistic logic of feudalism, in which the role of the food-producing farmer as the base of society is honored. In this context there are continuing political demands for agricultural crop supports supplied as cash to support vast corporate-owned "family" farms, and aid for the poor is provided in the form of "food" stamps rather than cash. This reflects an ethic drawing on nostalgia for Jefferson's idealized farmer and the responsibilities of the king to provide succor to "his" peasants in times of food shortages and especially famine.

Thus, food aid for the poor is still protected in special ways in modern capitalist countries. For example, in the United States, to assist the poor,

the federal government issues “food stamps” in the form of ATM cards. In African refugee camps, surplus food harvested and bagged in the United States and Europe is personalized by stamping it with the flag of the donor and then shipped at great expense around the world, even when cheap food stocks are often available in nearby markets.

The special place the modern farmer plays in the popular imagination was illustrated, in a strange place, when the most popular television commercial played during the 2013 Super Bowl football game in the United States advertised a Dodge Ram pickup truck. The truck, made in the factories of Detroit, and sold for about \$30,000, was praised by having the popular broadcaster Paul Harvey read a poem in the commercial asserting “So on the Eighth Day, God Made a Farmer,” reflecting the special place that farmers have in America’s cultural imagination, even in suburbs and cities where the Super Bowl is watched. Ironically the four-door air-conditioned pickup truck was almost incidental to the commercial – which described the multitude of tasks that a subsistence farmer would do with horses, cows, fields, and machinery. The implication of the commercial was that, as Jefferson wrote, the farmer is indeed still the most exalted creature of God.

Summary

Since the Agricultural Revolution began about 9000 BCE, food and agriculture have ordered relations between human beings. This entry is about the role that farming and food plays in ordering ethical behavior, with respect to issues like loyalty, sharing of food, the allocation of land, social hierarchy, and markets. Most critically, food and agriculture help define who is the “us” of the group who will be fed and who is the “them” for whom there is no obligation to feed. This entry explains how these needs changed during the two Great Transformations of human history, i.e., the transition from hunting and gathering societies to farming communities, which

began about 9000 BCE, and the second, which began only about 500 years ago, when most humans began abandoning farms, for the modern market-oriented society of today.

Cross-References

- [Agricultural Ethics](#)
- [Economy of Agriculture and Food](#)
- [Farmer Types and Motivation](#)
- [Food and Life Chances](#)
- [Homesteading](#)
- [Human Ecology and Food](#)
- [Hunting](#)
- [Jefferson’s Moral Agrarianism](#)
- [Population Growth](#)

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Agriculture and Finance

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Synonyms

Agricultural finance; Commodity exchanges;
Credit; Debt; Financialization; Lending;
Speculation

Introduction

The agricultural and financial sectors have long intersected with one another in various interrelated forms. These include financing for agricultural production, financial backing for trades on agricultural commodity exchanges, and financial investment in agriculture-based derivatives. Within each of these forms of financial sector interaction with the agricultural sector, the roles of states and private financial investors have shifted over time. Governments have created institutions to financially support farmers and have put in place regulations to reign in “excessive” speculation and to limit financial actor’s influence over agricultural commodity markets. In the last few decades, governments have removed many of the protections and institutions that supported farmers and relaxed regulations on financial actors. Today, the balance seems to rest firmly with private actors. These shifts have important implications for farmers, consumers, and the environment.

Agricultural finance refers to the provision of capital and credit and describes how farming, and to a lesser extent agribusiness, acquires, manages, and invests capital. Agricultural financing is unique because farming is unique. Farms are often small, family-sized enterprises, which are geographically dispersed and are dependent on

uncertain factors such as weather and access to water. Private capital is reluctant to invest in farming because it is risky in comparison to other sectors such as manufacturing or services. Consequently, governments have provided financial support for farmers in the form of loans, such as mortgages, price supports, export trade financing, and other subsidies. The term agricultural finance is also used to describe rural financing systems, which include new forms of financing based on risk management such as weather insurance.

Agricultural commodity marketing and trade are areas where private speculative capital has been very active and as a result they are contested sites. In the nineteenth century, US commodity exchanges created fungible agricultural commodities through a combination of technological innovation and market regulation (Cronon 1992). Commodity exchanges emerged from cash markets to centralize trade and facilitate commodity exports and depend on speculation to operate. Speculation is a trade based on the prediction of price movements with the uncertain possibility of a reward. As a result, speculation is risky, and trades are usually made with no intention of taking physical delivery but with the intention of resale. The US government regulated commodity exchanges in the early twentieth century in order to reduce chances for market manipulation by private actors and restrict excessive speculation.

Agriculture-based derivatives have traditionally referred to futures, a commodity exchange contract based on the future delivery of a specific type and amount of a commodity. Futures contracts are “derived” from an underlying physical commodity. Contemporary derivatives also refer to financial products, typically sold by banks and other financial investment firms that are further removed from actual commodities and commodity trade. These financial products often track agricultural commodity prices in an index, referred to as a commodity index fund, and bundled in many instances with nonagricultural commodities such as minerals and oil. In addition, some index products also include agricultural land. Most of these financial products developed in the wake of financial market deregulation in the 1980s–1990s.

Historically, the state has played an important role in creating institutions to support agriculture and to regulate finance over the past century. In the USA, financial market regulations, as noted above, included measures to keep agricultural commodity markets stable. While the activities of banks were restricted in commodity markets, legislation supporting credit unions and other cooperative endeavors were encouraged. In Europe, agrarian interests established cooperatives and credit unions to finance and support farmers. In Canada and Australia, governments established marketing boards to manage commodity trade of grains, in part to restrict the manipulation of grain markets and to provide stable prices and orderly marketing for exports.

Recent decades have seen a systematic reduction in the role of the state in these functions. Financial market regulation has been relaxed in the USA, while government marketing boards have been reformed and privatized in Canada and Australia. While the vast majority of US farm credit is held by state agencies, commercial banks' share of credit is increasing (Briggeman 2011). This move away from state involvement in financial aspects of the sector has had important implications for agriculture and farmers. Whereas farmers and agriculture shaped financial regulation in the past, there are indications that finance is now shaping agriculture and agricultural commodity markets. The implications of these changes include food price volatility, increased speculative activity in agricultural commodities, including land, increased farm debt, and declining farm incomes.

The increased visibility and intensification of these trends contributes to what many refer to as the “financialization of food.” Financialization generally refers to the “(I)ncreasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international levels” (Epstein 2005, 3). Financialization is expanding into areas beyond traditional agricultural export nations such as Canada, the USA, and the EU as international organizations promote “financial inclusion” in many developing countries as

a tool for agricultural development and growth. Financialization is being extended, albeit unevenly, to new global sites, and it is accompanied by new financial actors and new kinds of financial tools.

Agricultural Finance

Agricultural finance in a formal sense is a fairly recent development. Although there were (and are) forms of credit associated with subsistence agriculture, such as traditional money lenders, agricultural credit institutions arose with the commercialization of agriculture in the nineteenth century. Scientific agriculture arrived with a new production system that required capital for the purchase of inputs and the selling of outputs by farmers. While not unheard of, in the early part of the century, agricultural finance was of little interest to private banks (Wolff 1910). Instead, the state stepped in at this point to provide agricultural credit to support the industrial agricultural model and became the lender of last resort. Farmers organized to form cooperative agricultural banks backed by the state, and state-owned institutions such as the Canadian Farm Loan Board in 1927 were established. The US government enacted the Federal Farm Loan Act of 1916 and created Federal Land Banks. The focus of state intervention was to provide farmers with credit and to prevent farm foreclosures (Coleman and Grant 1998).

Agricultural financing continued to be supported by developed countries after the Second World War. Agricultural commodity trade expanded as exporting countries marketed grain surpluses around the globe through export financing and subsidies. Canada and Australia supported grain marketing boards which guaranteed domestic farmers' income and extended credit to importing countries. While the farmers of exporting nations benefitted from the supports, farmers in developing countries had to compete with “dumped” commodities. At the same time, many of these countries, as they gained the independence, established state marketing boards that followed on from colonial marketing agencies (Laan 1987; Bates 2005).

Government backed institutions to support agriculture dominated in the late nineteenth and early twentieth centuries, but these supports became politically unpopular in the wake of free trade and structural adjustment programs in the late twentieth century. By the 1970s, it was no longer seen to be in the public interest for governments to support and bear agricultural risk. The structural adjustment programs and free trade agreements of the 1980s and 1990s delegitimized state institutions by describing them as inefficient, anticompetitive, and too expensive (Baveria and Bello 2009). A coalition of agricultural producers, commercial banks, and federal ministry officials pushed for the dissolution of state agencies (Coleman and Grant 1998). For example, in Canada, the crown corporation Farm Credit Canada was restructured to align with private credit in the 1980s and began to extend credit to agribusiness and processors. A similar pattern occurred in Brazil. Structural reforms in the early 1990s displaced domestic credit agencies and encouraged foreign direct investment by agri-food corporations (Kumar and World Bank 2005).

As a result of these changes, agricultural credit shifted from being primarily state supported to the private domain and increasingly global capital (Coleman 2004). In the USA, state-supported agricultural credit has been declining and private financing is increasing. The farm credit system holds a significant amount of debt, but since the 1990s private credit has been increasingly funding farm operations (Briggeman 2011). In addition, new sources of credit are being offered to farmers, for example, machinery suppliers are providing loans, and grain corporations are providing loans and forward contracts to secure supplies.

While there are indications that private financial institutions and actors are providing credit to farmers in OECD countries, there has been less success in low income countries. Economists have long linked access to credit with the adoption of agricultural technology and innovation. In addition, some economists have highlighted how the lack of agricultural finance reinforces “poverty traps” and advocate for risk-based finance

programs (Sachs et al. 2004; Dercon 2005; Barnett et al. 2007). As a result, international development agencies and banks have developed a number of programs to encourage private finance to support agriculture and boost “financial inclusion” (Aitken 2013, e.g., www.gpfi.org). These projects include structured trade and value chain financing (Miller 2011; McMichael 2013), programs to encourage the reform of collateral laws and land titling (World Bank 2012) and microfinance (Aitken 2013). Importantly, all these development programs are premised on debt (Shipton 2010).

Commodity Exchanges

The link between financial investors and trade in agricultural commodities has a long history. Futures exchanges for agricultural commodities were established in London in the eighteenth century and in the USA in the nineteenth century, as an outcome of globalized trade. These markets provided a means by which buyers and sellers of contracts could purchase and sell agricultural commodities for delivery at a date in the future and could hedge their risks against the uncertainty of trade. In addition, the contracts established quality, delivery dates, and ownership. By the mid-nineteenth century, the practice of commodities futures trading became widespread.

Commodity exchanges centralize and organize markets, commercialize agriculture, and provide important services such as price information and risk protection. Furthermore, as government support has waned for agriculture, proponents of commodity exchanges state that these services can and should be extended to farmers. In particular, farmers who have difficulty accessing credit can use the services of commodity exchanges to manage risk and raise capital. However, commodity exchanges also have critics.

Historically, farmers and farmer organizations have been distrustful of commodity exchanges, and agrarians were the first and primary critics of large-scale markets speculation. Although many

states had outright banned futures in the USA, by the late nineteenth century, the fictitious or paper trade of futures contracts had overwhelmed the physical trade of commodities in centers such as Chicago (Cowing 1957). For example, a contract would be written on a bale of cotton or a bushel of corn that had not yet been harvested, but a contract representing that corn could be traded many times over with multiple bets on price movements. Financial speculators benefitted from credit that enabled them to buy contracts with less than 10 % of the value of contract.

The debate on whether commodity exchanges are necessary for agricultural commodity marketing and financing pivots on who one thinks should benefit from futures trading. Early commodity exchanges were initially developed by grain traders and large grain farmers and included grain elevator operators, railway companies, and food processors such as millers. Proponents of commodity exchanges argue that trades are based on probability and science and require expertise to understand how futures work and that futures can provide insurance for these operators (Mathieson 1942; Berg 2011). For example, hedging can be used to manage risk and insure against unexpected commodity price swings. Although there have been many efforts to make commodity exchanges more attractive to smaller farmers and other agricultural producers, only the largest producers are regularly active on the exchanges, and activity is mediated by brokers. The utility of commodity exchanges is open for debate, and the debate often revolves around the role of the financial speculators who provide the needed capital to keep agricultural commodity trade liquid.

Agrarian movements were critical to developing unique forms of financial regulation and legislation in the USA and Canada (Prasad 2012; Sanders 1999; Carney 2011; Winson 1992). The US Grain Futures Act of 1922 and the 1936 Commodity Exchange Act sought to limit manipulation. These regulations required all futures trading take place on approved exchanges, mandated daily reporting by traders on their activities, and implemented “position limits” on financial speculators operating in these markets which

controlled the number of futures contracts they were legally allowed to hold at any time. In addition, the 1933 Glass-Steagall Act regulated banking and speculation by banks. The aim of the legislation was not to outlaw financial speculation on these markets, but rather to prevent “excessive” speculation that might result in market manipulation and sudden sharp price shifts (Clapp and Helleiner 2012). Since 1974, the Commodity Futures Trading Commission (CFTC) has been the regulatory body overseeing these regulations in the USA.

The liberalization of financial markets in the 1980s–1990s resulted structural shifts in agricultural commodity markets. For example, the 2000 Commodity Futures Modernization Act (CFMA) brought in changes to rules that relaxed position limit and reporting rules. Commodity exchanges also underwent significant organizational and technological changes in recent decades. Exchanges have shifted from discreet, voluntary self-governed associations, to multinational, publicly traded corporate models with a responsibility to shareholders and profits. The trend among the exchanges toward consolidation occurred alongside investments in new exchanges in Asia, Africa, and Eastern Europe. The new exchanges are supported and promoted by international organizations as development programs and as a support to farmers. In addition, deregulation has facilitated new financial tools and actors.

Agriculture-Based Financial Derivatives

Although tight regulations on the agricultural commodity futures trade had been in place for over 50 years, the relaxation of those rules in the 1980s and 1990s enabled banks to sell new financial products linked to agricultural commodities (Ghosh 2010). The combination of relaxed position limits and exemption of off-exchange (over-the-counter, or OTC) derivatives from reporting, in particular, fuelled the creation of new financial products that burst onto the scene without regulators being aware of its size and scope. Finance and specifically derivatives growth are increasing in emerging markets. Importantly, commodity

exchanges in the industrialized countries are dominated by financial products, but Southern exchanges are dominated by agricultural contracts.

A common agriculture-based financial derivative product that banks began to sell is known as a “commodity index fund” (CIF). CIFs track changes in the prices of a bundle of different types of commodities as an index. The index is made up of the prices of agricultural commodities, minerals, livestock, and petroleum products. Typically, agricultural products account for around one third of the value of these indices. CIFs enable investors to gain exposure to commodity markets without being required to purchase the actual commodities on exchanges. The Standard and Poor’s Goldman Sachs Index and the Dow Jones-AIG Index are some of the more popular CIF products on the market (IATP 2012; De Schutter 2010). The sale of these financial products poses real financial risks for banks that sell them, because they must pay out to investors if prices rise. To hedge these new financial risks, the banks began to purchase commodity futures contracts on commodity exchanges – which they became able to do with a relaxation of position limits. The ability to enter the commodity markets enabled them to gain financially if prices rose and thus to be able to make the payments to investors.

Around this time, banks and investment houses also began to offer other kinds of financial derivative products linked to the agricultural sector, including funds in commodities as well as farmland and agriculture-based firms (Burch and Lawrence 2009, 271–2; McMichael 2012, 988–91). BlackRock, the world’s largest manager of assets, for example, established its Agriculture Fund in 2007 that invests in a range of agriculture-based assets, including commodity futures, farmland, agricultural input firms, and food processing and trading companies. General agricultural funds typically bundle these investments into an index in which retail and institutional investors can purchase shares. Some of the new agriculture funds specialize specifically in farmland acquisition. Some 66 funds now include land in their investment portfolios (Buxton et al. 2012).

Large agricultural commodity trading firms have also begun to sell agriculture-based financial derivatives. The largest grain trading companies – Archer Daniels Midland, Bunge, Cargill, and Louis Dreyfus – are heavily engaged in the agricultural derivatives market (Murphy et al. 2012). Commodity trading firms tend to have an information advantage in the futures markets because they are often the first to know of impending crop shortages or other interruptions to agricultural trade (Meyer 2011).

The increased activity of financial actors after the passage of the CMFA in 2000 is reflected in the growth of agriculture-based derivatives. The total assets of financial speculators in agricultural commodity markets increased from US \$65 billion in 2006 to some US \$126 billion by early 2011 (Worthy 2011, 13). Similar to the late nineteenth century, fictitious or paper trade of future contracts has exceeded the physical trade of commodities by many times. In the US wheat future market, for example, financial speculators’ share of the trade increased from 12 % in the mid-1990s to 61 % in 2011 (Worthy 2011, 13). In the coffee market it is estimated that 1 kg coffee is traded 8,000 times over in speculative trade (Bregier Bush 2012, 40).

The main investors in these new agricultural commodity derivatives products are large-scale institutional investment funds that are seeking to gain exposure to commodity markets. Previously, the commodity markets in the USA restricted investment by banks, but the combined relaxation of banking regulations in the 1990s by the CFMA opened agricultural commodity investment and speculation to a whole new set of financial actors. Institutional investors include insurance companies, pension funds, mutual funds, hedge funds, sovereign wealth funds, and university and foundation endowments. These investment funds pool their resources, which enables them to expand and diversify their investment options while sharing transaction costs (Burch and Lawrence 2009, 272–3; Clapp 2014). Large-scale investors tend to make long-term passive investment decisions that do not require active management and do not always have detailed knowledge of their own investments. Some estimates put agricultural

investments of pension funds at around US \$320 billion, which is up significantly from the US \$6 billion they held in investments in this sector in 2002 (Buxton et al. 2012, 2).

Implications of a Reduced Role for the State

Whereas the state took a strong role in providing institutions and regulation at the intersection of the financial and agricultural sectors in the past, in recent decades we have seen private actors take a front seat in agricultural finance. Private financial investments linked to agriculture have direct consequences for the physical commodity markets – production, pricing, storage, and trade – and in turn these changes have important consequences for farmers, consumers, and the environment.

Agricultural financing is increasingly being directed to agribusinesses and other “industrial” targets. At the same time, industrial farming requires an increased amount of capital to fund day-to-day operations, medium-term credit for major equipment purchases, and long-term credit for land purchases and development. In turn, farmers are signatories to contracts linked to these companies for inputs, machineries, and lines of credit. While access to credit is said to lead to the adoption of agricultural technology and innovation, an additional implication of credit is debt. Farm debt is on the rise in Canada and the USA. Whereas some economists have suggested lack of credit leads to “poverty traps,” there are also indications that rising levels of debt are also a kind of “poverty trap.” The dependence on agribusiness for inputs and financing can restrict farmers’ ability to determine farming methods independently. Instead, agricultural finance is flowing to less risky corporations and private industry. Farm corporations (Magnan 2011) and large-scale land acquisitions (McMichael 2012) are linked directly to international capital and markets. The volatility of those markets is making it very difficult for independent farmers to operate.

The financialization in the food system has also been widely seen as a factor in volatile

commodity prices, as agricultural and food prices tend to react and follow trends in financial markets. As more money was invested in commodities after 2000, food prices began to climb rapidly. In the 2006–2008 period, average world prices for rice rose by 217 %, wheat by 136 %, maize by 125 %, and soybeans by 107 % (Cassara et al. 2008). Although some analysts see no link between rising financial speculation and food prices (Irwin and Sanders 2011), others are concerned that speculation rather than supply and demand is shaping prices (IATP 2012; Clapp 2009). There is now growing recognition among international organizations that speculation in agricultural commodity markets exacerbates price trends. The Bank for International Settlements noted, for example, that financialization influences commodity prices, especially in the short term (2011). Several UN reports have also recently come to a similar conclusion (De Schutter 2010; UNCTAD 2011). This volatility has important implications for consumers, especially in developing countries that are increasingly reliant on imported foodstuffs. As food prices rose in 2007–2008 and again in 2010–2011, hunger and social unrest became key concerns for governments.

Financialization in the agricultural sector has also been associated with the global land rush. Financial investors have been identified as major actors in the rise in large-scale agricultural land acquisitions (McMichael 2012; Daniel 2012). Paradoxically, financialization has made investments in agricultural production appear to be both more secure than financial investments and provides a way to minimize risks associated with volatile agricultural commodity prices. The development of new financial instruments has also made the involvement of financial investors in land much easier. Investors can invest financially in new kinds of land-based derivatives such as agricultural index funds and land index funds without taking the risk of owning the land directly and individually (Burch and Lawrence 2009; McMichael 2012). They acquire exposure to the productivity of the land through intermediaries such as large investment banks, and hedge funds (GRAIN 2008). Investor acquisition of

large tracts of land is associated with both social and ecological consequences. Smallholders are often displaced from lands that they have traditionally occupied and land is often cleared of forests for large-scale industrial production of both food and biofuel crops which have implications for climate change, soil erosion, and biodiversity loss (White et al. 2012; Cotula 2012).

Summary

The risks associated with agriculture remain. In fact, it could be argued with climate change that the risks of agriculture have increased with severe and unpredictable weather events. What has changed is that agricultural finance has shifted from state support for farmers to support for financial actors and international capital. The dominance of financial actors is expected to increase as capital has become essential to modern agricultural production. In turn this will encourage intensive agriculture that is reliant on chemical and petrochemical inputs over low-input sustainable practices.

The combination of a balanced public and private interest in agriculture provided a long period of commodity price stability during a good part of the twentieth century; however, recent price volatility has benefitted the speculators, but there is less evidence that producers have benefitted. The best that producers can hope for is to “hedge” against price swings often at considerable costs. For smallholders, alternative financing models such as microcredit are becoming more entangled in global financial markets (Aitken 2013), and there is little evidence that derivatives are beneficial (Breger Bush 2012).

Cross-References

- [Agricultural Cooperatives](#)
- [Farm Management](#)
- [Vertical Integration and Concentration in US Agriculture](#)

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Agriculture of the Middle

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Collective marketing; Disappearing middle;
Emerging markets; Farmers of the middle; Mid-
sized farms; Values-based food supply chains

Introduction

This entry focuses on ethical issues associated with the decline and potential renewal of mid-sized farms and ranches in the USA. The “disappearing middle” was first identified in the 1980s. Contemporary attention to the dynamics of this declining farm sector is accompanied by strategies for renewing an “agriculture of the middle.” A national agriculture of the middle initiative posits a threefold approach to rebuilding the middle sector of the US farm and ranch structure through new business and marketing strategies, particularly those identified as

“values-based” food supply chains, public policy changes, and research and education support.

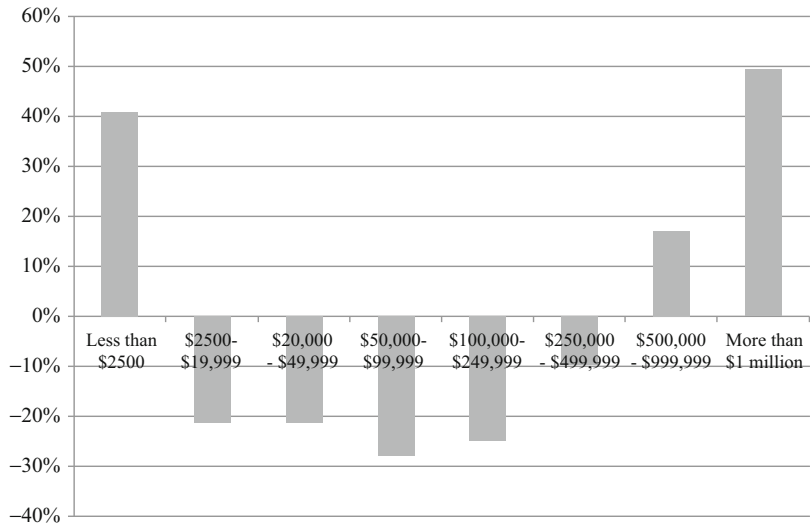
Ethical considerations focus on five areas: (1) diversity, resilience, competition, and opportunity in agriculture; (2) fairness and equity through the supply chain; (3) consumer choice and control; (4) environmental stewardship and ecological health; and (5) rural vitality.

The Disappearing Middle of the US Farm Structure

The origin of the concern about mid-sized farms is the “disappearing middle” hypothesis which arose in the early 1980s following the release of a US Department of Agriculture (USDA) report. This report clearly delineated three categories of farms: small (gross annual sales between \$5,000 and \$40,000 in 1981), large (sales over \$250,000), and medium sized (sales between \$40,000 and \$250,000). The hypothesis stated that mid-sized, full-time family farms in the USA were declining in numbers and in the percentage of total number of farms. The decline in competitiveness of medium-sized farms had many causes such as government policy, changing patterns in agriculture – especially shifts to large-scale farming based on wage labor – and global economic changes. More specifically the structural change was attributed to off-farm work and part-time farming, a decline in the impetus to hold onto family farms and an increase in the concentration and centralization of capital.

What experts found interesting at the time was the continuation of family farming despite all the elements working against it and despite the fact that classic family-type farms typically were not in the position to enjoy either the advantages of bigness or of smallness (Buttel and La Ramee 1991). Since the analysis in the 1980s was that large farms produced most of the food and were more efficient and that small farms did not need farm programs, the primary policy issue was how to help medium-sized farms. Those addressing this dilemma however, according to Strange, needed to recognize that size and scale are less important than fair competition, economic

Agriculture of the Middle, Fig. 1 Change in farm numbers by sales category, 1997–2007 (*All farm sales categories adjusted for inflation using the Consumer Price Index. Source: USDA 1997 and 2007 Census of Agriculture)



opportunity, growth and expansion, and the exercise of economic power (Strange 1988).

Farms and ranches that have historically formed the backbone of US agriculture continue to disappear. Categorized by sales (as in the 1980s), today's disappearing farms have gross annual sales between \$2,500 and \$500,000. This sector includes many "farming occupation" farms where the farm operator considers farming as his or her primary occupation. In contrast, large family and nonfamily farms with annual sales above \$500,000 and small part-time operations with annual sales below \$2,500 have increased. Figure 1 shows the national profile of these disappearing farms between 1997 and 2007.

Knowledgeable observers attribute many of the current difficulties these farms face to their increasing inability as individual enterprises to effectively compete in increasingly concentrated and globalized markets for generic agricultural commodities. For example, increased concentration in the food retail sector puts pressure on food processors to reduce their "transaction costs" by giving larger farmers market preference. It is cheaper for them to buy 10,000 hogs from one farmer than it is to buy 1,000 hogs from ten farmers.

At the same time, these farms often cannot market directly to consumers because they are too large (volume of product), not suitably

located geographically, or not producing products that can be directly marketed (Kirschenmann et al. 2008). Most of the farms and ranches that fall into this "market access gap" are in the \$50,000–\$500,000 sales category. The term "farms of the middle" will be used in this entry to describe this marketing middle. As mentioned above, historically farms of the middle have been the mainstays of the agricultural sector in many areas of the country. These farms and ranches remain important for a number of reasons. As of 2007, farms with sales between \$50,000 and \$500,000 constituted nearly 17 % of all farms and generated 22 % percent of total US farm sales. Farms of the middle are particularly important environmentally because they manage 40 % of all land in farms (USDA 2009). In addition these farms and related agribusinesses provide important economic contributions to many rural and peri-urban communities and represent a key component in maintaining a diverse, decentralized, and resilient structure of agriculture (Goldschmidt 1978; Strange 1988; Walker and Salt 2006).

Renewing an Agriculture of the Middle

Recognizing the need to create strategies that support farms of the middle, farmers, academics,

businesspersons, leaders of nonprofit organizations, and USDA employees convened a 22-member task force in 2003. The task force formulated a threefold approach to rebuilding this middle sector: (1) new business and marketing strategies, (2) public policy changes, and (3) research and education support. The following year, the task force became the national agriculture of the middle (AOTM) initiative. (For a detailed discussion of the national task force's approach and the composition of the AOTM initiative's coordinating committee, see the AOTM initiative's website at <http://www.agofthemiddle.org/>.)

The founders of the AOTM initiative believed that shifts occurring in the consumption sector of the food supply chain could provide significant marketing opportunities for renewing farms of the middle. AOTM initiative participants agreed that a broad approach and new business models were needed to revitalize this declining farm sector (Lyson et al. 2008). It was decided to engage the farms-of-the-middle dilemma through a food supply chain framework. A *food supply chain* is a network of food-related business enterprises in which food products move from production through consumption, including preproduction and post-consumption activities. Typical links in a supply chain are as follows: input suppliers, producers, processors, distributors, wholesalers, retailers, consumers, waste removal, and recycling. A *values-based food supply chain model* was adopted in which farms of the middle and other agri-food enterprises in the supply chain develop strategic business alliances based on particular values. The developers of the model drew from the business literature of other sectors such as automobile and consumer electronics. In these sectors, values-based supply chains are defined as long-term networks of partnering business enterprises working together to maximize value for the partners and end customers of a particular product or service (Stevenson and Pirog 2008). In the business literature, these long-term inter-organizational relationships are also called "strategic alliances," "integrated value systems," and "value-added partnerships" (Handfield and Nichols 2002).

In the agri-food arena, these supply chains (a) handle significant volumes of high-quality, differentiated food products; (b) treat farmers as strategic partners, not as interchangeable (and exploitable) input suppliers; (c) operate effectively at regional (multistate) levels; and (d) distribute rewards equitably among the strategic partners. The model places emphasis on *both* the values associated with the food *and* on the values associated with the business relationships within the food supply chain. The chains rely on organizational structures that achieve the necessary volumes of high-quality, differentiated food by aggregating product from multiple farms or ranches and may operate at a regional rather than local or national level. Scale is achieved through collective action rather than by increasing the size of individual farms. Another important characteristic of values-based food supply chains is an emphasis on shared vision, shared information (transparency), and shared decision making among the strategic partners. These represent commitments to the welfare of all partners in the supply chain, including fair profits, fair wages, and business agreements of appropriate extended duration. Also critical is the achievement of efficient supply chain management and logistics, including product marketing, aggregation, processing, distribution, and accounting. A result is that farmers in these strategic business alliances regularly function as "price negotiators," as distinct from "price setters" in direct marketing, and "price takers" in commodity marketing systems.

Emerging Market Opportunities

From the 1970s consumers have expressed increased interest in purchasing food that is unique and differentiated from conventional products. Products may be differentiated by attributes such as organic, grass fed, or regionally sourced (Painter 2008) or, following Europe's lead in the concept of fair trade, by emphasizing social justice and environmental responsibility (Jafee et al. 2004). Restaurants and cafeterias of public and private institutions such as healthcare facilities, schools, universities, and corporations are particularly receptive to these types of food

products, as are regional supermarkets and some national retail chains.

AOTM proponents recognize that farms of the middle have a potential comparative advantage in these emerging markets. Individual direct-marketing farms are not designed to produce the necessary volumes required for these new markets, and commodity farms are not designed to produce the necessary quality and differentiation. Farms of the middle, on the other hand, have both the capacity and flexibility to cooperate with each other and collaborate with other supply chain partners to respond to these expanding markets. In this context, the agriculture-of-the-middle strategy can best be understood as a “marketing middle” or as a third tier between direct and commodity marketing (Stevenson et al. 2011). It is important to point out that middle marketing strategies can productively involve farms and ranches that are both smaller and larger than the statistical sales range used above to define “farms of the middle.” In other words, this “marketing middle” is scale related but not scale determined.

Research and Policy

It was understood that these emerging enterprises had to be supported by relevant research and changed policies. Researchers associated with the AOTM initiative began in-depth case studies of several on-the-ground food supply chains that were testing new business and marketing models. (See the AOTM website for case studies of successful values-based food supply chains in the meat, dairy, grain, and vegetable sectors.) In summary, the research suggests (Stevenson et al. 2011) that successful values-based food supply chains are built on a foundation consisting of the three elements described earlier: (1) appropriate volumes of high-quality, differentiated products with engaging stories; (2) strategic business partnerships based on trusting, transparent relationships; and (3) effective supply chain management and logistics across the supply chain.

Researchers also discovered that to be successful, values-based food supply chains must overcome some unique challenges such as finding appropriate value chain partners; developing

mechanisms for supply chain decision making, transparency, and trust; and determining appropriate strategies for pricing products based on understanding the costs of production and other factors. They also must do what other businesses do in determining effective strategies for product differentiation, branding, and regional identity. They must acquire adequate capitalization, competent management, and effective leadership succession strategies; develop, monitor, and document consistent environmental standards throughout the supply chain; and develop effective quality control and logistical systems.

For over 10 years the research component of the AOTM initiative has been organized around a USDA-sponsored, multistate project composed of approximately 20 researchers from land-grant universities, other institutions, and research organizations. A full description of the current multistate project is available (USDA 2012), as is a high priority agriculture-of-the-middle research agenda developed through interviews of 50 researchers around the country (see Clancy and Lehrer 2010).

The need for policy change was also evident at the beginning of the AOTM initiative. Working through the National Sustainable Agriculture Coalition, language bringing attention to mid-scale farms was inserted into several USDA research and grant programs, and there has been more attention to regional farms and food systems across the Department of Agriculture.

Ethical Considerations

Ethical issues were raised about the “disappearing middle” in 1987 in a collection of essays titled “Is there a moral obligation to save the family farm?” (Comstock 1987). The greatest concerns were the loss of a way of life and an important American tradition, and the fact that many economic sectors tied to family farms would also suffer. The AOTM initiative was not begun out of ethical concerns, but rather out of market concerns. However, numerous ethical considerations have developed as the AOTM business models evolve. In addition, emerging

AOTM marketing strategies manifest new paradigms that have ethical considerations.

Values-based supply chains veer from the trajectory of US agriculture along practical as well as ethical dimensions. Much of the behavior in US agriculture since its industrialization in the twentieth century has been determined by an implicit goal – namely, maximum, efficient production for short-term economic return. The achievement of that goal was largely accomplished by pursuing three strategies: specialization, management simplification, and economies of scale. Operating by this single mandate, business enterprises (including farming) were encouraged to “externalize” related negative consequences such as, in the case of farming, soil erosion, contaminated water, and loss of biodiversity. If some unintended negative consequence resulted from the commitment to this singular goal, it was simply set aside and ignored. Consequently the predominant ethic that emerged among farmers who were forced to operate by this singular mandate was a utilitarian one – that is to “produce as much as possible, regardless of the cost” (Thompson 1995).

This approach has become increasingly dysfunctional in agriculture. Farms are biological organisms. Externalized costs ultimately can affect the biological functions of farms with negative economic results. For example, eroded soils ultimately require more fertilizer input to achieve maximum production, resulting in a negative effect on the economic performance of the farm as well as damage to the environment. Some leading economists and investment advisors have, in fact, begun to recognize the need to examine these unintended consequences. They suggest an alternative value set for the marketplace, not just in agriculture but in all aspects of the industrial economy. Porter and Kramer (2011), for example, have argued for a paradigm shift in the way business is conducted. They write that the USA has reached a point where social and environmental capitals have been degraded to an extent that they can no longer be externalized. Consequently a new kind of capitalism must now be considered, one that is based on what they call

“shared value.” The “new capitalism” incorporates societal and environmental needs (not just economic needs) into its business model, where environmental and social health is integral to economic health.

Such a shared value perspective, or ethic, especially relates to agriculture in that it emphasizes improved growing techniques and seeks to strengthen local and regional suppliers and other support institutions to increase farmers’ efficiency, yields, product quality, and overall sustainability. This leads to more revenue and profits for both farmers and the companies that buy from them (Porter and Kramer 2011). In a similar vein, continuing to manage our agriculture and food system in ways that marginalize labor and raw materials in order to reap huge profits farther up the food chain is no longer sustainable (Grantham 2011). Given the depletion of essential natural resources (especially fertilizers and water), unstable climates, and the erosion of soil, it now will be essential to invest in farms, soil, and other essential resources in order to achieve successful investment returns.

Five ethical considerations are embedded in the agriculture-of-the-middle ideal. The first two are elaborated in the above text and summarized here.

Fairness and Equity Throughout the Supply Chain

The fair treatment of supply chain partners is certainly a new ethical approach to business. Values-based supply chains place emphasis on such considerations as prices based on margins above farmers’ production costs and longer-term and stable contracts with producers, as well as other fairness- and equity-based transactions. Examples of these arrangements include the following: Shepard’s Grain, Country Natural Beef, and Red Tomato (see AOTM website, as noted above).

Consumer Choice and Control

In the AOTM model farmers and other supply chain partners are not the only beneficiaries. Preliminary research suggests that citizens can and do reap rewards from this new approach. AOTM

provides food buyers – whether the end consumer or intermediary purchaser – with additional options to act on their values. As with other food product differentiation frameworks such as organic and “local,” successful values-based supply chains provide customers and consumers with information regarding food qualities, farming practices, and business values through in-store messaging, on-farm visits, and user-friendly websites.

Three additional ethical dimensions of the agriculture-of-the-middle ideal concern the vitality and resilience of farms, communities, and the environment as elaborated here.

Diversity, Resilience, Competition, and Opportunity in Agriculture

Marketing clusters of farmers linked together based on shared values foster conditions that promote new ethical goals. First, these new clusters create economies of scale that can lessen the economic advantages of large farms over mid-sized farms with regard to transaction costs such as for transportation, accounting, or advertising. At the same time such clusters retain the advantage of smaller farms that have greater flexibility to adapt to changes, making them more resilient. For example, Country Natural Beef recently sought animal welfare certification because of increased consumer interest in certified meat.

As noted, concern for farms of the middle emanated from the dramatic decline in the number and vitality of these farms. While the initial impulse was largely market driven, the broader context embraced concern for the structure of agriculture as a whole. A farm structure comprised of only very large and very small farms is less diverse. Experts have shown that diversity in farm structure fosters resilience, competition, and opportunity. Farms of all sizes are needed – particularly those that can respond to the other value considerations articulated here. Finally, healthy competition by aggregations of midsize farms can offset trends toward consolidation and away from competition. As Strange (1988) suggested was necessary 25 years ago, farms of the middle can aggregate economic power to compete in the marketplace.

Environmental Stewardship and Ecological Health

The ideal AOTM farm should foster ecological resilience, although research shows no evidence at present that mid-scale farmers are more ethical than small- or large-scale producers in their approaches to stewardship and marketing (James and Hendrickson 2010; George 1991). Ecosystems are constantly changing and so the biological functions within them, including farming, constantly change. In fact, as resilience thinkers are now pointing out, all systems – economic, social, and biological – always go through adaptive cycles (Walker and Salt 2006). Given such changing environments, adaptive management rather than control management is critical to sustainability, and mid-sized farms integrated into values-based supply chains may demonstrate this flexibility.

Rural Vitality

In a review of 70 years of research on farming and rural community well-being, social scientists found consistent support for the argument that midsize, family-organized farms and ranches are strongly associated with positive measures of community economic development, quality of life, civic participation, and environmental outcomes (Lobao and Stofferahn 2008). Measures of community well-being included population and employment growth, family incomes, poverty rates, quality of schools and public services, and number of churches, civic organizations, and retail establishments. These positive associations suggest that farms of the middle tend to buy and sell locally and regionally, which increases the circulation of dollars within communities and regions. They also suggest that family members of farms of the middle provide support and leadership for community-based organizations such as schools, churches, and business associations.

Trends and Challenges

This new way of doing business in agriculture, as elsewhere, may eventually create a new culture

based on a “generative economy” that is dedicated to a flourishing of life for all individuals in a community, rather than an “extractive economy” which only seeks to extract as much individual wealth as possible from one’s social and ecological neighborhood. Within US agriculture there are promising trends such as the rise in interest in alternative and regional supply chains, networked systems for producers, and aggregating “food hubs” that target midsize farmers (Barham 2012). To date, most studied values-based chains are in fact hybrids in that one or more of the partners are “conventional.” For example, Archer Daniels Midland is a milling partner in the Shepherds Grain food supply chain. This underscores the contention that developing these new models is a complex and iterative process.

There are other challenges and unsolved problems. Conventional agriculture and traditional business supply chain models are firmly entrenched. Policy tools to leverage changes that would foster favorable conditions for these new models are so far inadequate. The logistics around pulling together and sustaining successful values-based supply chains are formidable and in the early stages of development.

It is not known whether the trends described in this entry will continue on a positive or negative trajectory. New surveys will show whether the rate of decline in mid-sized farms has eased, whether the numbers of values-based food supply chains continues to grow, and whether the demand for these types of products will increase. Purchases of organic foods continue to rise, but only a few organic enterprises have adopted a transparent business model. Markets very likely will grow as a result of the development of food hubs. They will probably grow if more attention is paid to regional food systems which operate at a larger scale than local food systems. They are more likely to contain numbers of mid-sized farms that can supply larger volumes of food and support more values-based supply chains (Ruhf and Clancy 2010).

The economics of the situation are also hard to predict. In a time of high commodity prices to farmers some will leave values-based supply chains, but it is unclear what will happen when

the prices inevitably drop. Energy prices may remain high enough that national and global food transport is reconsidered and more regional food supplies demanded.

Summary

There are five important ethical areas associated with the decline and potential renewal of “the middle” of the US farm structure. Renewal prospects are based on emerging markets for significant volumes of high-quality differentiated food products for which farms of the middle appear to have a comparative advantage if organized effectively. Values-based food supply chains offer promising business strategies and organizational structures to engage these new markets. Case studies demonstrate successful values-based supply chains in the meat, dairy, grain, and vegetable sectors. Public policy changes as well as research and education are needed to support these alternative business structures. There are challenges associated with the continued growth of values-based supply chains.

Cross-References

- [Farmer Types and Motivation](#)
- [Farms: Small Versus Large](#)
- [Local and Regional Food Systems](#)

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Alcohol Abstinence and Sobriety

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Synonyms

Alcoholism; Recovery; Temperance; Teetotalism

Introduction

In its most basic form, alcohol is the product of the natural fermentation of sugars by yeast. The first time a human ate fermented berries or honey is not known. What is known is that mead, which is fermented honey, is one of the oldest alcoholic beverages. Ale and wine also made very early appearances on the beverage scene. Alcohol has been both an ingredient in the cooking and preparation of food and an accompaniment or complement to food.

Alcohol abstinence is the categorical refusal to consume alcohol as a beverage or as an ingredient in food preparation.

Sobriety is a term that people use who have changed their consumption of and relation to alcohol. Most often, the term is used by those who previously had consumed alcohol in troubling, harmful, or unhealthy ways.

People abstain or practice sobriety for a variety of reasons. The most commonly cited

reasons for not drinking include concerns about the effects of alcohol on physical health, religious prescriptions against alcohol's consumption, and moral and social concerns about alcohol's effects on self and others. Alcohol is a disinhibitor. That is to say, alcohol lessens or lowers a person's inhibitions. She may find herself saying or doing things that she normally would not. It may cause her to take physical risks (health) and engage in behaviors that are regarded as sinful (religious) and that affect her character (moral) or damage her relations with others (social). While some of the reasons against the consumption of alcohol are free-standing and independent, in many cases that intertwine in complicated ways.

This entry first briefly examines the positions of five prevalent faith traditions (Islam, Hinduism, Judaism, Christianity, and Mormonism). Then the temperance and teetotaling movements that began in the early nineteenth century will be explored, highlighting the confluence of religious, moral, and scientific concerns about the consumption of alcohol. Temperance and teetotalism functioned on local and national levels. Some of the immediate- and longer-term effects of alcohol on health will be discussed. The World Health Organization has identified harmful alcohol use as a global problem. While the use of alcohol presents significant public health concerns, it is individuals who make the decision to change their relationship to alcohol. One may practice abstinence while others practice harm reduction or moderation. Some people choose sobriety, which may or may not involve abstinence. The final section explores some personal decisions individuals make about the consumption of "nonalcoholic" beverages and the use of alcohol in food preparation.

Religious Views of Alcohol Consumption

Islam

The use of alcohol and participation in gambling are two activities that are expressly prohibited in the Qur'an 5:90. In this passage, alcohol and gaming are identified as the handiwork of Satan that will cause a person to turn away from God.

Hinduism

There is no specific ban on the consumption of alcohol in the Hindu tradition. There is, however, a large recognition that alcohol can be powerful and significantly alter one's dharma, which is the upholding of the proper order of one's self, one's place in society, and the universe as a whole. The consumption of alcohol can upset that order and balance (Dasa 2007).

Judaism

Wine is used in many Jewish rituals and holidays. Some interpreters of the Talmud argue that the "tree" of knowledge from which Eve is purported to have eaten the apple was really a grapevine. It was the consumption of this fruit that led to the fall of Adam and Eve. For Judaism, alcohol can be both used as a holy beverage and used in times as celebration. Judaism also recognizes the destructive capacity of alcohol (Posner 2009).

Christianity

Like Judaism, wine plays a particular role in religious observance. In Catholic masses, for example, the wine is taken as the blood of Jesus Christ, the son of God. In other Christian denominations such as Lutheranism, the wine is a symbol of the blood of Jesus. As is the case with Judaism, wine and other alcoholic beverages have a great capacity for destructive behavior and suffering, some of which might be deemed sinful.

Mormonism

Jesus Christ of the Latter-Day Saints, more commonly known as Mormons, believe that God gave a commandment known as the "Word of Wisdom" to Joseph Smith in 1833. In the Doctrines and Covenants 89, this commandment affirms that humans' bodies are a precious gift from God and therefore the use of tobacco, alcohol, coffee, tea, and illegal drugs is prohibited.

While some of these religious traditions have an outright ban on the consumption of alcohol and others not, there is a common thread that alcohol's consumption might bring about sinful behavior or be very morally destructive to the individual and harmful to the social order. These concerns converged in the temperance

and teetotalism movements of the nineteenth century. This is also the first time that science- or medical-based concerns are woven into religious and moral arguments against the consumption of alcohol.

The Temperance and Teetotalism Movements of the Nineteenth Century

In the early nineteenth century in England and the United States, a significant and concerted effort began to curb the consumption of alcohol. The temperance movements advocated for the use of alcohol in moderation, while the teetotalism movement advocated for all abstinence from alcohol. The word, “teetotal” has very unclear origins and there is no agreed upon etymology. Over time, the distinction between temperance and teetotalism blurred, with the demand for abstinence ringing more loudly.

Temperance and teetotalism movements were often alliances between religious groups, social reformers, politicians, and physicians. The concern was the moral and physical hazards posed by the consumption of alcoholic beverages. At this time, “drunkenness” or being a “drunkard” was seen as a fundamental moral failing of an individual; a person was seen as lacking in will power or character. In England, there was a clear concern for the rapid increase of the availability of distilled spirits and gin houses, which boasted that one could be “drunk for a penny, dead drunk for a tuppence.” The concerns often focused on the wellbeing of women and children in homes of “drunkenness.” There were also class dimensions to the concerns about drinking: while the upper classes mostly consumed alcohol in their homes, working class people tended to congregate in public places. There was also concern about the economic implications of working people being drunkards that was coupled with political and social concerns of working people as citizens (Zieger 2002).

The temperance and teetotalism movements in the United States reflect the same sort of moral, physical, social, and political concerns about drunkenness. Drunkenness was seen as

a malady of an individual but as raising grave concerns for what is now called “public health.” Public health is concerned with the wellbeing and health of communities as opposed to the health of particular individuals.

The public health concerns were so graphically and persuasively made that the movements were able to garner enough political support to succeed in the creation of a national ban on the production, distribution, sale, and transportation of alcohol from 1920 to 1933. Ratified as the 18th Amendment to the United States Constitution and commonly referred to as “Prohibition,” it was repealed in the 21st Amendment to the Constitution in 1933.

While the Amendment banned the production, distribution, transportation, and sale of alcohol, it did not ban the possession or consumption of alcohol. Enterprising individuals quickly took advantage of this in many ways. Pharmacists were allowed to prescribe whiskey for various medical ailments. The number of pharmacists tripled in the state of New York, for example, during the Prohibition era. Since wine was used in many religious services, enrollments in churches and synagogues increased dramatically.

The repeal of Prohibition was due in large part to the public health crisis that had developed as a consequence of the unregulated (and illegal) production of alcohol. On average, 1,000 Americans died each year Prohibition was in effect (Okrent 2011).

The effects of alcohol’s consumption on the health of individuals and the community as a whole or social body are now the dominant way that concerns about alcohol are framed. Discussions are no longer limited to the local or national level but are happening on a global level.

Health Concerns About the Consumption of Alcohol

The Centers for Disease Control and Prevention in the United States (CDC 2012) chronicles many health concerns associated with the consumption of alcohol. Even drinking in moderation may present risks for people in certain populations

such as pregnant women, those who take certain prescription drugs, and those who have medical conditions such as diabetes. The most harmful effects follow from the excessive consumption of alcohol. Some of the effects are immediate. Since alcohol is a disinhibitor, people may engage in riskier physical and sexual behaviors that result in injury or harm to themselves or others. Alcohol poisoning is particularly dangerous; excessive consumption overwhelms the central nervous system and particularly acute cases result in death.

Certain chronic conditions can also develop over the course of longer-term consumption. The excessive consumption of alcohol over time contributes to neurological problems (stroke and dementia), psychiatric problems (anxiety and depression), liver problems, and cardiovascular problems.

The Global status report on alcohol and health published by the World Health Organization (WHO 2011) provides some of the most accurate statistics from over 100 individual country profiles. The document focuses on alcohol consumption, its consequences, and potential policy interventions on local, national, and global levels. Some of the findings include:

The harmful use of alcohol results in the death of 2.5 million people annually;

Nearly 4 % of all deaths globally are related to alcohol. Alcohol is a factor in deaths from injury, cancer, cardiovascular disease, and cirrhosis of the liver;

Globally, 6.2 % of all male deaths are related to alcohol compared to 1.1 % of women; and

One in five men in the Russian Federation and neighboring nations dies from alcohol-related causes.

In light of these realities, the WHO recommends that certain legal, political, and economic strategies be adopted. These include greater taxation of alcohol, reducing the number of venues where alcohol can be sold, raising the age limit for buying alcohol, and greater measures for reducing drunk driving. Additionally, the WHO recommends greater screening and assessment tools and policies for identifying individuals who are engaged in high-risk drinking and more effective treatment options for alcohol use

disorders. The issue of treatment raises the questions whether alcohol abstinence is necessary for addressing the health concerns identified by the WHO and whether the goal of treatment is abstinence or sobriety.

Relationship Between Alcohol Abstinence and Sobriety

There is no standard definition of sobriety, though this word is often used in the context of Alcoholics Anonymous (AA) and other programs related to recovery for addiction. Originally founded in the United States in the 1930s, AA now has a presence in 170 countries with a membership close to two million people. The book, *Alcoholics Anonymous* (2002, 4th edition), has sold more than 30 million copies and has been translated into more than 67 languages.

In the context of AA, sobriety involves total abstinence from alcohol. That is to say, abstinence is a necessary condition for sobriety. Abstinence is a commitment to not drinking, while many see sobriety as a commitment to a way of living.

While Alcoholics Anonymous has been one of the most recognized approaches to the treatment of alcoholism and its 12-step method is the preferred protocol in both in- and outpatient treatment programs, there are competing models that suggest or allow moderate or controlled consumption. A program such as Harm Reduction for Alcohol focuses on reducing the harms that follow from problem drinking. These moderation or harm reduction programs stress behavioral changes so that one is in a better position to make informed and safe choices about their alcohol use. Many choose moderation and then may later decide to choose abstinence. With these approaches, when a person no longer drinks in harmful or troubling ways, one has achieved sobriety (Anderson et al. 2010).

Regardless of how one defines sobriety and whether total abstinence is required, sobriety is seen as a personal choice and commitment. In other words, one comes to adopt a very circumspect and proactive stance toward her

consumption or nonconsumption of alcohol. A person who identifies as sober will maintain a very regulated relationship to alcohol. This is absolutely crucial for people who want to avoid a relapse. A relapse is commonly understood as consuming any alcohol when one was attempting abstinence or consuming alcohol in troubling or problem ways when one has been practicing moderation or harm reduction.

Decisions Individuals Make About “Nonalcoholic” Beverages and the Use of Alcohol in Food Preparation

For those practicing abstinence or sobriety, alcohol may seem ubiquitous and social occasions particularly vexing. It is vital that the presence of alcohol always be clearly indicated. Some people previously enjoyed the taste of alcohol and not just its effects. Others may have enjoyed the ritual of opening a bottle and pouring a glass of wine. For these people, consuming nonalcoholic beers and wines may bring them pleasure. “Nonalcoholic” in this context is containing less than 0.5 % (one half of 1 %) alcohol content. The choice to consume nonalcoholic beverages is personal. For some, it brings great pleasure, for some others it may trigger a desire for “the real thing,” and for some, even that very low percentage of alcohol may be seen as too much. For them, their abstinence is absolute.

Alcohol may be an important ingredient in many prepared foods. Wine and sherry are commonly used in many dishes, as are various “hard” liquors such as brandy and vodka. These alcoholic beverages are used for their complex flavors. Alcohol also appears in various extracts as well, such as vanilla. There is a common belief that alcohol “cooks off,” so that there is no alcohol content that remains.

For those faith traditions that prohibit the consumption of alcohol, this prohibition seemingly would extend to the use of alcohol in cooking. Those who are sober and practice abstinence would also tend to avoid the use of alcohol in cooking.

Studies, however, disprove the belief that alcohol “cooks off.” The New York State Office of Alcoholism and Substance Abuse Services (2013) cites the results of United States Department of Agriculture in conjunction with two universities found even after 2.5 h of baking, 5 % of alcohol remained. This is ten times higher than what is considered nonalcoholic. Given the high percentage of alcohol that remains, those who practice abstinence or sobriety may find themselves unknowing consuming alcohol. Regardless of the reasons one chooses alcohol abstinence or sobriety, disclosure of alcohol as an ingredient is important.

Summary

This entry has defined alcohol abstinence and sobriety and their relationship to each other. There are various sets of reasons why a person may choose not to consume any alcohol or choose to consume in a very intentional and well-informed manner. Religious reasons often focus on the possible sinful nature of the consumption of alcohol itself or the sinful behaviors that are caused by consuming alcohol. Health concerns are immediate and long term affecting individuals and the social body. The moral and social reasons for not drinking center on the harm or damage that can be done to one’s self and her relation to others. These sets of reasons converged in the temperance and teetotalism movements of the nineteenth century, culminating in the ban on the production, distribution, transportation, and sale in the United States from 1920 to 1933. Concerns about the consumption of alcohol are now a global matter, with the World Health Organization making recommendations directed at both individuals (earlier treatment and intervention) and at the social body through increased legislation and taxation. Abstinence and sobriety are choices made by individuals, and these choices require information about the presence of alcohol as beverages and ingredients in food preparation. A person practicing abstinence or sobriety may choose to consume nonalcoholic versions of beer and wine and use of alcohol in cooking.

Cross-References

- [Alcohol as Food and the Good Life](#)
- [Food Addiction](#)

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Alcohol as Food and the Good Life

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Synonyms

Alcohol and the good life; Alcohol and value

Introduction

Alcoholic beverages have been positively valued for many reasons. In the following entry these

positive reasons are explored within the historical context of the development of civilization. Human beings have produced and consumed alcoholic beverages ever since they changed from wandering bands of hunters and gatherers and settled down in established communities. Although alcohol can be found in the wild, it was the development of agriculture and pottery making that gave rise to the production of fermented alcoholic beverages such as mead, fruit wines, and beer. These beverages came to be valued for reasons beyond the pleasure of their taste and the effect they produced by inebriating their consumers. In antiquity they were used in religious ceremonies and valued as a medicine; they contributed to the development of social organization by encouraging trade; and they served as a kind of currency in early economies.

Later, with the invention of distillation and the spread of that technology throughout Europe in the Renaissance, distilled alcohol was initially identified as a vital life force or “spirit,” and distilled alcoholic beverages were prescribed for their medicinal value. In the nineteenth century with the invention of faster forms of transportation, the availability of a wide variety of wines and spirits promoted the values of gastronomy. In the twenty-first century, although the harmful effects of excessive alcohol consumption have been duly noted, their beneficial effects on health have also been acknowledged, particularly the benefit of the moderate drinking of red wine. Many contemporary societies continue to value alcoholic beverages in promoting conviviality, a value which was discovered in antiquity.

Early agricultural societies in Asia, Africa, Europe, and Central and South America all invented and consumed fermented alcoholic drinks. Several fermented drinks were made by the native peoples of Central America: the Aztecs fermented *pulque* from the agave plant, and in the Yucatan the Mayans made mead, flavoring it with the bark of the balché tree. In South America, the Incas brewed a beer made from the local grain, corn. In sub-Saharan Africa, palm wine and millet-brewed beer were indigenous, and rice wine was native to China and Japan (Gately 2008, pp. 95–101). There were exceptions:

aboriginal peoples in Australia and native peoples in North America did not produce and consume alcohol. There were also some societies that, for religious reasons, prohibited drinking alcoholic beverages. With the rise and spread of Islam, Middle Eastern societies that historically favored consuming alcohol turned against it. Certain religions in India also shunned alcohol.

Even societies that did allow drinking alcohol developed moral norms about when it was appropriate to consume these beverages. For example, modern Western societies made it unlawful for children to have access to alcohol. Other prohibitions arose because of the harmful effects of severe intoxication and the social disruption caused by public drunkenness. Nevertheless, alcohol was also recognized as contributing to “the good life” of people. It played a positive role in ceremonies of celebration such as wedding feasts, as well as occasions for mourning such as wakes. Sharing a “drink” was valued as a way to encourage conviviality among people, and it was even promoted as a catalyst that could spark ideas and lead to furthering intellectual pursuits. These positive social effects were noted in antiquity, and even today the cocktail party is valued as a means of bringing people together and getting them talking to each other. In the following sections of this entry, the economic, social, nutritional, medicinal, and religious values of alcohol as they relate to human well-being will be discussed. In addition, the aesthetic values of alcoholic beverages will also be considered.

The Social and Economic Values of Beer and Wine in the Fertile Crescent

Potable alcohol or ethanol occurs naturally when the skins of ripe fruit, such as apples or grapes, break and the yeasts that form on the fruits’ skins come in contact with the ripe interior and feed on the fruit sugar. This consuming action of the yeast is called fermentation and produces alcohol and carbon dioxide. Bees and other animals ingesting this alcohol-imbued fruit would have become tipsy, as would have our early human ancestors, when they consumed these fermenting fruits.

Eventually early peoples learned to gather fruits with high sugar content such as grapes, crush the fruit, and let the natural yeasts on the fruit skins convert the grape juice into wine.

With the establishment of settled communities, the rise of agriculture and the invention of pottery making and winemaking evolved as a practice in areas hospitable to grape growing. By 7000 BCE there was an established wine culture that cultivated grapes and made wine in the Zagros Mountains of Armenia and Iran (McGovern 2009, p. 82). In the next few millennia, a taste for wine from grapes spread throughout the Fertile Crescent. However, enjoying wine was an expensive taste, more so than quaffing the considerably cheaper local beer, the importance of which will be discussed below. Wine was a luxury good that was much appreciated by the wealthy and powerful, and the demand for this fermented drink led to an increase in trade throughout the region, particularly by shipping, since wine was cumbersome to transport by land.

Babylonian and Assyrian monarchs lavishly served imported wine at their royal feasts. An early Egyptian pharaoh, Scorpion I, was entombed in 3150 BCE with 700 jars of wine which were imported from distant lands at considerable expense (McGovern 2009, pp. 166–67). By the time of the pharaoh Tutankhamen, grapes were widely cultivated in Egypt, and the boy king was buried in 1322 BCE along with his alabaster wine cup and 26 local amphorae of red and white wines, each marked with the winemaker’s name and where the wine was made (Gately 2008, p. 8).

Whereas wine at first was a luxury good, the drink of the ordinary folk in the Fertile Crescent was beer. Early people had learned that cereals such as barley could be fermented to produce an alcoholic drink; however, the starch in the cereal first had to be converted into sugar, by a process known as malting. They accomplished this by first soaking the cereal grains in water until the grains started to germinate, thereby changing the starch in the grains into sugar. The germinated grains would then be dried and ground, and boiled water would be added. Natural airborne yeast eventually would have started the

fermentation process and created beer, or the fermentation process might have been induced sooner by adding yeast-imbued fruit (McGovern 2009, p. 68). Technological innovations in making beer soon developed, and beer brewing became widespread throughout the Middle East by 4000 BCE (Standage 2005, p. 10).

Beer was valued in the life of early peoples for many reasons. It had a profound effect on individuals' well-being in settled communities and contributed to the development and cohesiveness of those communities. First of all, with the rise of larger settlements, finding clean drinking water became a problem, one which hunters and gatherers who were constantly on the move did not have. Beer and other alcoholic drinks were not microbially tainted, as was often the case with the water. The fermentation process would have killed off the disease-producing organisms. With its relatively low alcohol level, beer was a safe drink to consume by these early village and city dwellers. It also would have provided needed nourishment, particularly B vitamins, since communities were usually dependent on local resources for sustenance (Standage 2005, p. 21).

Second, in early Mesopotamian societies, beer drinking contributed a greater sense of community and encouraged social bonding. People drank their beer in groups from a large shared vessel. Several people each with her or his own straw or hollow reed would drink from the same vessel. Straws were used in order to avoid the chaff and grain debris that floated on the surface of the beer. Because a group shared beer from the same container, beer drinking was a social occasion. This act of sharing a drink was a mark of social warmth and conviviality, and beer drinking promoted these values. This social beer drinking fostered a valued tradition that continues today: "having a drink" with someone is a sign of friendship, or at least it promotes the value of having people get together in a relaxed and friendly atmosphere (Standage 2005, p. 18).

Third, as Mesopotamian societies developed more sophisticated economies and undertook more complex tasks that required a large labor force, workers began to receive a "wage" that

included an allotment of beer. Thus, beer was instrumental in the development of their economies. Some of the earliest written texts are Sumerian records that list the various allotments of beer given out to workers for performing different tasks (Standage 2005, p. 35). As beer drinking was a widespread and popular practice, paying people in beer was a natural form of currency. The same practice of paying people with beer was also found in ancient Egypt. The workers who built the pyramids each received a regular allotment of bread and two jugs containing roughly a gallon of beer in payment for their services. There was also a sliding scale of beer payments. Officials in charge of these state projects earned considerably more beer than the workers they supervised (Standage 2005, p. 37).

In both Mesopotamian and Egyptian societies, beer was also prescribed as a medicine for a variety of illnesses. The most ancient text detailing the medicinal uses of beer is a Sumerian text from Nippur dating from 2100 BCE that contains an extended list of beer-based concoctions. Egyptian pharmacology was no less explicit in prescribing beer. The Ebers Papyrus from 1550 BCE contains many beer-based recipes for treating a host of ailments. In fact, Egyptians considered beer and bread as being synonymous with health and well-being. These products were also believed to be necessary in the afterlife and were regularly put in the tombs of the departed (Standage 2005, p. 38). Sumerian society also recognized the importance of beer in society and as necessary in the afterlife. The tomb of Queen Puabi in Ur, around 2500 BCE, contained her gold beer-drinking jug, bowl, and cup, as well as gold and silver straws with which to drink the beer (Gately 2008, p. 4).

Wine and Religion in Greece, Rome, and Medieval Europe

Perhaps the most important value ascribed to beer, wine, and fermented alcoholic drinks was a religious value. The fermentation process seemed magical to early people, and its effect on those who drank the beer or wine, the feeling

of euphoria associated with intoxication, they took to be a spiritual experience. Since they believed that these drinks had a divine origin, they also believed that religious ceremonies should include offerings of these divine potions (Standage 2005, p. 19). Egyptian mythology credits the god Osiris with creating both beer and wine. He was also the god of the underworld, having been killed and then revived, and thus seemed a natural divine sponsor of the grape vine which dies back in the autumn and revives in the spring. Egyptians believed that worshipers celebrating Osiris by eating bread and wine were consuming the transubstantiated body and blood of their god. Throughout the Fertile Crescent the gods were prayed to and worshiped by offerings and libations of beer or wine (Gately 2008, p. 7).

The Greeks were exclusively wine drinkers. They believed that wine was a divine gift, and it played a central role in their religion and what they considered civilized life. They scorned beer as being a barbarian tipple that had no role in the decorum of civilized living. Their god of wine, Dionysus, a semi-immortal offspring of Zeus, came to Greece from the Middle East bringing with him the vine and knowledge of winemaking. Dionysus bears some resemblance to the Egyptian god of wine, Osiris, because of his association with the autumnal death and springtime rebirth of the grapevine (Gately 2008, p. 17). Like religions in the Fertile Crescent, Greek religion also encouraged the offerings of libations of wine to the gods both in formal ceremonies and in family occasions for worship. A Greek city state or *polis* like Athens would sponsor public festivals where wine because of its religious association was offered to rich and poor alike (Gately 2008, p. 12). Because of the centrality of wine to their culture, the Greeks further developed the science of grape cultivation and the technology of vinification. In addition, Athens and other maritime Greek city states built up a very lucrative export trade in shipping amphorae of wine throughout the Mediterranean. Thus, wine also played an important role in Greek commercial life.

One of the main values associated with wine in Greek life was the role it played in the intellectual

life of the polis. The Greeks, particularly the Athenians, initiated the tradition of the *symposium*, which was a private feast and wine-drinking party for educated men. Women were excluded from participating in these events, as they were excluded from other aspects of Athenian public life. After dinner had been served, a dinner in which no wine was consumed, a person was selected as the master of the ceremony, a symposiarch, who would decide what the guests would do when the drinking commenced (Gately 2008, pp. 21–2). Then the wine was prepared. The Greeks drank their wine after first mixing it with water and flavoring ingredients, such as pine resin, in a large bowl called a *krater*. Guests were then offered a cup of the wine from this large vessel. This tradition of being served from the same *krater* was similar to the Mesopotamian tradition of people each using a straw to drink beer out of the same jar. For both societies it was a custom that stressed the social and sharing nature of the experience.

One of the things that might go on at a symposium was that the symposiarch might ask the guests to sing or recite poetry. Or the participants might be called upon to speak about music or medicine (Varriano 2010, p. 37). In his philosophical dialogue, *Symposium*, Plato recounts a symposium in which the guests each made speeches about the nature of romantic love. Elsewhere in his dialogues (e.g., *Phaedo*), Plato, in the voice of his character Socrates, takes a disparaging view of the role of food and drink in educating one's mind and pursuing knowledge. Indulging the appetites by drinking wine leads to sensuality and overcomes the rational faculty that leads to knowledge. In his dialogue, *Symposium*, Plato contrasts Socrates who leaves the drinking party sober with the other participants who end up befuddled by drink. In Book II of his dialogue, *Laws*, Plato is quite restrictive about who can consume wine.

However, Plato should not be taken as representative of Greek or Athenian views about the role of wine in cultural life. A countervailing tradition was that promoted by the Greek philosopher Epicurus. He believed that small gatherings of people at dinner parties where food and

wine could be savored would encourage the social virtues of friendship and lead to the cultivation of intellectual interests. Rejecting Plato's advocacy of the immaterial nature of human consciousness, Epicurus was a materialist who believed that the appetites employed in moderation, especially for food and drink, fed the life of the mind. Epicurus established a school in Athens, and he and his followers held a banquet on the twentieth day of every month to feast, to drink wine, and to celebrate their friendship and the pleasures of life. In contrast to the symposium in which wine was consumed only after eating, the Epicurean banquet allowed food and wine to be consumed together. Because of these regular monthly banquets and their central role in the Epicurean philosophical perspective about the good life, Epicurus and his followers became known as the "Twentyers" (Symons 2007). The Epicurean emphasis on the role of the banquet in social life influenced the development of the *convivium* feast in Roman society. (I discuss the Roman *convivium* below.)

The Greeks colonized Sicily and the southern part of the Italian peninsula, and they brought with them their love of wine by extensively planting grapes. With its rich volcanic soil and mountainous terrain, Italy was ideally suited for grape cultivation; the Greeks referred to the Italian peninsula as "oenotria" or the land of wine. Greek arts and literature exerted a strong influence on Roman society as it expanded throughout the Mediterranean, and the Romans adopted the Greek passion for wine even in their desire for military conquest. The Roman legionnaire was allotted a daily portion of wine. Not only was wine considered a healthy and uncontaminated drink, but it was believed to increase bodily strength and to assist in digesting food. It was also a very common anesthetic at a time when other remedies were unknown for treating the pain and strain of physical labor (Austin 1985, p. xvi).

From the days of the Roman republic, wine occupied a central place in the Roman household as opposed to beer which was considered the barbarian drink of northern Europe. In keeping with

their love of Greek culture, the Romans adapted the Greek symposium and Epicurean banquet, transforming them into a festive dinner party that they called a *convivium*. Unlike the symposium, the *convivium* was not exclusively for men; women and men ate together. However, like the Epicurean banquet, the *convivium* encouraged consuming wine and food together. Yet, the *convivium* reflected the stratified nature of Roman society in that the wine was not served from a common mixing bowl or krater. Instead, each person mixed her or his own wine, and not all the participants quaffed the same wine. The highest status individuals at the dinner were served the best wine; those of lower social importance were served lesser-quality wines. Former slaves (freedmen) were served the worst wine in the cellar (Standage 2005, p. 78). In addition, the *convivium* was not primarily an occasion for intellectual entertainment. Since it allowed including lower-class people and those with little education, it provided an opportunity for doing business. Wine encouraged the brokering of deals.

When Emperor Constantine made Christianity the state religion of the Roman Empire in 313 CE, Roman society came face to face with the Church's ambivalent attitude towards drinking wine. Like Judaism, Christianity held that wine played a central role in the religion. In the Christian *New Testament*, Jesus is described as performing miracles with wine. At the Seder which was his Last Supper, he refers to the wine he is drinking as his blood. In keeping with that pronouncement, Christians were expected to consume wine as part of the ceremony of the Eucharist. However, the secular consuming of wine posed a problem. As a religion focused on the afterlife and wary of the pursuits of the flesh, Christianity considered gluttony, which included the excessive drinking of wine, to be a deadly sin. In his *Pedagogia* written during the third century CE, St. Clement of Alexandria proposed that aside from the sacramental partaking of wine, women and young men should not drink wine but should stick to water. Only older men should be allowed to consume wine, and they should not try to cultivate an aesthetic interest in fine wine

but be content with whatever was offered to them or was available (Gately 2008, pp. 44–47).

Although the Church had reservations about consuming alcoholic beverages, during the Middle Ages alcohol was still highly valued for religious, medicinal, and mercantile reasons throughout Europe. Christian monks in their monasteries cultivated vines wherever grapes would grow. Although they made wine for use in the celebration of the Mass, they also made wine to serve at meals in the monastery's refectory. Since many hospitals were started by monks, wine was also produced to be used as a medicine. In fact, many of the great vineyards of Europe were originally established by monks. By the thirteenth century, trade increased throughout northern Europe spurred in part by the Hanseatic League. Two of the league's most successful items of trade were the new hops-brewed beer and wine which began to be widely produced and consumed as a popular beverage (Austin 1985, p. 95). A huge export trade in wine developed shipping wine from Bordeaux and other ports in western France to England and the Netherlands. However, alcohol consumption began to change in Europe due to the discovery of distillation.

The Distillation of Alcohol and the "Water of Life"

Up until the late Middle Ages, the only alcoholic drinks known were fermented beverages such as mead, wine, and beer. That was soon to change once European entrepreneurs became aware of the experiments with *distillation* that were being conducted by Muslim chemists. The word "alcohol" is of Arabic origin and is derived from the word "kohl" which referred to the dark eye cosmetic used by the ancient Egyptians. By experimenting with the process of making kohl, and by using a vessel with a long spout called an *alembic*, Muslim chemists discovered that one could produce an unusual liquid from heating wine (Gately 2008, p. 72). Since alcohol has a lower boiling point than water, by heating wine or any fermented liquid in an alembic, or

vessel with a spout, or one connected to a copper coil, one could collect the alcohol vapors and condense them into a liquid with some surprising properties. Since Islam prohibited the drinking of wine or alcoholic beverages, Muslim chemists considered the distillation of wine to be only a curious scientific discovery.

The Italians, however, realized the significance of this discovery, and in the twelfth century CE, apothecaries in Salerno began writing about a new distilled liquid (*aqua ardens*, so-called because it could catch fire) and proposing it as a medicinal drink. By 1320 CE an enterprising merchant in Modena was distilling large quantities of alcohol for sale not only as a medicine but also as an invigorating beverage that was now referred to as *aqua vitae* or "water of life." It was realized that *aqua vitae* was the causally significant ingredient in wine or beer, and by itself in sufficient quantity, it could produce major changes in human behavior. Venice soon became a major port for distributing this potent beverage to the rest of Europe; however, before long the technology for producing alcohol had quickly spread throughout the continent (Forbes 1948, pp. 87–95).

Because it was more potent than wine or beer, distilled alcohol came to have its own value as the "water of life." The name, *aqua vitae*, was adapted into a number of European languages: the French called the distillation of fermented fruit beverages "eau de vie," and the Scandinavians distilled a spirit they called "akvavit." Even the word "whiskey" is derived from the Gaelic expression for "water of life." Alcohol was credited with being the water of life because it was believed to be a *spirit* (another name commonly used for alcohol) or a substance that had a major animating effect on the body and could induce radical changes in consciousness.

In his book *The Passions of the Soul* (1649), René Descartes proposed that human emotions were not produced by someone actively willing them, but they were passively brought about by specific agents in the body. Descartes referred to these agents as "animal spirits." With his mechanical view about the operations of the body, Descartes thought that these animal spirits

hydraulically affected the brain which in turn, according to his interactionist theory of mental-corporeal causation, produced changes in human consciousness. His views about these “spirits” producing emotional changes in human beings were probably influenced by the widespread use at the time of distilled alcoholic drinks which could make imbibers become loud and boisterous, or mean and aggressive, or even morose. Because of this respect for alcohol as an agent that could affect the mind and the body, there existed a popular belief that alcohol was a potent elixir that could not only cure illness but revive people who had collapsed in shock. In the pharmacopeia of the time, it was valued accordingly. Even today there still lingers a holdover of this Renaissance belief in the medicinal power of distilled spirits. Although there is no contemporary medical evidence to support the view, some people still believe that if someone has collapsed due to a shocking experience, the remedy should be to get that individual to drink a glass of brandy.

Distilled beverages also had a profound effect on the late Renaissance emergence of European commerce and the future course of European colonial expansion. Spirits could be distilled not only from wine and beer but also from sugarcane or molasses (rum) and potatoes (vodka or schnapps), as well as from many other sources. One of the evil results was the African slave trade that originally depended on using spirits to buy enslaved African people to work in the sugarcane fields of the Caribbean islands. A lot of the sugar that was produced was converted into molasses which then was distilled into rum and sold in Europe or used to buy more slaves in Africa. However, by the eighteenth century, a positive effect resulting from distillation was that farmers in the Americas and Europe that had previously had trouble getting their perishable produce to market could now take their grains or potatoes and make a spirit from them. For example, whiskey distilled from corn, rye, or barley was much easier to transport to market, and it would not perish. In fact, it would improve with age. Because there was a ready demand for spirits,

they could even be used as a kind of currency (Gately 2008, p. 216). Spirits could also be added to wine, as they were to port and sherry, which made these fortified wines less susceptible to spoilage when transported by ship.

The Aesthetic Value of Alcohol and the Rise of Gastronomy

The eighteenth century saw a significant rise in the philosophical interest in what we now would refer to as aesthetic experience. Because the term “aesthetic” did not gain currency until the nineteenth century, the common philosophical term for the appreciative experience of art and nature was “taste.” Although many philosophers distinguished the critical taste for art and music from the gustatory experience of taste involved in alimentation, several philosophers recognized the metaphorical connection between the critical taste for art and the literal taste of gustation. These philosophers used the discriminating and appreciative tasting of fine wines as examples of how literal taste could lead to the development of critical taste. For example, in his essay “Of the Standard of Taste” (1757), David Hume used the example of a discriminative tasting of wines to explain his notion of “delicacy of imagination” which he thought was a requirement for an individual having sound critical taste. He thought that to be a good judge of the quality of wine, one had to be able to discern the minute constituents of the wine that added to or detracted from its being a good wine (Hume 1987). Voltaire, in “An Essay on Taste” (1757), also used the example of being able to discriminate the subtle qualities that give a wine its distinctive character as a sign of someone possessing good taste (Voltaire 1970).

Nevertheless, there were philosophers who opposed the view that wine could be an object of critical interest. In his influential work on aesthetics, *Critique of Judgment* (1790), Immanuel Kant argued that food and wine could not be objects of aesthetic interest. They were merely objects of personal preference and could not sustain the imaginative interest that works of art or

objects of natural beauty could (Kant 1987). However, Hume's and Voltaire's use of such examples shows a developing respect for fine wines as objects of critical appreciation, a respect that was also reflected in the interests of the emerging middle classes in Europe and elsewhere.

At the end of the eighteenth century and beginning of the nineteenth century, several significant changes took place in European culture that contributed to this developing critical interest in fine wine. Whereas in earlier times lavish dining and the consuming of expensive wines had been restricted to the palaces of the aristocracy, after the French Revolution restaurants proliferated which provided innovative food and drink to anyone with the resources to pay for these meals. With the appearance of restaurants, there also emerged an aesthetic interest in fine dining that came to be referred to as "gastronomy."

One of the popularizers of this aesthetic valuing of sophisticated dining and drinking of good wines was Jean Anthelme Brillat-Savarin, who published a widely read volume, *The Physiology of Taste* (1825). Brillat-Savarin championed "the pleasures of the table" which included the contemplative appreciation of fine wine (Brillat-Savarin 1978). He championed a "transcendental gastronomy" that challenged Kant's view that wine could only be a personal pleasure, one immediately sensed and not affording any opportunity for imaginative and contemplative engagement. Brillat-Savarin proposed a more sophisticated account of how we sense gustatory objects like wine, and he stressed the extended temporal progression involved in swallowing what we consume. His account of the extended nature of tasting allowed for the imaginative aesthetic engagement with what we were consuming. In accordance with his popular views on contemplative tasting, wine, beer, and other alcoholic beverages began to be recognized as beverages worthy of aesthetic attention.

With the spread of the railways in the nineteenth century, it now became much easier to obtain excellent wines from distant places. This easier availability of these wines and produce in

the capitals of Europe further promoted the aesthetic interest in wines and other alcoholic beverages. This greater appreciative interest in wine, beer, and distilled spirits has continued to grow in the twenty-first century. There is now a global market for, as well as interest in, these products. Wonderful wines are now made in South Africa, New Zealand, Australia, and countries in North and South America. Distinctive beers are brewed all over the world, and Japanese whiskey is no less excellent than the best scotch and bourbon.

Although Kant resisted accepting wine or food as being potential objects of aesthetic interest, he did realize that small dinner parties at which wine or spirits were served were very valuable social occasions. These dinner parties brought people together in a relaxed and convivial setting that allowed them to exchange and share ideas (Kant 2006; Cohen 2008). Just as the Greek symposium and the Epicurean banquet attempted to promote a convivial exchange of ideas, so one can take Kant as urging the value of similar social meetings. He also recognized the positive role that alcoholic beverages could play in these social gatherings. In the twenty-first century, another philosopher, Roger Scruton, has called for the reviving of something like the symposium tradition in which people would get together for a meal and to savor wine. He believes this meeting of minds aided by the consuming of wines of interest would also promote and further intellectual exchange (Scruton 2009).

Summary

From their creation at the dawn of human communal life, alcoholic beverages have been recognized as valuable for a variety of reasons. Many cultures valued them for religious reasons, finding in them a mystical and animating power and consequently using them in religious ceremonies. Fermented drinks like beer and wine served to promote social and economic development. As early forms of medicine, they were used to try to cure the sick and to ease the pain of those who

labored. They were valued as aesthetic objects in antiquity, and today they attract an even broader aesthetic interest. Finally, their fostering of a convivial relationship among people, bringing people together to share ideas, continues to be recognized as an important and valuable social catalyst in contemporary life.

Cross-References

- [Brillat-Savarin and Food](#)
- [Christianity and Food](#)
- [Epicureanism and Food](#)
- [Islam and Food](#)
- [Plato and Food](#)

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Alimentary Delinquency

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Synonyms

Artiste provocateur; Food terrorism; Neophobia, visual culture; Pica; Taboo

Introduction

Alimentary delinquency, a term originally coined by French sociologist Pierre Aimez, will be used here to designate a wide range of eating practices that are generally considered by society at large as aberrant and as going beyond the normal, comprising a number of disturbed ingestion practices that are widely considered as taboo and/or excessive: ingestion of nonfood (nonnutritive) items or of excessive amounts of food, doing things with food that should not be done, and forcing/duping people into eating something they would not normally eat. Although evidence of alimentary delinquency as described dates back to antiquity, it will be discussed here as specific to the modern, contemporary period, as a symptom of “gastro-anomy,” a term coined by Claude Fischler to describe the consequences on eating and food-making practices of the bio-cultural crisis experienced by modern eaters. Fischler and other sociologists and historians of food maintain that eating practices in modern societies have undergone a complex transformation in the shift from agrarian to post-agrarian societies, which in turn has engendered confusion and conflict surrounding eating practices. Alimentary delinquency is thus a manifestation of this bio-cultural crisis and will be outlined here in four categories: alimentary delinquency as the province of eating practices from other cultures, notably as a prominent discourse in travel literature; involuntary alimentary delinquency, recognized by mental healthcare professionals as pica,

where subjects respond to oral cravings and drives beyond their ability to control; wilful acts of alimentary delinquency especially as they are presented in visual, graphic, and plastic art forms that are designed to provoke, disturb, and shock; and alimentary delinquency in the stricter legalistic sense, in cases of negligent or wilful food contamination and adulteration.

Alimentary delinquency as such lies at the crossroads of what can be eaten and what should be eaten and is central to making sense of our physical existence. More than the actual incidence of aberrant eating practices which in themselves are relatively rare, it will be maintained that the impact and significance of alimentary delinquency lies mainly in the collective imaginary: in the many conflicts that it exposes within conceptual issues related to the health and nutritional discourse around traditional food and eating practices; as well as in the “omnivore’s paradox” that pulls modern eaters between neophobia and neophilia.

► **Cannibalism** as well as other forms of disturbed eating, such as ► **eating disorders**, are indeed forms of alimentary delinquency and are dealt with in separate entries.

Alimentary Delinquency and the Food of Others

Travel literature through the ages, as well as more recent cookery and travel programs on television and the internet, places a particular critical emphasis on the eating customs of other societies. Although such accounts may very readily celebrate the diversity of culinary traditions around the world, they may just as readily be part of another tradition of being condescending to and denigrating other cultures for the food they eat and how they consume it, indicating that they may not have attained the levels of sophistication and civilization necessary for proper dining. Just as cannibalism has been used by various human groups to denounce others as fearful barbarians, eating habits of certain societies are described as alimentary delinquency to bolster descriptions of these societies as barbaric and uncivilized or as

simply peculiar. Although it is impossible to stand outside of one’s culture and speak about appropriate and inappropriate foods, this has never stopped chroniclers visiting other cultures from expressing a full range of reactions to the alimentary delinquency perceived in other cuisines, ranging from curiosity, amusement, and incredulity to shock, disgust, and outright moral outrage.

Although amusement coupled with mild ridicule may accompany stereotypical accounts of the French and frog legs and snails, the Congolese and termites, or the Scottish eating haggis, this amusement can quickly turn to more severe condemnation when questions of cruelty or morality arise in equally stereotypical accounts of Koreans eating dog, Chinese eating live monkeys, or even Europeans eating horsemeat. The foods that are commonly put under the spotlight in such chronicles fall under two categories: those for which the gustatory experience itself is noteworthy –for example, *surströmming*, fermented Baltic herring in Sweden that results in a primeval stew, or even very pungent cheeses from areas of central Europe. A second category would comprise zoophagic foods in which little effort has been made to camouflage the animal nature of the foods presented. The inherent cruelty of the cultures visited is often cited in many travelogues especially in places where live food – from fish to primates – is consumed. Such foods that mimic life and meals that present the spectacle of life and death remind the visitor of the original state of food and also of the eater’s very mortality. Needless to say, the shock of witnessing and participating in such meals is much more potent than any consideration of taste. Consider the overwhelmed reaction of Richard Gordon Smith in his 1907 account of being presented a live yet carved fish to eat in Japan by a proud local chef. These accounts focus relentlessly on meals that force the diner to confront and to contemplate the sacrifice made and the fact that life continues through the death of other beings – a fact that modern societies go to great lengths to obscure and dissimulate through preparations that conceal the animal nature of meat and the virtual elimination of offal and any

parts of the animal that could suggest the animality and corporeality of both cook and eater. A further form of outrage may indeed be of a moral nature and focus on the ingestion of foods considered as taboo or forbidden especially, but not exclusively, on religious grounds, where the simple mention of a society's diet can be used to condemn entire cultures as sinful and immoral. Numerous accounts have been written, as detailed, for example, by Eric Dursteler, describing the moral indignation of travelers from Muslim or Judaic cultures that describe a cuisine of "infidels," whose table manners are questionable and who sustain themselves on abominable forbidden foods. The Internet teems with reports, testimonies, and, of course, photographs of all that modern travelers, especially the vicarious ones, may find bizarre, cruel, and stomach-turning from all corners of the earth.

Involuntary Alimentary Delinquency: Pica

Pica, from the Latin word for the omnivorous magpie, is classified in the *Diagnostic and Statistical Manual IV* of the American Psychiatric Association as a psychological disorder in which the subject repeatedly and obsessively craves and ingests nonnutritive substances. Subtypes of pica are virtually innumerable and are characterized by the substance consumed, ranging from dirt to clay, plastic, glass, feces, hair, etc. It has been difficult to assess the prevalence of pica, but studies show that it occurs more commonly in women and children, and very often in conjunction with another psychological disorder; for example, it is common in autistic subjects. It is only considered as inappropriate behavior when it occurs beyond the developmental level of the individual. Therefore an infant mouthing a stone will not raise as much concern as a woman who incessantly eats sand or sofa cushions. Given that pica occurs mainly in women and children one common explanation for the phenomenon is that it is the result of nutritional deficiency. Although the ingestion of plastic and other synthetic materials is not

uncommon in pica, organic substances such as clay, dirt, hair, nails, etc. are far more prevalent, suggesting that pica might not only be a sign of developmental disability but that it might indeed be indicative of an attempt by the subject to compensate for lacking nutrients. The ingestion of nonnutritive substances is only considered as a disorder when it occurs outside of culturally sanctioned practices. Many of these culturally sanctioned practices occur among women and especially pregnant women who practice various forms of geophagia, i.e., earth eating, in places all over the globe. Local studies have been carried out among women, and especially pregnant women, who ingest clay, stones, and soil in places as far from each other as Kenya, where women practice odowa, the ingestion of soft stones, to Saudi Arabia, where studies found pregnant women who consumed ice, plaster, and paper, to the state of Georgia in the United States, where pregnant women have long ingested kaolin, or white clay. Such studies explain that pica in these cases is an attempt to ingest vitamins and minerals lacking due to the surplus nutritional demands of pregnancy and, perhaps, the added stress of pregnancy. Women who practice geophagia when pregnant are shown to have lower hemoglobin levels and pica is often explained as a means to compensate for this deficiency. Such cases of pica can obviously be associated with the commonly evoked dietary "cravings" of pregnant women, which can at times be classified as alimentary delinquency.

Non-culturally sanctioned pica more clearly enters the realm of alimentary delinquency. Incidences of pica comprise the full range of all that could be possibly ingested and are explained by psychologists as being related to developmental difficulties. The variety of items consumed in such cases seems only to be limited by one's capacity to ingest them and, even so, many of the items consumed are simply impossible to digest. Subjects suffering from pica are obviously doing great harm to their bodies. Pica, much like bulimia, invariably takes place in private away from the shame and condemnation of others. Treatment for pica focuses on behavior modification, from aversion therapy to positive

reinforcement therapy, exposure therapy, and discrimination training.

Although the incidence of pica is relatively rare and could be aligned with other “shameful” eating disorders which mainly affect women such as bulimia and anorexia nervosa, the very notion of ingesting nonfood substances is intriguing to the general public and has been a typical feature of circus sideshow acts. The spectacular side of pica becomes more apparent when considering the 2012 reality TV series entitled *My Strange Addiction* on The Learning Channel, which makes a public spectacle of pica by featuring entire episodes devoted to one person’s particular and peculiar variety of pica – from the more classical varieties in which organic matters such as clay, dirt, sand, or hair is ingested to far more disturbing cases in which subjects ingest plastic, tires, sofa cushions, cat food, and mothballs, for example. The subjects are almost exclusively female and each episode typically includes segments in which the featured eater demonstrates how and in what circumstances they eat their preferred “food” – usually in small bites and always in secret. They are also given the opportunity to explain the gratification they derive from satisfying their cravings. Texture is often evoked in terms of either softness or crunchiness. Each episode also features a moment of confession where the subject reveals her craving to an incredulous friend or family member or a medical professional. Emphasis is placed on the pleasure derived from pica and the program rarely presents the subjects as suffering psychologically from their cravings. As such the program itself serves as a form of exposure therapy in that the subjects are confronting their craving in a very public fashion and they are being clearly informed of the health risks that they face.

Willful Alimentary Delinquency: Defying Taboo and the *Artiste Provocateur*

As much as the very real cases of pica require the attention of medical professionals and mental health practitioners, alimentary delinquency, because it is positioned at the crossroads of

what can be eaten and what should be eaten, captures the imaginaries of observers and spectators and thrives in very visible forms, as demonstrated by the visual attention given to pica in *My Strange Addiction*.

Artworks and other social acts based on food and eating practices can be divided into two broad schools: the well-behaved and the badly behaved. Well-behaved food art is concerned with harmony in the process of creation of food, the *mise-en-scène* of dishes themselves, and the staging of elaborate meals, often with real eating subjects. The work of Japanese food artist Ayako Suwa is of note in this domain, with the success of her touring pop-up “guerilla” restaurants/exhibits in international capitals, which place diners in unique stylized settings where they are presented with a series of bite-sized delicacies fashioned as *objets d’art*. We can also look at the harmonious tradition in the use of food displayed in such films as *Babette’s Feast* (Gabriel Axel, Denmark, 1987), *Julie and Julia* (Nora Ephron, USA, 2009), *Eat, Drink, Man, Woman* (Ang Lee, China 1994), or *Like Water for Chocolate* (Alfonso Arau, Mexico, 1992) to name but a few, where good food that is aesthetically presented is linked to tradition, heritage, and the positive moral bearings of those who prepare and eat the food. These notions can also be extended to many cookbooks and televised cookery programs that aim to teach people to be mindful cooks and appreciative eaters of good, well-presented food, emphasizing the visual more than any other sensorial organ involved in eating.

While “well-behaved” art places a premium on “gastro-porn” and the elegant *mise-en-scène* of food in enticing contexts, it is certainly in the “badly behaved” area where alimentary delinquency is prevalent as a form of artistic expression and manifests itself in quite different ways. More concerned with the process of ingestion itself and the bodily experience of eating, alimentary delinquency emphasizes corporeality and the link between the ingestion of food and other acts performed with/upon the body’s orifices. Foods featured in acts of alimentary delinquency are also intended to shock and disgust and are more often than not raw, viscous, and zoophagic in nature.

The early nineteenth-century European avant-garde Futurists and Surrealists began embracing the disturbing potential of food in numerous works and public pranks, notably Filippo Marinetti's *The Futurist Cookbook*. The *Eat Art* works of German artist Daniel Spoerri that appeared throughout the 1960s continued and expanded this trend, displaying unfinished dinners and messy kitchen counter and table tops as framed works of art, staging acts of auto-cannibalism, and projecting playful, yet negative, anti-aesthetic resonances around food and eating. Judy Chicago's widely acclaimed touring exhibit entitled *The Dinner Party* (1974–1979) featured multicolored dishes painted with highly stylized depictions of food-like vulvas which were openly displayed in homage to prominent women in history, pointing at the same time to the complexity of woman's problematic roles as both cooks and eaters.

While Spoerri toyed with cannibalism, the ultimate culinary act of savagery, other performance artists have gone further, willingly submitting their bodies for the purposes of creating such spectacles. In 2003, the Enema Collective in Havana made blood sausages according to a traditional Cuban recipe using blood drawn from the collective's members and displayed the sausages as artworks at exhibits and other events. Although these sausages were made to be contemplated and not consumed, art did meet reality in a similar yet unrelated incident, when in 2006 two members of the German Air Force were discovered in a human blood sausage making operation in which they collected the blood of fellow officers and prepared the sausages also according to a traditional recipe of one of their grandmothers.

More recently, Japanese asexual Mao Sugiyama had his penis and testicles surgically removed and offered to cook and serve them to five bidders at an event organized in Tokyo in 2012. The event was also attended with much fanfare by 70 other guests/spectators who were served beef or crocodile dinners and, of course, availed the opportunity to watch the five lucky guests dine on Sugiyama's genital delicacy, prepared with the advice of leading Tokyo chefs. The event was entirely staged with the same

level of decorum and *mise-en-scène* as a performance meal by the aforementioned "well-behaved" Ayako Suwa. Eventually, obscenity charges were brought against Sugiyama for exhibiting pictures of his severed penis and not for the staged act of cannibalism, designed, according to the artist, to raise awareness about the existence and turmoil of asexuals.

Filmmakers have also been among the principal exploiters of alimentary delinquency, and the list of well-behaved films mentioned above can be complemented by an even longer list of badly behaved films which, like other works of art that feature alimentary delinquency, are generally considered as aggressive and can be seen as mounting direct attacks against the conventional comforts and pleasures associated not only with consuming food but also with consuming art. In this light, one can consider the actor Divine's "spatiotemporal" ingurgitation of dog excrement in the epilogue of John Waters' 1972 *Pink Flamingos*. Similar types of shocking and bizarre scenes and themes around food and eating are featured, for example, in Marco Ferreri's *La Grande Bouffe*, Luis Buñuel's *Phantom of Liberty*, Dusan Makavejev's *Sweet Movie*, Pier Paolo Pasolini's *Salò o le 120 Giornate di Sodoma*, or Peter Greenaway's *The Cook, the Thief, His Wife and Her Lover*, to name but a few. To this list of "art" films can also be added a considerable number of American and Italian horror films of the 1970s and 1980s that feature repeated acts of cannibalism. As such, alimentary delinquency has flourished in filmic forms of the lowest and highest statures in terms of cultural esteem.

The spectacle that alimentary delinquency offers is graphic and frontal and what matters most is display, directed at the spectator. Such exhibits and acts elicit disgust and shock from observers and spectators, and, like pica, dissect the act of eating from any nourishing function. Their primary effect or purpose is not to provide entertainment or aesthetic pleasure, but to disturb and to jolt, striking out at the passivity of the viewer. Such works are often praised and condemned for the very same reasons; they are grotesque, destructive, chaotic, and repulsive.

Alimentary Delinquency as Crime

Another type of alimentary delinquency that must finally be considered occurs in a stricter ethical and legal sense in the form of scandals and scares that arise from mass food contaminations and the incorrect labeling of foods purchased in supermarkets or restaurants. Food scares are centered around a wide range of potential hazards all along the food supply chain that can result in a host of food-borne illnesses of varying degrees of seriousness. It is widely believed that many incidents of contamination – in baby milk formulas, salmonella or *E. coli* outbreaks, for example – are attributable to negligent industrialized food processing methods, and questions are often posed by investigative journalists regarding the responsibility of the dominant food corporations. Attention drawn, for example, to the potential legal culpability of food producers who, perhaps knowingly, alter the contents of their products or insert “addictive” levels of sugars and trans fats in their products. While many indignant members of the public suspect industrial food giants of wanton negligence, establishing proof of intent and initiating change in certain production processes have been difficult. Officials or groups attempting to intervene by outlawing certain practices in the name of public health and/or consumer protection, using many of the same arguments that were used successfully against tobacco companies, face daunting legal challenges. The attempt made by New York Mayor Michael Bloomberg in 2013 to ban the sale of sugar-laden soft drinks in “super-sized” recipients in an effort to ward off upwardly trending obesity and its subsequent burden on healthcare systems was struck down by the courts in the name of civil liberties. Such incidents are coupled with other 2013 scandals involving the undisclosed yet widespread substitution of cheap horsemeat for beef in frozen meals sold in North America and Europe and the use of pork sold as reindeer meat in Scandinavia. Although there was no health risk involved in these inscrutable and deceptive practices, they have prompted consumer watchdog groups to increase demands on government agencies for greater vigilance and accountability in all steps of the industrial food chain.

Although actual cases of criminal mass food adulteration have been rare – the most prominent case occurring in Oregon in 1984 where 751 people became ill after a religious cult infected area salad bars with salmonella – the potential of “food terrorism” is considered as a real and current threat by national and world health organizations. However, the greatest threat posed by food terrorism is not so much the widespread physical harm that could be caused to the population, as much as the potential economic damage incurred, as reactions to contaminated foods are immediate and result in speedy recalls that in turn have a long-term financial impact on food producers and retailers. Fortunately, actual incidents of food contamination, much like the disturbed eating practices described above, are relatively rare, yet they have a long shelf life in the imaginations of eaters and have prompted modern eaters to become more mindful and responsible in their eating practices and to ask essential questions about the ways in which food is produced and consumed.

An important aspect of food scandals regarding alimentary delinquency is the manner in which they are exposed to the public by industry whistle-blowers and investigative journalists. Such revelations often elicit heightened indignation and reaction especially when accompanied by imagery or graphic description. One of the first food scandals to receive nationwide condemnation in the United States was the result of realistic and visually evocative descriptions of meat-packing practices in Chicago in Upton Sinclair’s 1903 *The Jungle*. Sinclair’s detailed descriptions are among the factors that contributed to the eventual creation of the US Food and Drug Administration. Meat has remained central to many food scandals. In 2012 it was revealed that many North American industrial ground beef preparations, notably hamburgers, contain alarming quantities of a viscous slaughterhouse by-product derived from centrifuging leftover offal, bones, cuttings, and blood that is used as a filler. Known in the industry by the euphemism “lean finely textured beef,” its prevalent use was revealed to the public in the press with the evocative term “pink slime.” More than any other

technique, the animal rights group People for the Ethical Treatment of Animals (PETA) depends on photographs and videos taken from behind the closed doors of animal confinement pens and slaughterhouses to arouse the shock and indignation of consumers and to garner support for their work against animal cruelty. Under pressure from the meat lobby, states have taken measures in 2013 to denounce and ban the use of such imagery by whistle-blowers, claiming that the images are unlawfully obtained and are frequently used to distort the truth while at the same time acknowledging that raw footage and terms like “pink slime” go a long way in raising consumer awareness and demands.

Summary

Alimentary delinquency, as featured in travel literature, in cases of pica, in works of contemporary art, or in food scandals that are exposed in a heightened visual manner, is viscerally disturbing and elicits revulsion in both physical and moral forms. Creating spectacle and menace around the act of eating, it forces post-agrarian spectators-as-eaters to question “normal” eating practices, often through the use of shock and disgust, and points to the body as a potential site of suffering and disorder through the seemingly simple, and often unquestioned, act of eating. Michael Pollan, in his critique of the widespread mechanized mass production of food, but mainly of meat and the industrial slaughterhouse, is an advocate of the right to look, suggesting that slaughterhouses should remove their doors and take down their walls, exposing all of their methods to the eyes of the public, as hard it sometimes may be. According to Pollan, the very fact of being able to look inside the slaughterhouse would provoke profound changes in the ways that animals are slaughtered and the ways that food itself is consumed. With its emphasis on the display and presentation of blatant images, alimentary delinquency challenges the modern eater, who prefers less and less to be confronted with the reality of his or her food and who, in a state of post-agrarian bio-cultural crisis, must

confront the symbolic possibilities of food contamination, coprophagy, gorging, cannibalism, and the spectacle of human flesh turned to meat. Alimentary delinquency involves acts of representation, which, more than any real danger to eaters, disassociate the act of eating from actual nourishment and pave the way toward Pollan’s goal by eliciting eaters to think long and hard about food choices and the ways in which food is consumed.

Cross-References

- [Cannibalism](#)
- [Eating Disorders and Disturbed Eating](#)
- [Food “Porn” in Media](#)
- [Food and the Avant-Garde](#)
- [Food’s Purposes](#)
- [Food-Body Relationship](#)

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Filmography

Babette's feast (Gabriel Axel, Denmark, 1987)

The cook, the thief, his wife and her lover (Peter Greenaway, U.K., 1989)

Eat, drink, man, woman (Ang Lee, China 1994)

La Grande Bouffe (Marco Ferreri, France, 1973)

Julie and Julia (Nora Ephron, USA, 2009)

Like water for chocolate (Alfonso Arau, Mexico, 1992)

Phantom of liberty (Luis Buñuel, France, 1974)

Salò o le 120 Giornate de Sodom (Pier Paolo Pasolini, Italy, 1975)

Sweet movie (Dusan Makavejev, Canada, 1974)

American Cuisine, Existence Of

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Synonyms

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Mass-produced foods; National cuisine; Native
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Introduction

Does an American cuisine exist? The multicultural and theoretically egalitarian society of the USA as well as its relatively recent establishment as a nation makes it difficult to identify specific foods that accurately and inclusively represent the country. It also raises other questions. What is a cuisine? Is a description of what Americans eat the same thing as a description of cuisine? Can those eating patterns constitute a cuisine? In what ways do those patterns reflect and, perhaps, even shape the history and identity of the nation? Who gets to answer these questions and why do they matter anyway?

This entry reviews a variety of approaches to the initial question, treating the definition of cuisine as a fundamental starting point. Some scholars (Long 2009; Mintz 2002) see it as a publicly recognized and officially established repertoire of ingredients, preparation styles,

flavor principles, attitudes toward food, and means of evaluating taste. This repertoire represents an intentional and aesthetic approach to food as articulating the identity of that culture and is canonized through formal culinary training, fine dining restaurants, professional chefs, and cultural critics. Another approach sees cuisine as simply the culinary culture(s) and foodways of a nation – the actual practices surrounding food and eating. It is expressed in cookbooks, popular literature and media, commercial food establishments, food marketing, the overall food system (from producer to consumer) and *habitus*, and foodways in daily life. It can also be seen in symbolic meals, such as at holidays, and in tourist products associated with the nation. This approach defines a culture's cuisine, by describing its food practices.

Cuisine as a Publicly Articulated and Respected Canon

If cuisine is an officially accepted set of foods representing national identity, is it possible to say that the USA has such a canon? Most observers say no, although recently there are chefs and groups presenting new versions of older food traditions (usually, local and/or high-quality ingredients with “healthier” preparation methods). This lack of a canon reflects the history of the country as a nation of immigrants. Some romanticize this history as creating a “melting pot” of cultures in which they all coexist harmoniously and blend into a new and unified culture; however, the plethora of cultures coming to the USA have generally been incorporated into the largely Protestant and Caucasian Western European cultures that have held political, economic, social, and cultural control since they first colonized the country. A “salad bowl,” in which individual identities are maintained, is often presented as a more accurate description as well as a democratic ideal.

There are foods (hot dogs, pizza, ice cream), food habits (shopping in quantity, outdoor grilling), and food events (Thanksgiving dinner) that seem to be shared by most Americans,

helping construct Benedict Anderson's concept of nation as an "imagined community"; however, these do not represent a unified cuisine that all Americans agree upon as representing their identity. They also do not represent a respected way of cooking, eating, and thinking about food that citizens should aspire to. In fact, the cuisines of other cultures are frequently held up as models for American foodways habits. Also, many of these foods do not necessarily require extensive culinary training or sophisticated palates to be enjoyed and are thus not considered representative of culinary arts.

Another issue in determining whether there is an American cuisine is that, until very recently, food was not part of an official public and political dialogue on American identity. There is currently much discussion on food security, food safety, and eating habits that lead to obesity and health issues in the USA, and there are social movements promoting more sustainable food systems and foodways; however, there have been no official public attempts to establish a canon of food that represents Americanness. Again, there are practices that use food to perform a national identity – politicians displaying their attempts to be one with the masses by eating certain foods (hot dogs, barbecue, fried chicken); holiday meals and foods that ostensibly celebrate the nation; and movements in the late 1800s and early 1900s to "educate" immigrants into "American eating habits," as well as to the current popularity of cooking shows, fetishizing of culinary arts, raising chefs to star and celebrity status, and the increasing turning of cooking and eating into recreation and entertainment as bringing food into the public dialogue; however, this dialogue does not seem to be articulating a canon of national food practices, a cuisine.

There are several venues in which this kind of discussion actually does occur. One is cookbooks and, more recently, recipe Internet sites. The first has helped construct a sense of national identity in the USA. Amelia Simmons' *American Cookery*, published in 1796, established a definition of the cuisine of the new nation as being variations on European (mostly, British) cooking using local ingredients, preparation methods, and

nomenclature. She introduced recipes using cornmeal, pumpkin, squash, Jerusalem artichokes, turkey, cranberries, and spruce beer, suggesting that American cooking was the localization of other national cuisines. Since that time, there have been numerous cookbooks either presenting American foods or that have had such a widespread appeal, such as the *Joy of Cooking* and *Betty Crocker's Cookbook*, that they have helped to construct a shared culinary culture.

Similarly, women's magazines since the 1940s have offered recipes and cooking and tips for procuring, preserving, and presenting food that create a shared national culture. These arguably present a national cuisine, one that in the past emphasized a heavy reliance on processed foods and new technologies in kitchen equipment. It was a cuisine dominated by the 1950s housewife concept and tied directly into American attitudes toward women, gender roles, the home, the nuclear family, and the American lifestyle as well as food. Since the latter 1980s, an industry of cookbooks, cooking shows, magazines, self-help books, Internet sites, and celebrities has helped shape a national culinary culture emphasizing the aesthetic and social dimensions of food.

These venues for public discussion raise further questions about cuisine being established by those trained and knowledgeable in the culinary arts as well as being validated by those holding power. The USA, although riddled with social hierarchies based on race, gender, region, religion, physical appearance, popularity, and more, is actually relatively egalitarian in establishing cultural standards. Its foundation in capitalist economic theory allows the "marketplace," the consumers, to set these standards. Anyone, in theory, can work hard and secure a place in higher social classes. They can then have a say in defining an American cuisine.

Interestingly, there are now some cultural and educational institutions participating in a national dialogue around food. In 2004, the Smithsonian Institution developed an exhibit, *Key Ingredients: America by Food*, which, sponsored partially by the National Endowment for the Humanities, traveled throughout the country,

promoting discussion and thought. Similarly, starting in 2010, the SI's American History Museum displayed an exhibit on Julia Child, replicating her kitchen and exploring her impact on American culture. Other food exhibits have been developed by museums around the country. Also, Food Studies has emerged as an academic discipline and is being embraced by educational institutions, helping develop a canon of thought and scholarship on food and the nation.

Another aspect of defining a cuisine is whether or not it is distinctive and has a recognizable identity. Elizabeth and Paul Rozin observed that cuisines could be defined according to "flavor principles," the basic ingredients and unique combinations of those ingredients. This not only gives a characteristic taste to each cuisine but also allows that cuisine to expand and vary its repertoire as long as it maintains those core flavors.

Does the USA have a flavor principle? French theorist Roland Barthes concluded that American food is characterized by two flavors: "crispiness" and sweet. This crispiness is oftentimes achieved through deep frying, which then adds oiliness to much of the food, and by adding salt. Also, sweetness, now often coming from high-fructose corn syrup, appears in most foods, even those not thought of as being sweet, such as bread, vegetables, and meats.

Are there other aspects of American foodways habits that distinguish them from other cuisines? Are there patterns recognizable as "American"? Patterns emerge (three meals a day, emphasis on protein, historical treatment of food as fuel and nutrients, etc.), but these are representative and common, not necessarily distinctive or unique. The existence of patterns takes us to the second way of approaching cuisine.

Cuisine as Food Cultures and Foodways of a Nation

Cuisine can also refer to the total sum of what people in a nation eat, what can also be called "food culture" or "foodways." A cuisine then is simply the description of those foodways. This is problematic, though. A description is not

a definition. Also, the multicultural nature of American history as well as the geography of the country makes such a description lengthy and complex. There are simply too many foods to include in a single description. Furthermore, identity, whether cultural or culinary, is frequently "differential," based on contrasting with another identity. Since food in the USA has historical connections with numerous other cultures, it is difficult to identify food traditions that are distinctive or unique only to the USA.

One way to address the complexity of American food culture is to see it as a layering of all of these historical and contemporary food cultures. Folklorist Don Yoder observed that American food culture is characterized by the coexistence of layers of regional, ethnic, and popular food cultures, suggesting a way to begin describing and identifying patterns of food practices.

Every food culture or cuisine can be seen as a combination of the natural environment and the human use of and adaptations to that environment. The physical environment includes the climate, the topography, water sources, soil types, flora, fauna, and the distribution or geography of those components. These in turn shape what edibles are available naturally as well as what foods can be produced in that environment. Human interaction with that environment both shapes and is shaped by the belief system, worldview, values, and practices – the culture – of that group of people.

Such interaction in the USA has a complicated history for two reasons: the nation is geographically vast and diverse, and secondly, the human cultures interacting with the physical environment have also been varied and have taken multiple, and often conflicting, approaches to the land and to food production from that land.

The USA is the fourth largest country in the world, stretching 3,717,813 mile². Its east coast faces the Atlantic Ocean, while its west coast faces the Pacific, and it also includes large sections of land that do not join the mainland. In between the coasts, it has plentiful freshwater resources with lakes, rivers, and smaller bodies of water totaling 181,519 mile². The climate is mostly temperate although because of its size, it

reaches into the arctic as well as the tropical. It also historically contained vast woodlands and prairies with mineral-rich soils that sustained numerous plants and wildlife. It also contains desert landscapes, swamps, high mountains, deep canyons, and rolling hills.

This natural environment has translated into two characteristics of American food: seemingly unlimited abundance and rich diversity and variety of foods. Although the country has gone through times of limited food supplies (the Depressions and WWII) and there are individuals and communities suffering from “food insecurity,” the cultural ethos assumes numerous choices and enough food for every American.

The USA can be divided into four geographic regions: the Eastern Seaboard, the Midwest Interior Plains, the Western Seaboard, and the South stretching from the eastern seaboard to beginnings of the western one. Each region shares a unique combination of natural resources, Native American history, settlement history, ethnic groups, and political and economic development. Moreover, each region includes numerous subregions. These regions and subregions have their own cultural histories that oftentimes include distinctive and representative food traditions.

Can these regional foodways be taken all together to identify and characterize an American cuisine? Many cookbook writers take this approach: the excellent Time-Life series, Jeff Smith’s *Frugal Gourmet* series, and Jane and Michael Stern’s *Roadfood* collections of recipes and anecdotes from real people across the country. Folklorists and geographers also imply this approach in their ethnographic studies of foodways traditions of specific localities, for example, Brown and Mussell’s *Ethnic and Regional Foodways in the United States: The Performance of Group Identity* and the Shortridge’s *The Taste of American Place: A Reader on Regional and Ethnic Foods*. Both explore how food reflects as well as defines the history and identity of a region but also recognize that the association of food with a place can be a relative construction based on marketing, tourism, mass media, and communal imagination. Food can function as a “rhetoric of

regionalization,” being used to recognize and draw regional boundaries and invent regional identities (Brown and Mussell). Anthropologist Amy Trubek questions whether the American food system even allows for a “taste of place” since food tends to travel across the country so that its origins are rarely known. Analyzing the French concept of *terroir* (food literally tasting of the place where it was produced), she states that the USA does not have a cuisine based on regions or even a connection of food to a physical environment: “Our foodview is not informed by taste, or by place, but by the ability to purchase a consistent product, or more generally, a commodity” (p. 15). Beginning in the first decade of the twenty-first century, the locavore movement, Slow Food and similar organizations, and food systems critics and activists have begun reconnecting food and place, bringing these concerns to the general public, so that the concern itself is perhaps a step in creating a national cuisine.

The geographic regions of the nation developed into cultural regions through the adaptations of humans to those environments as well as the ways in which humans shaped the land. American history includes waves of settlement, each wave introducing new culinary practices and cultures.

The original cultural layer of American foodways is Native American, coming from Asia through the Bering Strait in Alaska between 15,000 and 13,000 years ago. These “immigrants” then spread throughout the continent adapting to local resources and developing into four distinctive regions: Eastern Woodland Cultures, Plains Cultures, Far West Cultures (including the Pacific Northwest, Alaska, and Hawaii), and Southwest Cultures. Although tribes had their own languages, social structures, and food traditions, they tended to share a belief that humans needed to live in respectful harmony with nature. They carefully used local resources, mixing hunting and gathering with farming. Corn (maize) cultivation began around 400 AD and allowed more reliance on farming, which then leads to more permanent settlements. Corn became a staple crop, usually grown and cooked

with squash and beans. These “three sisters” were integral to Native American foodways and are one of their most significant legacies.

European exploration and colonization began in the late 1400s, introducing new foods, animals, and technologies along with tremendous social upheaval and in some cases extermination. The Indian Removal Act of 1830 moved Native Americans to reservations west of the Mississippi, further disrupting traditional cultures. Many culinary and foodways traditions and skills were lost, although European settlers adapted many of them, particularly, the cultivation of certain crops of the three sisters. Native American foodways since have developed into new “cuisines” reflecting this history of disruption and homogenizing of separate cultures into one of displaced peoples. Fry bread, a flat bread of wheat flour, salt, water, and lard or shortening, is an example of a dish reflecting the experiences of poverty and disconnection with the land caused by governmental policies and social discrimination.

European settlement is the foundation of the USA as a nation, a reality that shapes its culinary culture as well as its politics, economics, and social structures. There were several waves of settlement of the USA. After the initial “discovery” by Spanish explorers in the late 1400s, the first wave occurred from the early 1600s through the early 1800s, with settlement by Western Europeans – primarily British, Dutch, and German in the 1700s. With the addition of French cooking styles and aesthetics, these three cultures laid the foundation for “American” culinary culture, setting what has been treated as the social norm for attitudes toward food – the dominant flavor and texture of the “melting pot.” The forced immigration of slaves from Africa during this time period until the Civil War in the mid-1860s significantly influenced the Southern USA – shaping its economy, agriculture, social structures, and foodways. Spanish colonization of Mexico during this time created a culinary culture influential in what later became the American southwest.

Industrialization brought a second wave of immigration in the 1800s and also restructured

the nation into rural and urban. These groups included the Irish (largely Catholic, fleeing the potato famines), southern and eastern Europeans, as well as European Jews. Although these groups came from Europe, their culinary traditions contrasted with and threatened the previously established food culture, leading to attempts to assert that culture as the American way to which immigrants needed to adapt.

The claiming of Texas and southern California from Mexico in the mid-1800s redefined Mexican citizens and their food as ethnic Americans. The California Gold Rush in the 1860s, as well as similar opportunities in the Pacific Northwest, attracted immigrants from southern China and other Asian countries as well as Russia and northern Europe. Immigration laws in the 1910s and 1920s limited the number of immigrants to the USA, shutting out some ethnicities altogether. Migrant workers from Mexico, however, were brought into the USA as an inexpensive labor force, affirming the status of Mexican culinary traditions as not only “other” but also less sophisticated and less “civilized” than “American” ones.

A final wave of immigration beginning in the 1960s brought refugees from international conflicts (Korea, Vietnam, Southeast Asia, Central America) as well as educated professionals from around the world. These immigrants introduced their own culinary traditions, expanding the foods available in the USA. Also, increased mobility, cross-cultural and cross-regional interaction among American residents, and access to global experiences have further broadened the variety of ingredients, cooking and eating styles, and cuisines available to Americans.

Throughout this history of immigration, some food cultures quickly assimilated, leading to the so-called melting pot of American culinary culture, while others retained their individual identities, maintaining cultural forms (such as language, food, religious beliefs) and social groupings and creating more of a “salad bowl,” in which multiple culinary traditions coexist. In many instances, immigrant foodways entered mainstream American foodways and are no longer thought of as ethnic – as described in Richard

Pillsbury's *No Foreign Food*. In other cases, food provided a means for economic survival and a venue for assimilation and even public sharing of culinary traditions. Whether that sharing translated into acceptance of those ethnic identities, as Donna Gabaccia suggests, or is another form of cultural imperialism (Abrahams, Heldke) is a matter of interpretation, but it is definitely accurate to say that such cross-cultural exchange of foodways is a characteristic of American food culture (Diner, Pillsbury; Long). Be that as it may, food has often been used as a way to mark boundaries, negotiate and celebrate identity, create community, and pass along beliefs and world-views among ethnic groups in the USA.

An additional characteristic of American food is that ethnicity – and participating in ethnic foodways – is, to a certain extent and ideally, voluntary and situational. That is, individuals can choose to highlight their ethnicity in given situations and, in some, treat it as irrelevant. This means that, in theory, an individual of Chinese heritage can choose to eat Chinese food on some occasions but not on others and can be motivated by factors other than his or her ethnicity, such as taste, convenience, expense, social setting, etc. Also, American society is literally multicultural with most residents claiming a number of ethnicities. An individual can therefore eat from multiple culinary cultures in performing their own ethnic heritage.

The final layer of food culture in the USA, and the one that is most often identified as American, is the mass-produced, commercial one that results from an industrialized food system. This system distances the people growing food (producers) from those who are eating it (consumers) by adding numerous links to the “food chain” – processors, packagers, marketers, distributors, and sellers. It depends heavily on technology and transportation, taking raw ingredients from throughout the country, transforming them into products that are then mass marketed and mass distributed. The system values efficiency, cost-effectiveness, and profit over more intangible qualities of food. It also reflects the historical American approach to food as fuel rather than something to enjoy for itself, and it embodies other American values – quantity over

quality, individual choice over communal or global responsibility, convenience, conformity, immediate and easy access to goods, and faith in human ingenuity and technology as well as a belief in its superiority and infallibility along with a sense of entitlement to abundance. Contemporary American eating habits have been shaped by the existence of large supermarkets, the choice of multiple brands of an item, purchasing in quantity and at discount, and the irrelevance of season or locale in having access to a specific food. The system has also created a national level of food culture made up of highly processed, heavily packaged, oftentimes pre-prepared foods that can be found throughout the country. Marion Nestle's *Food Politics: How the Food Industry Influences Nutrition and Health* (2002) and Michael Pollan's *The Omnivore's Dilemma* (2006) heavily criticized the industrial food chain and have brought its destructive implications to the attention of the general public.

An offshoot of the contemporary food system is “fast food,” oftentimes identified by observers as a distinctively American cuisine. Eric Schlosser argues in *Fast Food Nation* that this industry reflects particular American historical conditions – the rise of the automobile, the social and geographic mobility of US residents, capitalism applied to food production, etc. Along with franchise restaurants in general, it has also homogenized American tastes and foodways and, because of its centralized top-down management model, has spread and imposed its own culinary culture throughout the country. It has also literally taken over local venues for food and established similar processes, products, and evaluations everywhere, in what has been referred to as “the McDonaldization of America.”

At the same time, the fast-food industry now recognizes regional culinary traditions and oftentimes exploits them by inventing products simulating them and by catering to regional tastes. Sweet tea, for example, a drink distinctive to the American South, is available in many fast-food establishments throughout that region. Also, some franchises maintain their original regional roots, such as Friendly's, which started in Massachusetts

and continues to serve New England style hot-dog rolls wherever it is in the country.

This layer of commercial mass-produced foods can also include a number of food-related industries and products – cookbooks, food magazines, recipe websites, food festivals and trade shows, culinary tourism, food memorabilia, and new food “destinations” and food-based events. Many of these present a de facto American cuisine by referring to “all-American” food, “comfort foods,” and foodways traditions of grandparents. Even those that present foods that are unique or different in some way actually suggest that there is a normative American cuisine. This is usually characterized as plain, straightforward, hearty, “meat and potatoes” fare that is associated with the Western European colonial and pioneer settlers. Furthermore, the system has also created a national level of foodways that are practiced and shared among most Americans.

American Cuisine as Specific Ingredients, Dishes, and Meals

These layers of food cultures can be explored through “biographies” of a particular ingredient, dish, or meal, some of which are used publicly and purposefully to signify American identity and to prove or imply the existence of a national cuisine. Oftentimes though, food takes on meaning through its usage or contexts of usage, and those meanings might not be recognized – until they either are missing or are seen to contrast somehow with another cuisine. These unrecognized foodways traditions can be seen as the actual practice of American cuisine.

Folklorists Wilson and Gillespie give an example of the raw materials of food in *Rooted in America*, in which they identify fruits and vegetables significant in American cultural history. Some are indigenous – corn, cranberries, hot peppers, pumpkins, tobacco (not an edible but ingested in a sense), and tomatoes – suggesting another way of defining an American cuisine, but others are not – oranges, apples, bananas, and watermelons – but are widely popular in the USA and are frequently found on American

tables across the country. Each of these items, however, reflects the economic, political, and social history of the nation as well as the larger food culture so that they can be said to embody American cuisine if not define it.

Similarly, specific dishes can also be “read” as presenting an American cuisine. In *Clambake: A History and Celebration of an American Tradition*, Kathy Neustadt explores the construction of meaning and identity of a particular foodways tradition in her ethnography and analysis of a community clambake in Massachusetts (1992). She demonstrates that this tradition was borrowed by Europeans from Native American foodways and has become imbued with concepts of self, nation, and community. In many ways, it represents an American cuisine through this process of adaptation, reinvention, and regrouping in the local and in the community.

Another example is barbecue. One of the most argued about food traditions in the country, barbecue is defined as a preparation method, a type of food, an event or activity, and even a condiment. It draws upon both Native American and African American heritage and has a regional association with the South but displays distinctive local variations. More subtly, it also reflects race, class, gender, ethnic, and even ethical (as in vegetarian options) identities in the USA. Similarly, in his history of Chinese food in the USA, Andrew Coe focuses on chop suey as representing the ultimate adaptation of an ethnic food to national tastes and the resulting homogenization and poor quality that has threatened the image of an ethnic cuisine as bland and tasteless. A final example of a specific dish signifying American cuisine is green bean casserole. Folklorist Lucy Long demonstrated that this casserole, although invented and distributed by a major food processing company, reflects the ethnic and industrial culture of the eastern Midwest, where it has been adopted into family and community foodways traditions.

The quintessential American meal is Thanksgiving dinner. Officially commemorating the first harvest of the Pilgrims, the meal promotes a national identity based on Western European, Protestant colonizers and a national myth of settlement for religious freedom and harmonious

coexistence with the prior inhabitants of the land. Unofficially, the holiday celebrates family, abundance, and the “freedom from want” represented in Norman Rockwell’s painting and part of the “American dream.” The meal can also be seen as representing, perhaps even constructing, national unity by offering a food event in which everyone can participate, not only sharing in certain expected foods, such as turkey, cranberry sauce, mashed potatoes, pumpkin pie, but also adding to that national paradigm individual variations reflecting region, ethnicity, ethos, class, gender, current circumstances, and even personality.

Summary

Is there an American cuisine? The possible answers perhaps just raise more questions, but the fact that it is open to discussion suggests significant characteristics of American food culture. Scholars and pundits write about it, but there are also the “de facto” constructions of a cuisine by “the people” – by restaurant owners, readers of cookbooks, chefs trying to find a niche and a name for themselves, farmers holding on to family land and financial survival either by joining one of the large conglomerates or by joining the farmers market and CSA movement, and each individual who daily makes decisions around food and, whether intentionally or not, performs Americanness through their eating.

It is also important to ask why it matters whether there is an American cuisine. It matters because having a cuisine seems to represent having a national identity that people can be proud of, that they can publicly offer to the rest of the world as well as to themselves as the best of what they are. But it also represents a unified agreement on what constitutes that identity and what represents quality – decisions that reflect social hierarchies holding cultural power (and usually economic power) rather than the more democratic layering and blending of food cultures that exists in a multicultural nation. As Sidney Mintz points out, “. . .not having a cuisine. . .might be a price we should be happily prepared to pay for ‘what’s great about America’” (2002, p. 24).

Cross-References

- ▶ [American Cuisine, Existence of](#)
- ▶ [Christian Stewardship in Agriculture](#)
- ▶ [Christianity and Food](#)
- ▶ [Company Identity in the Food Industry](#)
- ▶ [Ethnicity, Ethnic Identity, and Food](#)
- ▶ [Food and Place](#)
- ▶ [Trade and Development in the Food and Agricultural Sectors](#)

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American Food Rhetoric

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Synonyms

Agricultural mythology; Food identity; Food metaphor; Food politics; Food tropes

Introduction

Definitions of rhetoric have evolved over the course of Western intellectual history. As a result, understandings of this civic art can range from the strategic manipulation of symbolic forms for persuasive ends to a constitutive process that is central to the formation of identity. In its infancy, the Aristotelian conception of rhetoric as a persuasive appeal deployed by speakers to gain the advocacy of an audience was highly influential (Kennedy 1991). From this traditional standpoint, rhetoric can be summarized as a process whereby an advocate meets an external challenge with a specific set of symbolic appeals, overcomes situational constraints, and achieves personal and communal objectives (Bitzer 1992). This narrow view of rhetoric began to expand as a result of theorists such as Kenneth Burke, who positioned it at the center of human symbolic commerce, suggesting that it played a significant role in developing and maintaining communities by maintaining and generating new meanings that shaped perceptions of the world. Most importantly, Burke elevated aesthetic elements often associated with style in the rhetorical canon to a position of prominence alongside logic

and argument. This meant representation, myth, metaphor, and narrative were central to understanding how these symbolic networks shaped identity and action. Thus, aesthetic elements such as metaphor were no longer perceived as mere ornamental devices, but were reconfigured as frameworks that shaped human perception and knowledge systems (Lakoff 1993). Here rhetoric is transformed from a civic art designed to persuade audiences into a symbolic dynamic through which those audiences are constituted. As the meanings of human experiences such as food are negotiated through these dynamics, food itself becomes a constitutive field upon which identity is both shaped and contested. Given that the constitutive negotiation of food is central to every person's experience, studies in the rhetoric of food now encompass a wide array of contexts. These investigations include, but are not limited to, the impact of certain food practices on identity, the depiction of food in political culture, the relationship between food and nationhood, agricultural myth, and food sovereignty movements' growing political resistance. Food's meaning is shaped and contested through three main processes: the mythic normalization of food production and consumption patterns, the metaphorical contestation of the meaning of food through visual and linguistic means, and the constitution of new identities that transform food into a means of political resistance.

Agriculture and Myth

First, understanding the changing meaning of food requires exploration of the role that it plays within the mythic or narrative traditions that define a given culture. These forces deeply impact value systems and national ideologies. In the United States the rhetorical terrain of food is defined by agrarian myths that shape American consciousness. The narrative of the yeoman or gentleman farmer, sometimes historically embodied in the historical accounts surrounding Thomas Jefferson, remains deeply entrenched in the shared romantic traditions that define the relationship between farming and national ethics (Holden 2006).

The value systems that are romanticized in these myths are closeness to nature, hard work, independence, self-sufficiency, and individualism. This mythic account promulgates that nature exists as a resource provided by the Creator for the farmer's benefit, an ideal later expanded in Frederick Turner's frontier thesis, one of the earliest essays defining the development of rhetorical tropes commonly associated with farming, nature, and national virtue (Smith 1950). These myths' continuing rhetorical impact can be seen in the prevalence of these value systems in agricultural regions such as the southern United States despite decreasing percentages of citizens now actively participating in food production.

These mythic systems are also points of contest. As the nature of agriculture changed in the United States during the twentieth century, these mythic frameworks came into rhetorical conflict with progress narratives that advanced a belief in technology as salvation. Classic examples of these progress myths can be seen in Pare Lorenz's 1936 documentary *Plough that Broke the Plains*, a piece of New Deal propaganda advocating for planned communities. This film and other government-sponsored campaigns challenged the yeomen myth, suggesting that technological, mass farming would bring an end to hunger by overcoming nature. The erosion of independent agrarian practices in the face of this industrial farming regime generated fundamental conflicts in the national and global psyche (Singer 2011). Evidence of this appears in movements such as the Southern Agrarians, a political and intellectual movement that warned of the dangers of mechanized farming and the threat that it posed to regional identities that were linked to the soil. These thinkers overtly objected to the progress myth as essentially dehumanizing and attempted to galvanize a regional resistance movement by recovering the Jeffersonian myth of the small independent farmer who worked within the bounds of God and nature and did not seek to exploit the environment.

As the progressive myths of science and technology continued to expand, a new rhetoric of food emerged. This shift in food practices, as well as the methods used to normalize them, marked

the primary focus of the rhetorical analysis of modern food narratives. The mythic perspective highlights how food values, ethics, and practices are maintained intersubjectively. From a rhetorical standpoint, intersubjectivity can be defined as interlocutors defining their reality through symbolic exchange. This is what is meant by normalization. Rhetorical practices accumulate and sediment over time until they become widely accepted as unquestioned ways of life (Brummett 1976). As the twentieth century progressed, agricultural products far outstripped all other commodities in the global marketplace to become the most diverse and economically important trade item in the world (Murray 2007). In one classical rhetorical enactment, the original food pyramid, the shifting rhetoric of food associated with agrarian practices is evident. While cloaked in the rhetoric of science, the mythic shift from the yeoman farmer to the mechanized food system is normalized by this visual depiction of proper nutrition. Food historians note that this pyramid has little to do with personal health but instead supports agricultural policy (Mudry 2009). The placement of grains at the base of the original food pyramid persuaded citizens to accept the new technological developments in agriculture, specifically the trend toward industrialization and specialization that mark a grain-based market. This represents a fundamental reassessment of the ways that food policies, agricultural values, and nutrition function rhetorically to generate and normalize new food narratives.

Food Metaphors

The second manifestation of food rhetoric occurs when the meaning of food itself is negotiated through metaphorical frameworks. To illustrate this process one can examine how a particular food item can be symbolically contested through time. Communication scholars, food historians, and anthropologists recognize that the consumption of certain types of food is central to the expression of both personal and group identity (Mintz 1996; Montanari 2006). Perhaps the most

coveted global commodity at the end of the nineteenth century was sugar. During the nineteenth century, consumption of foods high in sugar was a marker of status, and those who ate even modest quantities understood that this item was a luxury. As the century progressed and shifts in global marketplaces responded to the increased consumption of processed foods, sugar as a marker of status has disappeared. The diet regimes of the past few decades demonstrate that sugar has shifted in meaning from a commodity whose consumption denotes status to a nutritional toxin. This point is evidenced in the Whitehouse Taskforce on Childhood Obesity's (2010) assertions that processed foods that are high in sugar, now more prevalent in poorer neighborhoods, and constitute a threat to the health of economically deprived citizens. This metaphorical equation of sugar to a nutritional toxin has, not surprisingly, met resistance from organizations that produce and distribute sugar-based products. The Center for Consumer Freedom has been a primary mover in attempting to rhetorically challenge this view of sugar, leading to explosive political confrontations regarding the rhetorical meaning of food. The most high profile of these confrontations occurred in New York City where initiatives against large soda containers, limitations that are justified as attempts to improve public health, have been challenged in both the court system and the venue of public opinion. Here sugar undergoes yet a third metaphorical reconstruction as it is linked to personal liberty and freedom. As sugar is transformed from status marker to nutritional toxin and finally into a means for expressing individual freedom, sugar demonstrates how particular foods can be negotiated rhetorically.

A growing awareness exists that the linguistic terms to describe food have a profound impact on how the public perceives food. The publication of Upton Sinclair's *The Jungle* (1906), a novel that exposed the unsanitary working conditions of the Chicago stockyards, provides an example of the overt use of linguistic framing devices to shift the national consciousness about food. While the work was primarily intended to initiate a national conversation about the exploitation of

immigrant laborers in America, its reverberations within the food industry were more substantial. The public outcry inspired by the graphic descriptions of filth in the slaughterhouses began the age of food reformation, leading to the formation of the organization that is currently known as the Food and Drug Administration. Food companies are now conscious of the ways that images of filth, poison, or viscera can impact the marketplace and go to extraordinary links to limit what can or cannot be said about their products. Not surprisingly the management of food has generated a number of First Amendment cases in the United States (Grey 2013). Food libel laws, otherwise known as Food Disparagement Laws, have come into effect in many states. While sometimes known as "Veggie Libel" laws, cases of food disparagement usually deal with meat products. Texts such as Sinclair's *The Jungle* would likely draw a civil suit if the book were published in many agricultural states today. The most famous food disparagement controversy came in 1996 when talk show host Oprah Winfrey suggested that she would be hesitant to eat beef after hosting a show about mad cow disease. A vivid example of how food is linguistically contested through these cases appears in the use of the term "pink slime" by CBS news to describe certain methods for creating ground beef. While the metaphor "pink slime" was used in internal FDA memos to describe a product called "lean finely textured beef," the news organization has been litigated for its use of this term, which provokes disgust. Thus, the metaphorical framing devices used to describe food are now the subject of First Amendment litigation.

From a metaphorical standpoint, the terminology that divides linguistic constructs such as "natural" and "artificial" is also the product of rhetorical processes. As food is transformed from a commodity that is grown and delivered into a manufactured product, this led some rhetorical scholars to question the ontology of food (Jacobsen 2004). In other words, delivery, packaging, and promotional campaigns impact the consumer's relationship with food, but so do the constituent ingredients, texture, and experience

of eating it (Moss 2013). These foods are sometimes described as “spectral commodities” (McHugh 2010). Because these products are created in laboratories with mixtures of genetically modified organisms and artificially derived chemicals, debate exists regarding how to define these spectral products. Concerns raised about the normalization of artificial foods have increased the metaphorical contest between “natural” and “artificial” within the food sciences themselves (Nestle 2002). New linguistic terrains have merged to demarcate certain types of food that reflect particular dietary concerns. This growing linguistic consciousness is evidenced in the frequent use of terms such as “natural foods” or “whole foods” that have their origins in the organic farming movement that took root in the United States in the late 1960s. A resurgent interest in understanding how the processed food diet impacts both individuals and the environment has been the subject of a number of best-selling books (Pollan 2006). To demonstrate the rhetorical strategies of processed foods’ critics, the example of vitamin fortification is instructive. Critics such as Michael Pollan argue that the vitamin fortification of processed foods such as high-sugar cereals help to normalize the existing dietary regime by allowing producers to define these products as “healthy” when they are not. Rather than encouraging the consumer to eat more “natural” foods that humans have evolved to digest, vitamin fortification encourages the perception that all food is simply a collection of artificially generated ingredients that can also be defined as “natural.” Concerns about how food is being defined have led to new dietary regimes called paleo-diets that advocate a return to preindustrial nutrition patterns.

Constitutive Food Rhetoric

The third major trend in the rhetoric of food deals with the manufacture of new subjectivities that challenge existing food patterns. Recognizing that rhetoric plays a key role in the constitution of communities by generating new meanings, many groups are now attempting to overtly create

new food identities. These movements are often called food sovereignty movements. Just as discourse shapes personal identity and experience, symbolic systems also can be used to create counter-discourses that generate new subjectivities (Hall 1985). The creation of new food identities proceeds in two stages. First, the dominant strategies used to normalize certain food patterns are exposed. A good example of this process is documented in George Ritzer’s work exploring the impact of the McDonalds Corporation on American consumer patterns. The rhetorical success of this one food company ushered in a new age in which consumer activity is dominated by chain stores to the exclusion of local businesses. Rather than thinking about food in terms of health and well being, consumers are being increasingly encouraged to understand food as a product that should be delivered quickly, be standardized across regions, and be efficiently offered with as little cost as possible. Thus, the rhetoric of food is deeply intertwined with the values generated by these new production, distribution, and consumption patterns. These models may be seen as natural by those who participate in them, but they are in fact products of efficiency value systems that now define and constrain human behavior by, in effect, promoting the idea that these models are natural. By making the consumer aware of the symbolic apparatus and patterns that are being used to exploit them, they are made more self-aware of the choices they make.

The second element in constituting the food sovereignty movement entails the projection of certain foods as conscious political expressions. These efforts are evidenced by the relationship between food and self-perception, as organic or whole foods become a dramatic frame of political resistance. Environmental scholars suggest that when certain foods are consumed, the consumer is increasingly making these choices as a means to express political identity (Katz 2010). While early organic advocates suggested that these diets were beneficial for their positive effects on physical health, the growing food awareness movement looks at how certain practices express a form of political resistance. For example, while canning was once

practiced as a means to allow agrarian populations to survive harsh winters, new trends show that it is now becoming increasingly widespread in mid- to upper-income households that view food preservation as a medium through which to express their personal autonomy in the face of mechanized farming (Click and Ridberg 2010). Thus, food preservation has shifted rhetorically in both its function and significance. As these practitioners become increasingly aware of human and environmental exploitation associated with the mechanized production of food, these practices have also evolved into a means for generating new rhetorically generated food identities.

Most recently food is being contested along the axis of human rights as food sovereignty movements become global in scope. These advocates draw a direct link between food and the values of individual sovereignty and freedom. The food sovereignty movement is a direct expression of these rhetorical efforts, as food giants, the most visible of which is Monsanto, are perceived to “colonize” the food chain (Lang and Heasman 2004; Paul and Steinbrecher 2003). In the face of these concerns, many corporations have become increasingly conscious of the discourse that they generate, exploring ways to project a humane, eco-friendly image that sometimes involves the use of food imagery (Cozen 2010). Understanding rhetoric as a constitutive process entails exploring how symbol systems generate ways of seeing and experiencing the world. As this growing awareness has become a global movement, new terminologies are emerging to describe this shifting subjectivity. The most resonant of these theoretical constructs has emerged from the Slow Food movement initiated by Carlo Petrini, which attempts to create a new identity that resists the fast food mentality. *Gastronomes* are defined as food consumers who consciously expand their understanding of food beyond the parameters of cost and nutrition. In particular, these consumers view food as an aesthetic, cultural, and ethical complex. In this framework the lack of self-awareness among most food consumers is replaced by an increased awareness of both the

symbolic construction of food and the broader ramifications of various food choices (Andrews 2008). The gastronome, as a rhetorical construct, represents the culmination of the shifting terrain upon which food practices are currently contested. This demonstrates the extent to which this new class of consumers is becoming aware of food as a rhetorical concept. As new subjectivities emerge to account for the shifting rhetorical environment through which the meaning of food is established and negotiated, the theoretical and critical approaches that grapple with this discourse continue to proliferate.

Summary

As American society has progressed from an agricultural to a postindustrial economy, food producers have been largely replaced by food consumers. The gulf that now exists between citizens and their food means that there are many layers of mediation between people and what they eat. Government agencies, citizens’ rights groups, corporations, and other organizations each contest the symbolic meaning of food. The process by which these meanings are negotiated, both strategically and unconsciously, is rhetorical. To suggest that food is discursively constructed means recognizing that food definitions are products of rhetoric. While aesthetic elements such as myth and metaphor may appear superficial or secondary, they are in fact the building blocks of literal meaning. Since the nation is entering a period when food is increasingly politicized, it is reasonable to expect that its meaning will undergo further transformations. Attention to the rhetorical dynamics that form the basis for how these conflicts are navigated is essential to understanding the shifting parameters of food consciousness.

Cross-References

- ▶ [Company Identity in the Food Industry](#)
- ▶ [Food and Choice](#)
- ▶ [Food and Class](#)

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Ancestral Cuisine and Cooking Rituals

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Synonyms

Ancient cooking; Archetypical food; Cooking customs; Iconic dishes; Prehistorical recipes; Ritual food; Traditional cuisine

Introduction

All over the world today, different peoples carry out culinary practices and methods of preparing food that belong to and denote earlier and often particularly ancient forms of cooking (Civitello 2011). Anthropological and ethnological studies show that the cuisine of our ancestors is far more than a long-standing system of preparing food developed down through the ages. Bio-archaeology and ethnobiology also reveal that the cuisine of our ancestors is not a simple

cluster of remote culinary habits or customs but involved special artifacts, technical expertise, and basic skills related to nutrition and environment. Moreover, it reflects archetypal images and ideas about the origin and identity of individuals and groups. In addition, traditional concepts of gender are embedded in the most ancient culinary practices. Ancestral cuisine is also a mirror of the economy and the resources of a territory and is a document of the political history of a community, its social hierarchy, and distribution of power through the centuries. But first and foremost, ancestral culinary practices have an anthropological and cultural dimension. They reveal spiritual and material beliefs in nature and the relationships between humans and other creatures (Kiple and Coneè Ornelas 2000). In many cases, the most ancient culinary practices have evolved into cooking rituals rather than simply systems of preparing food. What makes a remote culinary method ritualistic is not just a habit, albeit regularly and invariably followed by peoples on certain occasions or in precise contexts. Yet, a long-standing practice of preparing food becomes a cooking ritual if it is related to or carried out as a solemn rite, that is to say, an official ceremony consisting of a series of actions performed according to a prescribed order with a precise cultural meaning, whatever it is. So “ritual” is a collective term that designates the range of techniques that peoples use to capture or promote life, fertility, prosperity, health, etc. (Pilcher 2006). There is no science or discipline specific to ancestral cuisine and cooking rituals. Many social sciences deal with this field: e.g., anthropology, ethnology, archaeology, history, linguistics, sociology, theological studies, and so on. Indeed, many methods and approaches help us to understand how people conceive and develop cooking practices relating to their cultures (Mintz and Du Bois 2002). Interviews and participant observations are two primary methods, as well as archaeological and ethno-botanic researches. In addition to empirical data, popular mythology, epic, and historiographical literature shed light on the cuisine of our ancestors and their cooking rituals. Besides, the food lexicon of peoples is a depository of knowledge

of utmost importance. Culinary traditions are investigated by sociology, especially with regard to spiritual, moral, and political dimensions. Further important data are brought to light by cross-cultural comparisons. All these researches show that the attitudes toward the cuisine of our ancestors and their cooking rituals not only are a mirror of archetypal beliefs and shared convictions but also reveal and perform a critical function.

Food Preparing as a Biological and Cultural Practice

From a historical perspective, the first appearance of ancestral cuisine occurred in prehistorical food rituals (Toussaint-Samat 2009). The analyses of these rituals are philosophically instructive insofar as they show that ancestral cuisine is not a mere relict of our past and that cooking is far more than a biological necessity and an instinctive practice. Prehistorical food rituals disclose that activities involving food had a theoretical dimension. There is no doubt that from the earliest times, culinary practices were strictly dependent on the resources, materials, and techniques at hand. On the other side, culinary tastes and social and cultural occurrences also play a role in the evolution of cooking. One of the most significant rituals among primitives was offering human flesh to deities. And cannibalism was not only a ritual but also a natural response to any severe food shortage. Prehistorical food rituals show that the adoption of techniques to prepare and process food comes from the interplay of technical and economic restrictions as well as culinary tastes and aesthetic or social standards. A good example is the prehistorical and historical Arctic peoples cooking sea mammal meat and extracting the oil by boiling according to special recipes. As this example shows, creating recipes and inventing cooking methods to make food edible were not simply technical issues, but expressions of human artistry and inspiration. More in general, ancestral cuisine represents the cultural heritage of populations and especially the natives of a country. Indeed, the 2010 declaration of Mexican cuisine as an intangible

cultural heritage in compliance with the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage has great significance. The award – the first for food – recognizes Mexican cuisine and in particular Michoacán cuisine as an integral part of an ancestral cultural system characterized by wide social diversity and geographic biodiversity. These days in fact Mexican dishes are still based on native foods and culinary practices, as *nixtamalization* and *chinampa* demonstrate. The award is a sign of the social, economic, and ethical issues existing in contemporary societies about preserving ancestral foods and practices. In the most recent philosophical debates, ancestral cuisine is seen as a public good and a keystone of the common well-being of multiethnic and multicultural societies. Along this line, many public policies are based on the assumption that preserving ancestral cuisine is a way of recognizing native peoples' identity and respecting differing cultures, attributing each its own dignity.

Art and Religion: The Spiritual and Symbolic Dimensions

It is often debated whether ancestral cuisine is related to the spiritual/mystical dimension. Many studies have pointed out that the dividing line between cooking and religious rituals is not clear-cut. And the same may be said about the relationship between cuisine and art, given that food prepared according to cooking rituals is surely an artifact. Some dishes are even authentic artworks: in Korea rice cake are prepared with azalea flower petals to celebrate the beginning of spring or shaped like the sun, moon, stars, and earth as a prayer for good weather (Yeun ja 2010). According to some, cooking is itself a form of art and cooking rituals belong to religion and beliefs in the supernatural. This contains a grain of truth, though it seems to lay stress exclusively on one feature of a multifaceted phenomenon. Striking evidence of the spiritual as well as physical dimension of cooking can be found in the Ancient Greece *mageiroi* and their ways of preparing food (Berthiaume 1982). From

ancient times ancestral culinary practices have been related to religion and art, as ancient food ceremonies and sacrifices to deities demonstrate: e.g., Greek festivals like *Thesmophoria* and *Karneia*, the Jewish cult of YHWH, and Confucian ceremonies and sacrifices. In other words, cooking, religion, and art are separate spheres of human activity involving complex relationships. Accordingly, a reasonable view is to consider cooking not just as a material habit, but as a practice entailing spiritual convictions and revealing the mystical or, more properly, the symbolic dimension of food. So, in Ancient societies activities involving food were conceived as practices that enter the divine realm, and cooking was a daily practice with extra-material implications. This is a literary leitmotif and in particular a general theme running through epic poems, such as the *Odyssey* and *Iliad*, and comedies, such as *Dyscolus* by Menander. Food rituals that are genuinely ceremonies such as Japanese Way of Tea are philosophically instructive. This rite symbolizes the purification of the participants and creates a metaphorical relationship between the physical space where it is enacted and the cosmos. Taboos also confirm the symbolic power of food. In ancient cuisine a common rule was to avoid particular foods until sacrifices were performed. During sacrificial rituals, humans fed and communicated with their ancestors living in a supernatural realm, and once the spirits had finished eating and drinking, humans could not waste the food, but had to share it out for consumption. Some good examples are the *Hyakinthia* culinary rituals in Sparta and the Pythagorean and Orphic culinary customs. As well known, meat provides the most striking taboo in antiquity. Yet, in ancient Egypt, beans were treated with the same awe because of their association with the soul's transmigration. Nowadays, in the Indonesian island of Sulawesi, the nobility and their serfs are strictly forbidden from eating white buffalo, great river eel, and white chicken because their mythical ancestor, Tana Toraja, had united with a water sprite of the Sa'dan river. The close relationship of food with mystical/spiritual ideas is patent, especially where recipes are institutionally cooking rules

and religious precepts. The Jewish Kosher food is an emblem since cooking instructions (*kashrut*) are contained in the Talmud. According to Jewish tradition, cooking is not simply nutrition, but, like religious rituals, a path toward a richer extra-material sphere. The symbolic dimension of cooking is well depicted by many ceremonies and feasts such as *Rosh Hashanah*, the meal preceding Yom Kippur, Sabbaths, weddings, funerals, etc. At *Chanuka*, it is common to fry pancakes in oil in memory of the miracle of the Maccabean revolt. At *Tu B'Shvat*, fruit representing spring is served in addition to *kanape*. At *Purim*, *Hamantaschen* cookies are prepared to recall the episode of the Book of Esther where Haman plots to destroy the Jewish community in Persia. At *Shavuot*, which commemorates the giving of the Torah at Mount Sinai, cookies are baked in the shapes of mountains and Torah scrolls. Cleaning rice is one of the most difficult ceremonies performed during Passover, when on the first night, Jews take part in a ritual meal in which the story of the Exodus is recalled with *matzah*, the unleavened bread of affliction.

Anthropological and Social Implications

Food preparing concerns theoretical issues related with personhood and fundamental anthropological and ethical questions, to begin with the essential values of life and death. Cooking rituals teach us how food preparing is related to human nature and the view of our ancestors about humankind and the survival of the race. Traditional food ceremonies, such as Mexico's Day of the Dead Ceremony, are in many cases a heritage of native ancestral rituals incorporating those of immigrants and conquerors, and thus, they are a privileged viewpoint for a more general inquiry into the concepts of life and death (Brandes 1997). The use of food offerings placed on graves or adorning home altars or idols are an important way to put the living in touch with the dead. This shows that peoples conceive food rituals as symbolic ways to communicate with their lost ones. Such offerings invariably include starchy foods,

either savory or sweet. A famous example is the Portuguese *folar*, an ancestral food symbolizing solidarity and brotherhood. In Ancient Greece, the practice of offering bread or sweets to deities and preparing cakes for public celebrations had both a collective and individual significance. It is meaningful that cooking rituals related to death and life involve sweets and starch. As these foods contain glucose, an important energy source, bread and sweets offered at death ceremonies are expressions of life, vitality pleasure, and richness. Another ethical and social issue involved in cooking rituals regards differences between the genders and, conversely, equality between female and male (Goody 1982). The assumption that food is related to women is embedded in the history of ideas of many cultures, starting with the Western matrilineal structure. Firstly, ancestral cuisine is related to the mother role in the construction of families and communities. And then biological, social, and cultural elements all point to deep connections existing between cooking rituals and procreation. In many cultures, the kitchen is the place where social and gender relations are shaped. This displays the creative dimension of cooking and the intimate unity between body and mind embedded in activities involving food. The emotional and social dimension of cooking is well illustrated by Bangangté traditions and their idioms regarding procreation and gender division (Feldman-Savelsberg 1995). Among this Cameroon population, wives stay in the kitchen most of the time and welcome the guests either there or outside in the yard, while the other rooms are the realm of their husbands. Though Bangangté women no longer give birth in the kitchen, they continue to consider gestation as a long cooking process and talk about the full-term fetus as "cooked food" or "porridge." Men refer to sexual intercourse as "tending the fire." In the Bangangté view, the continual mixing of procreative fluids (water/sperm and oil/blood) produces a smooth and tasty meal (a healthy birth). Accordingly, Bangangté women describe their feelings about their swelling bellies like the smell of cooking maize. A double connection between cooking rituals and the human attitude toward the values of life and procreation lies

behind these ideas. Firstly, ancestral cuisine reflects our gender relations and convictions about the sexual sphere and social status of persons; besides, many cooking rituals associated with human sexuality and fertility are not only aesthetic rituals but also practical tools to implement a precise social and gender structure. Ancestral cuisine is a precipitate of our way of thinking and living together, and, furthermore, it is an artifact that concretizes desires and aspirations about social status. So, it is significant that food offerings are of paramount importance in many child-naming ceremonies where certain foods are offered to the infant as symbols of purity, power, health, wealth, and prosperity. The broad idea is that we are what we eat and that our lives and social roles are reflected in what and how we eat, an idea which is present in mythology and many idioms too. For instance, water and rice are the basis of ancestral cuisine and many cooking rituals, and in some idioms or myths, eating rice mirrors being and water denotes the power of plants and animals. Furthermore, ancestors are sometimes seen as seminate spirits growing from water (Bloch 1985). Cooking rituals are also a testimony of the historical coexistence between peoples belonging to different cultures and are a way to promote dialogues. This is not a proposal but a historical experience, since nowadays many national cuisines display this mixture of different culinary practices. Some experiences demonstrate that cooking rituals are able to overcome social and moral conflicts and divisions, and so they represent a powerful force to create a common background across populations. The Mediterranean cuisine is an outcome of the interplay of different culinary and cultural traditions. Around the Mediterranean sea, Christians, Jews, and Muslims today prepare and eat similar dishes based on fish, poultry, and eggs for marriage feasts, funerals, and other special occasions.

Politics, Ethnicity, and Identity

Processing food has many ethnical and political implications concerning identity and reciprocity

among people and political authorities (Flandrin et al. 1999). In many societies cooking rituals are instrumental to political aims or are the symbols of special political powers. Peoples ascribe to ancestral food customs political meanings, too. Especially among immigrants culinary lexicon and cooking practices are a symbol of their communities' history and a reminder of their homeland. For instance, nowadays spices are largely used and carefully preserved in pouches to recall the forced Atlantic passage back in the slave trade. Moreover, to exchange food or to eat together, the same food according to a rite is a way to express trust and loyalty or manifest consent. Eating from the same cooking pan may denote a strong sense of fellowship; conversely, eating some kinds of food or someone else's dish may mean the opposite. In some cultures, there is the use of sharing food with relatives and neighbors in memories of ancestors. That can be also a sign of distinction and exclusion. Ways of processing food were introduced by political authorities in order to distinguish the culture of the land from foreign ones and in consequence build a distinct national identity. Moreover, to adopt a cooking ritual can be interpreted as a privilege of a class or group. As well, cooking rituals may be adopted to support a political primacy. Food ceremonies can also celebrate political powers within a community or the domination of one group over another. With the Incas *chicha* was associated with imperial power: the city of Cuzco was also called *Akhamama* which means "*chicha* mother," and *akhamama* is the fermenting agent used to brew *chicha*. Hence, *chicha* mother is a metaphor for the role of Cuzco in Andean politics. Iconic dishes are also powerful signs of national identity. This is well illustrated by the Vietnamese *Bánh Tét* prepared at *Tết Nguyen Dan*, the ceremony that celebrates the origin of sunlight. The entire cuisine of some populations is ritualistic and based on archetypal foods: Japanese cuisine and its rice culture are emblematic. From these experiences we see that the meaning of cooking rituals for a community may change, according to the political and historical context. To recall the

cuisine of the ancestors may have positive or negative connotations and effects with regard to present politics. Especially for those ethnical groups that suffer exile or persecution, cooking rituals refer to the past and, hence, express acute feelings of nostalgia. Alternatively they can express desire for peace, but even revenge. Legends about the lands and the foundation of the nations or about the origin of an ethnic group are sometimes embedded in ancestral cuisine. Nowadays the renewal of cooking rituals of our ancestors often conveys deep ideas about political powers among the peoples, and it is a way of conserving basic political conceptions about government and/or perpetuating traditional attitude toward democracy or aristocracy and/or the role of man and women in the public sphere. Ancestral cuisine shows that identity is a value which can be considered from both a collective and individual point of view. This is true especially when cooking rituals, such as Andean's *entrada*, are symbols of the identity of an ethnic group. Such collective practices in daily life or special ceremonies can assume more profound significance to individuals too: preparing and eating together dishes made of native ingredients may evoke mutual recognition (Hastorf 2012). In cooking rituals politics is frequently mixed with religion. In many cooking rituals pleas to political authorities are mingled with manifestation of gratitude to deities. Nowadays, in West African agricultural economies, indigenous cooking rituals based on the yam are a way to recall flourishing ancient clans and kingdoms. In some areas they are still an occasion for tribes to pay tribute to the king and gods in memory of their ancestors. In many Pacific archipelagos, first fruit ceremonies are based on yams, and they are typically associated with chiefship and ancestral deities. With its seasonal lifecycle, the yam is the fulcrum of the calendar and diet but is also a cultural icon. At the *i sevu* festival, new yams are offered to the gods and shared among the people to promote health and prosperity for the community. According to tradition, Fijian villages are an association of kin groups that claim to have separate ancestors. Thus, sharing food indicates solidarity and can also mediate

political tensions (Turner 1984). Furthermore, ancestral and ritual culinary practices can be evocative of the social hierarchy and political organization of a community. Food activities may define the relationships and the status of individuals within the community as well as between communities. Customs in Sulawesi are a good example. At the king's funeral in 1969, the Makale nobility were plied with a meal based on pork, rice, and betel to renew ancient feudal obligations. All the king's food and everything concerned with it are kept apart, even from his closest family. Food and political patterns are often metaphorically associated. In the ancient Chinese Laozi doctrine, it is common to compare governing the state to frying small fish. Cooking rituals are in some cases a real political practice, so that even the civil service and the education system for the top cadres include learning culinary techniques and food rites. Finally, foods can be icons of political and/or social institutions. In some cultures eating in compliance with a precise rite becomes a distinctive feature of civilized people. Some communities have developed a hierarchy of social status based on food taxonomies. As is well known, in many societies cereals were and sometimes still are emblems of the public ceremony officiating marriage as the basic institution of the society.

Summary

Ancestral cuisine is neither just a form of art nor a relict of the past. On the contrary, by exploring ancestral culinary practices, we can understand that food preparation is a multifaceted phenomenon and a complex human practice. It has a great philosophical significance since its implications on our life are far from being transitory and purely material (Curtin and Heldke 1992). An inquiry into ancestral culinary practices is a good way to reflect about the relationships existing between our physical needs and our minds insofar as the body is inextricably connected with emotions and ideas about human nature. In addition, cooking rituals are habits

shaped by cultures and spiritual/religious/mystical ideas. Food ceremonies often show beliefs on personhood and conceptions about the self and others or about the relation of humans with nature. Ancestral culinary practices reveal moral and social convictions and show that preparing food may be an activity involving implicit values. Ancestral cooking practices rely on archetypes about the gender and self-identity of peoples and are a testament to the political history of a community and its social hierarchy. They also reveal the role played by natural resources and the environment as well as technical expertise and nutritional factors.

Cross-References

- [Cannibalism](#)
- [Ethnicity, Ethnic Identity, and Food](#)
- [Food and Class](#)
- [Local and Regional Food Systems](#)

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Animal Agriculture and Welfare Footprints

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Synonyms

Agriculture; Animal rights; Animal welfare; Consumer ethics; Food ethics; Labor rights; Meat; Omnivorism; Vegetarianism

Introduction

Agriculture and wild food harvesting impact the welfare of humans and other animals in many ways. The total impact on welfare varies according to the foodstuffs in question as well as the methods of production or harvesting used. Just as different lifestyles have different sized carbon footprints, different diets have different sized welfare footprints or total negative consequences to the welfare of sentient humans and nonhuman animals. Because every diet has a welfare footprint, the salient questions concern the size and moral salience of welfare footprints. This entry surveys the connections between human dietary choices, agriculture and other forms of food procurement, and welfare footprints, particularly as they pertain to nonhuman animals.

The Concept of a Welfare Footprint

In an increasingly globalized, industrialized, and urbanized world, many people are becoming more aware of the impacts which their consumption of goods and services has on the welfare of other human and nonhuman animals. The result of this increased cognizance of welfare footprints is that many people change their patterns of consumption in order to reduce their welfare footprint.

While the term “welfare footprint” is newer and lesser known than terms such as “carbon footprint” and “ecological footprint,” the underlying concept is similar. Blood diamonds, for example, are a widely acknowledged example of the core concept of the welfare footprint for a nonfood good. These diamonds, also known as conflict diamonds, are mined in conflict zones and used to finance military insurgency, destabilizing regimes causing loss of life, including through the forcible use of child soldiers. Some would-be consumers opt not to purchase diamonds at all in response to the problems of diamond extraction and trade. Some players in the diamond industry are attempting to reduce the welfare footprint of diamonds by producing conflict-free diamonds. The Kimberley Process Certification Scheme is one such attempt.

Another familiar example illustrating the concept of welfare footprints, also concerning solely humans, is coffee production. The coffee market can be volatile, and small farmers can have difficulty competing on price alone against industrialized operators. While subject to various criticisms, fair trade coffee aims to produce coffee without the exploitative use of low-wage farm laborers, as is common in the tropical regions of the world where coffee is produced.

Coffee production also offers an example that helps transition to the welfare of nonhuman animals. Shade-grown coffee is a system of coffee production, which intersperses coffee shrubs with trees in order to provide habitat for wildlife, particularly birds in coffee plantations. Coffee is often grown in mountainous regions once covered with upland tropical forests possessing immense biodiversity, and so shade-grown coffee

is a form of environmental remediation and habitat enrichment for endemic and migratory wildlife. The Rainforest Alliance offers certified shade-grown coffee and is endorsed by the National Audubon Society for its positive impact on migratory bird populations.

Food and Welfare Footprints

Having discussed some common examples of nonfood products illustrating welfare footprints, the connections between food and welfare footprints remain to be discussed. Many consumers now recognize that the welfare of nonhuman animals is impacted by the products they consume, especially food. The total impact on nonhuman animal welfare, both on animals directly consumed and on animals otherwise harmed in agricultural production or wild food harvesting, varies considerably depending on the foods one chooses to eat and how these foods were produced. Granting that animal welfare is morally significant, the size of one’s welfare footprint is morally salient and dependent on what one eats.

A number of complex factors enter into determining the welfare footprint of various. There are three distinguishable ways in which animals’ welfare is impacted by food procurement. These will be discussed in turn.

The first, perhaps most familiar way is in which animals raised for human consumption are treated. Living conditions and treatment from birth through slaughter constitute this potential contribution to a welfare footprint.

The second way involves animals harmed during animal agricultural production or the harvesting of wild animals yet not eaten. This includes accidents, bycatch, disease, and culling. A prominent example of culling occurs in chicken egg-laying factory farms where male chicks are simply discarded at birth because their lives are useless for egg production.

A third way involves animals harmed in the production or harvesting of food to be fed to humans or other animals. For example, aquatic animals are harmed to produce fishmeal used to

feed captive fish that are raised for human consumption. Less discussed are harms to field animals resulting from plant agriculture such as corn for human consumption or animal fodder. Even diets free of animal products have welfare footprints in the form of harms to these field deaths. This issue is discussed further below.

Indirect harms to other animals resulting from animal agriculture are more widespread, however. The Food and Agricultural Organization (FAO) of the United Nations concludes in no uncertain terms that “the livestock sector emerges as one of the top two or three most significant contributors to the most serious environmental problems, at every scale from local to global” (FAO 2006). The ripple effects of animal agriculture on wild animals and the broader environment are immense, perhaps incalculably so, yet also contribute to the welfare footprints of diets containing animal products.

Animal Agriculture and Human Welfare

Animal agriculture also has costs in terms of human welfare, both of workers and of those in surrounding communities. The negative effects on humans, which contribute to welfare footprints, are particularly high for industrial animal agriculture. Upton Sinclair’s classic 1906 novel *The Jungle* portrays the conditions in which early twentieth-century immigrant laborers worked inside meatpacking facilities on Chicago’s stockyards. Although *The Jungle* is fiction, Sinclair worked undercover in the industry for several weeks to gather information in order to accurately portray working conditions inside slaughterhouses. The president at the time, Theodore Roosevelt, was so disturbed by Sinclair’s novel that he ordered an investigation into the meatpacking industry. This resulted in the 1906 passage of the Pure Food and Drug Act and the Federal Meat Inspection Act. The regulatory body associated with enforcing these acts is now known as the US Food and Drug Administration (FDA).

In the United States, there are approximately 700,000 workers employed in Concentrated

Animal Feeding Operations (hereafter CAFOs), colloquially known as factory farms. A further 500,000 workers are employed in the slaughterhouse and meatpacking industry. These workers are predominantly immigrants and people of color. Thirty-eighty percent of these workers were born outside the United States. Fast line speeds lead to injuries and repetitive manual labor leads to overuse injuries such as carpal tunnel syndrome.

The quality of life in surrounding communities is also affected by factory farms from the copious amounts of excrement they produce. Manures transmit more than 40 diseases to humans, including *E. coli*, fecal coliform, and Salmonella. North Carolina has ten million hogs, which produce twice as much excrement and urine annually as the human populations of Chicago, Los Angeles, and New York combined. This waste is stored in large lagoons or sprayed, untreated, on adjacent fields. The stench can be unbearable and the hydrogen sulfide emitted can cause flu-like symptoms and brain damage. Water contamination also results. Livestock are a major source of nitrate pollution in groundwater, which is linked to spontaneous abortions and infant mortality. Runoff and catastrophic lagoon failures pollute streams, rivers, and lakes causing eye infections and leading to algal blooms of the dinoflagellate *Pfiesteria piscicida* which have killed tens of millions of fish in the United States and cause acute skin burning, cognitive impairment such as memory loss and confusion, gastrointestinal, and other symptoms in humans (EPA 2001).

Animal Death and Animal Welfare in CAFOs

The number of land animals raised and slaughtered for food in the United States has varied between 8.9 billion and 9.5 billion annually from 2000 to 2011. When sea animals are also taken into account, the number of animals slaughtered annually increases to approximately 30 billion. In what is perhaps the most complete estimate of the total number of animals died

annually to feed Americans, Noam Mohr calculates that 63 billion animals died for the American palate in 2011. This figure includes animals killed but not eaten such as animals which are converted to fishmeal and “discarded” male chicks from egg-laying operations, but notably does not include field deaths resulting from the cultivation of animal feed. Mohr calculates that the average American’s diet equates to the death of 1/8 of a cow, 1/3 of a pig, 5/6 of a turkey, 25.5 chickens (including 1.5 for egg production), 43 fish, and 134 non-fish aquatic animals each year. This amounts to 16,000 animals per American when extrapolated over a lifetime (Mohr 2012).

Global meat consumption has increased dramatically in recent decades as has the exportation of factory farming techniques from the United States to countries abroad. Annually, approximately 53 billion animals are killed for consumption worldwide. Since 1950, worldwide consumption of animals has increased five times.

In addition to the number of animals killed, the size of the animals one eats is also a factor in welfare footprints. For example, if one were to eat solely chicken rather than beef and assuming that the chickens and cows were reared in similar conditions such that they had similarly poor welfare, one’s welfare footprint would be markedly larger because the number of chickens needed to fulfill one’s nutritional needs would be much larger than the number of cows needed to produce the same quantity of food. To quantify the issue in 100-g serving sizes, an average sized cow of 1,600 lb at slaughter before processing yields approximately 1,000 servings, a 300-lb pig yields approximately 650 servings after processing, and an average sized so-called “broiler” chicken weighs approximately 5 lb yielding around 12 servings. Since a person’s nutritional requirements are largely stable over time, and animals of different species differ in size by many orders of magnitude, a conscientious omnivore concerned with reducing his/her welfare footprint minimizing the number of animals he/she consumes could tailor his/her meat consumption accordingly (MacClellan 2013).

The conditions in which animals are raised and the manner of their deaths are essential

aspects of a diet’s welfare footprints. The vast majority of chickens, pigs, and turkeys raised for food in the United States spend their entire lives in CAFOs. Most cattle spend their final weeks in CAFOs for “corn finishing” as well. Increasingly, fish such as carp, tilapia, salmon, and grouper are raised in aquacultural CAFOs. Shrimp and prawns, invertebrate animals, which may be sentient, have been aquacultured since the 1970s.

Animal welfare in CAFOs is extremely low compared to relevant alternatives and is likely sufficiently low that lives lived in such conditions are lives not worth living. Factory farming has been condemned from a wide variety of moral perspectives, even by Pope Benedict XVI, religious authority to a tradition which believes that humans are categorically superior to all other animals and granted “dominion” over them. The welfare footprint of a diet containing factory-farmed animal products is invariably larger than a diet not containing animal products produced in factory farms.

Cross-References

- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)

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Animal Welfare in the Context of Animal Production

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Synonyms

Animal care; Animal ethics; Animal husbandry; Quality of life

Introduction

Traditionally, the term “animal welfare” has been used to refer broadly to the “quality of life” of animals especially when people raise concerns about how animals are treated. This entry attempts to clarify some of the confusion that has arisen around the term, partly because different people view the quality of life of animals through different value-based lenses.

Three Broad Concerns

In the 1700s and 1800s, concern about the treatment of animals was generally expressed in terms of “cruelty,” and the main focus was on deliberate acts of animal abuse or neglect. With the growing intensification of animal production since 1950, concern was often expressed about unintended effects of confinement production systems on the quality of life of animals, and these were generally captured under the broader term “animal welfare” (Woods 2012).

The term “animal welfare” has been used, especially in social commentary and debate, to capture three broad concerns that arise over the quality of life of animals (Fraser et al. 1997).

The first concern focuses on the “affective states” of animals including pain, fear, comfort, contentment, and other emotions and subjective states that animals experience as either pleasant or unpleasant rather than hedonically neutral.

For example, commentators have called for animals to be treated in ways that prevent pain and distress or to be allowed to experience the pleasures of life.

The second concern focuses on the basic health and biological functioning of animals including appropriate nutrition, prevention of injury and disease, and appropriate protection from harsh weather and other dangers. Thus, the World Organisation for Animal Health (OIE) refers to “a critical relationship between animal health and animal welfare” (OIE 2012).

The third concern is that animals should be able to live in a reasonably “natural” way. This can involve two components. One is simply that animals should have natural elements in their environment such as sunshine and fresh air. A second concern is that animals should be able to live in ways that suit their natural adaptations including their natural behavior. Critics might call, for example, for animals to be able to carry out their natural feeding and nest-building behavior and to be fed on diets that suit their digestive systems.

Sometimes these different concerns go hand in hand. For instance, allowing a pig to wallow in mud on a hot day might be seen as good for the pig’s welfare because the pig will feel more comfortable (an affective state) and will have less disruption of bodily processes through heat stress (basic health) and because the animal can perform its natural cooling behavior (natural living).

However, the three concerns are sufficiently separate that the single-minded pursuit of any one often fails to address the others. A hygienic laboratory cage may provide a high level of physical health but allow animals little opportunity to perform their natural behavior. Generous feeding of dogs may provide the animals with pleasure but lead to health problems and a short life span. “Free-range” systems for pigs allow fresh air and natural behavior but often involve harsh weather and high rates of neonatal mortality.

The three areas of concern are emphasized to different degrees by different people. Many animal protectionists focus on the affective states of animals; they may call, for example, for pain management to be used for procedures such as dehorning and castration, whereas animal

producers tend to downplay the significance of short-term pain. In general, animal producers who raise animals in indoor confinement systems tend to emphasize basic health to the extent that they justify keeping animals in very restrictive environments on the grounds that this helps prevent injuries and disease. In contrast, most studies show that members of the general public in Europe and North America tend to emphasize the naturalness of the environment and to downplay physical health (summarized by Sørensen and Fraser 2010); in fact, some people virtually equate animal welfare with “natural” living conditions. Ranchers who raise animals on pasture, together with some organic producers, tend to have a more mixed view, seeing natural, outdoor environments as generally providing a good life while acknowledging that the animals may suffer from some discomfort and ill health as a result.

Why Are There Such Different Views of Animal Welfare?

The different views of welfare have deep roots in Western culture which can be traced back at least to the Industrial Revolution. At that time, opponents of industrialization tended to espouse values associated with agrarianism and the Romantic Movement. Such opponents valued nature ahead of technology and emotion ahead of rationality. They saw industrialization as reducing quality of life because it disfigured the natural landscape and forced people to give up wholesome rural living for dangerous factories and unhealthy cities. In contrast, promoters of industrialization, reflecting a set of values linked to the Enlightenment, saw nature as imperfect and looked to science and technology to overcome its shortcomings. They saw industrialization as a form of “progress” and interpreted the high productivity of the factories as evidence that the factory environments were well suited to the workers.

When animal production intensified during the twentieth century, the change was widely perceived in the industrialized countries as a further instance of industrialization, and it triggered a debate that mirrored the arguments that had

arisen over the Industrial Revolution (Fraser 2008). Critics, often using explicitly industrial phrases such as “factory farming” and “animal machines,” saw intensification as moving animals from wholesome natural settings into restrictive artificial ones which are not suited to the nature of the animals. They questioned whether animals could be healthy and happy in such environments and called for animals to be free to live in more natural ways. Promoters of intensification saw the new methods as using science and technology – vaccines, scientifically formulated diets, and insulated buildings – to protect animals from the hardships of nature, and they took the high productivity of these systems as evidence that they were well suited to the animals.

Critical Evaluation

Each of the three broad concerns has been the subject of debate and critical analysis.

With their focus on basic health, some animal producers and veterinarians have argued that because the productivity of animals is reduced by disease and injury, a high level of productivity must demonstrate a high level of animal welfare. This view has been hotly contested since the 1960s. For one thing, high levels of physical health are seen as only one aspect of animal welfare. Moreover, intense genetic selection for very high levels of productivity has led to “diseases of production.” For example, genetic lines of dairy cattle that have been bred for very high milk production tend to have high levels of metabolic disorders and a short life span. Thus, although good health is almost universally acknowledged as fundamental to animal welfare, the links between health, productivity, and welfare are widely recognized as needing critical analysis.

Many people see the affective states of animals, or “subjective well-being,” as the ultimate criterion of animal welfare and regard good health, natural living conditions, and other factors as merely contributing to welfare inasmuch as they contribute to subjective well-being. Thus, the absence of pain and suffering and, conversely, the ability to experience pleasure and

contentment are viewed as the definitive elements of animal welfare. In the environment in which a species evolved, such affective states are thought to have evolved to make the animal seek what is beneficial and avoid what is harmful to its evolutionary fitness (Dawkins 1998). In artificial environments, however, this correlation may break down. Animals (like human smokers) may not dislike, or even detect, pollutants that affect their health; animals may find rich diets highly palatable even though they lead to obesity and other health problems; vaccinations, although causing pain, can improve future health. To many people, therefore, animal welfare needs to be seen as a balance between subjective well-being and longer-term health.

The call for animals to live reasonably “natural” lives has been especially controversial. In Europe and North America, the tendency of the public to equate animal welfare with “natural” environments has led to calls for animals to be kept in outdoor systems. However, some animal producers note that outdoor systems present challenges including harsh weather and exposure to infectious diseases. Moreover, biologists who have studied the natural behavior of animals point out that environments that appear natural to the human onlooker may not correspond well to the actual needs of the animals. For example, chickens are descended from jungle-dwelling ancestors, and they tend to avoid untreed pastures that are used in some free-range systems. Such considerations have led to more critical approach that calls for animals to be raised in ways that correspond to their natural adaptations. This would include physical and social environments that allow important types of natural behavior, temperatures that match their thermoregulatory capacity, and diets that correspond to their digestive systems.

If no single approach is likely to optimize animal welfare according to all criteria, the emerging practical response appears to be the development of two contrasting kinds of production systems. One accepts the health-protection features of controlled indoor environments but adds features that accommodate the natural adaptations, behavior, and preferences of the animals.

For example, enriched indoor environments for laying hens can accommodate important types of natural behavior such as nesting, perching, and dust bathing while still preventing the entry of predators and disease organisms. A second approach begins with unconfined systems but adds greater protection from parasites, predators, and harsh weather. These different approaches are likely to appeal to different producers and consumers, but both should provide valid ways of improving animal welfare.

Animal Welfare as a Topic for Moral Philosophy and Science

As well as being a focus of public concern, animal welfare has also become a topic of study and debate among moral philosophers and scientists.

Early utilitarian philosophers, notably Jeremy Bentham and John Stuart Mill, although focused mainly on humans, tended to see good actions as those that promote happiness and prevent suffering. Following these ideas, some modern philosophers have emphasized the affective states of animals including states of pain and pleasure. Others, adopting ethical views loosely linked with Aristotle, have called for animals to be able to live in ways that correspond to their “natures.” Yet others believe that animals should be able to develop their “capabilities” or express their “essential possibilities.” Thus, philosophers have adopted different ethical views, modeled largely on different theories of human quality of life (Appleby and Sandøe 2002) and corresponding roughly to the three broad concerns about animal welfare described above. In contrast, however, other philosophers, especially those who apply rights-based theories and call for all use and ownership of animals to cease, tend to dismiss animal welfare as an inadequate concept for decisions about human conduct toward animals.

Concern over animal welfare has also stimulated a large body of scientific research. In the early days of this work, some people believed that objective scientific measurements would resolve disagreements that arise because of the different views of animal welfare. In fact, however, the

various scientists studying animal welfare tacitly adopted the different views of welfare as the basis for their research (Fraser 2008). Some sought to improve animal welfare by reducing problems of basic health, for example, by devising environments that do not cause injuries or that prevent the transmission of disease. Other scientists focused on affective states, for example, by developing methods to manage pain or methods of handling animals without causing fear (Hemsworth and Coleman 2011). Yet others tried to make rearing systems better suited to the animals' adaptations, for example, by developing diets that match the animal's digestive system or feeding systems that accommodate natural feeding behavior. As these examples illustrate, rather than arbitrating among the different views of animal welfare, the science incorporated the different views as a basis for a diverse program of animal welfare research and innovation.

At times, however, the different scientific approaches have led to conflicts because scientists using different criteria for animal welfare have arrived at different conclusions on contentious issues. For example, scientists who emphasize basic health may conclude that welfare is satisfactory in very restrictive housing systems as long as basic health and productivity are assured, whereas scientists who emphasize natural behavior may conclude that welfare is poor in such systems simply because they are so restrictive. The key to understanding such disputes is to recognize that they result from the different scientists using different criteria of animal welfare (Fraser 2008).

Controversies

Beyond the issues noted above, other controversies have arisen over the welfare of farmed animals.

One controversy is simply over the semantic use of the term. "Welfare" has been used for centuries as a broad term referring to good fortune, health, happiness, and prosperity, and this usage has been the basis for using "animal welfare" in the sense of the animals' quality of life. However, "welfare"

also has a second, more recent meaning which refers to programs and reforms designed to provide food, shelter, and other benefits to vulnerable members of society. Given the possible confusion, the literature has generally followed Broom (1991) in using "animal welfare" to refer to the state of the animal, not to external benefits provided. In addition, the historical meaning of "welfare" implied a positive state (*good* fortune, happiness, and so on). However, because much discussion of animal welfare is about negative states such as pain and deprivation, "welfare" (like "health") has come to refer to a scale running from bad to good, not just the positive end of the scale.

A second controversy centers on whether animal welfare can be "measured." It is certainly possible to measure many variables that are relevant to animal welfare such as disease incidence, the level of stress responses in different environments, and the strength of an animal's motivation to carry out elements of its natural behavior. However, despite the best attempts to see animal welfare from the animals' own "point of view" (Dawkins 1990), there is no purely objective way to balance the different elements of animal welfare. There is no metric, for example, that allows us to say whether freedom of movement is more important or less important than freedom from ectoparasites. According to this logic, to speak of "measuring" animal welfare is to mistake the nature of the concept. By this view, the legitimate contributions of animal welfare science are to inform the debate about animal welfare and to improve animal welfare by identifying and accommodating the needs and natures of the animals, but not to "measure" animal welfare in some overall sense.

A third controversy is whether scientists and philosophers should use the term "welfare" in its everyday sense – as an umbrella concept covering the different concerns noted above – or in a more restrictive, technical sense. Some scientists, perhaps wishing to make animal welfare more amenable to objective scientific evaluation, have proposed technical definitions that link welfare to established scientific concepts such as fitness or to measurable variables such as longevity and productivity. Some philosophically informed

commentators, attempting to identify the philosophical essence of the concept of welfare, have also proposed narrower definitions, often equating welfare with subjective well-being (Duncan 1996; Nordenfelt 2006). An alternative view holds that when a term is widely used in the public domain, there is a risk of confusion if scientists or philosophers use the term in a different or more narrow sense; indeed, scientific or academic discussion might thus become divorced from the public debate that they are intended to inform.

Summary

“Animal welfare” refers broadly to the quality of life of animals. In discussing animal welfare, people have expressed three broad areas of concern: the affective states of animals such as pain, fear, and contentment; the basic health and biological functioning of animals including freedom from disease and injury; and the ability of animals to live in reasonably “natural” ways. Because different people emphasize the different concerns to different degrees, they (in effect) espouse different views of animal welfare which sometimes come into conflict. The different views of animal welfare have deep roots in Western culture, dating at least from the conflict spawned by the Industrial Revolution. The different views of animal welfare are also reflected in the different theories of animal ethics and in scientific research on animal welfare.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Telos and Farm Animal Welfare](#)

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Animal Welfare: A Critical Examination of the Concept

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Synonyms

Animal ethics; Animal welfare science; Animal well-being; Prudential value theory

Introduction

The past half-century has witnessed a dramatic increase in both philosophical and social concern about animals. Much of this concern is about animals' moral standing and the ethical permissibility of various animal-harming practices. However, a parallel track of concern relates to animal mind and animal well-being. Some of the motivation for concern about animal mind and animal well-being can be traced to scientific curiosity; however, the investigation of what animals are like, and what makes an animal's life go well or poorly, is an important part of moral philosophy. Normative judgments about what humans owe animals usually presuppose some account of what is beneficial or harmful to them, and philosophical work in normative ethics therefore must proceed apace with conceptual and empirical work regarding animal welfare. In addition, an important historical and sociological aspect of debates about animal welfare is that they take place in the context of a society in which animal use is pervasive. Often, the persons who investigate animal welfare, and the institutions in which such investigations take place, are closely connected to various forms of animal use, for example, agriculture and biomedical research. While investigations into animal welfare are often intended to improve the lives of animals being used for various human ends, such investigations are often permeated by political concerns as well. This entry briefly reviews important philosophical and political issues relating to the definition and assessment of animal welfare.

Animal Welfare: A Science-Based Concept?

A major issue in the history and philosophy of animal welfare is the extent to which animal welfare is a scientific concept. A historically prominent view is that animal welfare or its assessment is "science-based," a view that continues to enjoy popularity in some quarters (see Tannenbaum 1995; AVMA 2003; Korte 2007).

Commentators who advance this claim usually seem to understand "science-based" as positively entailing empirical verifiability and as negatively being distinguished from "value-based" or "emotion-based" accounts of animal welfare. Other commentators who do not explicitly assert that welfare is science-based nonetheless define it in similar terms.

A close connection exists between science-based conceptions of welfare and the philosophy of logical positivism. Logical positivism, which dominated scientific thinking for a large part of the twentieth century, holds that only empirically verifiable statements are meaningful. Two corollaries to this view are that (1) statements about non-observables, such as mind, are illicit unless translated into empirically verifiable terms and (2) evaluative statements, such as statements about aesthetics or morality, are meaningless because they are not empirically verifiable. Though logical positivism has since fallen from prominence in philosophical circles, it has played a large part in the history of thought about animal mind and animal welfare. Rollin (1990) has shown how this philosophy influenced the development of psychological behaviorism, which held talk of animal mind to be illegitimate, and replaced such talk with talk of physiology and behavior. Hence, "animal welfare" as a concept referring to subjective experience came to be replaced or defined by such terms as "stress" or "coping." In addition, positivism separated science from ethics, and so once talk of animal well-being was scientized, welfare as a concept was viewed as value-free.

Scientific information, such as information about an animal's physiology or behavior, can be crucial in *assessing* what is beneficial or detrimental to an animal's welfare. However, the view that animal welfare as a *concept* is "science-based" is subject to numerous criticisms. First, logical positivism has been criticized for a number of reasons, such as that the principle of verification it espouses cannot itself be verified, and because normal scientific practice involves both moral and methodological value judgments (Rollin 1990; Jones 1975). Furthermore, the moral theory of emotivism

(a corollary to logical positivism) also appears untenable in at least the simple forms that preclude any degree of moral objectivity (Rachels 1993). To the extent that “science-based” views of animal welfare trace back to logical positivism and emotivism, they inherit these difficulties. Second, the very meaning of the term “welfare” refers to an individual’s well-being, to what is good or bad for that individual – this is by definition an evaluative judgment (Fraser 1995). Third, it can be observed that no amount of scientific information in itself will answer questions about an animal’s welfare, because a person can always ask why such a thing is good or bad for the animal, and only an evaluative judgment can answer this question.

Competing Definitions of Animal Welfare

A second major issue in the definition of animal welfare concerns the critique of multiple, competing definitions. Fraser and colleagues (1997) organize definitions of animal welfare into three categories: “feelings-based” definitions, which focus on an animal’s mental states and how it feels; “natural-living” definitions, which focus on an animal’s ability to express natural (i.e., “species-typical”) behaviors or live in natural conditions; and “function-based” definitions, which focus on such things as normal physical functioning, the absence of disease, survival and reproductive fitness, and adequate coping (adaptation) to various environmental stimuli. When considering these various definitions of animal welfare, further distinctions can be made between “type 1,” “type 2” and “type 3” definitions. Type 1 definitions of animal welfare define the concept in terms of single, measurable attributes, for example, an animal’s cortisol levels. Type 2 definitions hold that animal welfare is a single attribute that cannot be measured directly but which can be estimated indirectly using various measures. For example, one might argue that an animal’s welfare is a function of pleasure and pain, and while these mental states cannot be directly measured, behavior or

physiological indicators can be used to estimate what an animal is feeling. Type 3 definitions hold that animal welfare is a function of multiple attributes that are not amenable to assessment in a determinate way, for example, a function of physiological and behavioral measures, bodily integrity, natural living, and subjective feelings (Fraser 1995).

One fundamental question concerns the plausibility of definitions of animal welfare that do not make reference to an animal’s subjective experience, such as definitions based on evolutionary fitness, physiological parameters, or purely behavioral measures. Such definitions may commit a category mistake: it may be the case that “welfare” *by definition* relates to what an individual desires, prefers, or otherwise cares about (e.g., enjoys). It is difficult to articulate a positive account of why something advances or sets back an individual’s welfare if that thing in no way relates to what that individual desires, prefers, or otherwise cares about – that is, definitions not referencing subjectivity in some fashion appear arbitrary. This argument can be strengthened by noting that major options in prudential value theory – that is, philosophical theory articulating what it is that makes a life go well or poorly at the most fundamental level – reference an individual’s subjectivity in *some* fashion (though exactly how may differ between theories).

For example, mental state theories such as hedonism define value in terms of pleasure and disvalue in terms of pain.

Desire-based theories define welfare in terms of the satisfaction of desires, and of course an individual must be conscious in order to have desires. Furthermore, desire satisfaction may be valuable because satisfied desires tend to bring pleasure (returning us to hedonism), or because they correlate to some other kind of mental state such as cognitive appreciation. Objective theories hold that a good life is characterized by certain objective goods (e.g., friendship, education), perhaps irrespectively of whether an individual desires these goods, but the way in which these goods putatively contribute to an individual’s welfare still likely references what that

individual experiences. Furthermore, the most plausible version of such objective theories may require that an individual desires the objective goods in question (see DeGrazia 1996; Heathwood 2006 for further discussion).

Behavioral, physiological, and functional criteria may still be relevant to animal welfare not as definitional criteria, but as criteria of *assessment*. For example, it could be argued that it is important for animals to fulfill natural behaviors because these behaviors correspond to preferences or needs, which when thwarted prevent an animal from experiencing satisfaction and/or cause unpleasant mental states such as fear, anxiety, or suffering. Similarly, one may hold that the absence of disease is important because disease causes pain or suffering, shortens an animal's life and thus its future opportunities for satisfaction, or reduces an animal's present opportunity range because of impaired eating, grooming, mobility, playing, etc. In addition, functional criteria such as cortisol levels may be indicators of welfare: when an animal is experiencing unpleasant mental states, one might indirectly document these by looking at cortisol levels. But it is important to stress that these indicators are being used to assess the welfare of an animal where its welfare is defined by reference to some subjective consideration(s).

It might be objected that bodily integrity or good biological functioning (e.g., the absence of disease) is at least partly definitive of an animal's welfare and not just of instrumental importance as relates to subjective experience.

It is unclear whether such an argument can be defended, as it seems to encounter the same difficulties as any definition of welfare not referencing subjectivity. Ultimately, the intrinsic importance of some kinds of biological functioning may simply be a considered judgment that a person either accepts or rejects. However, even if the intrinsic importance of biological functioning is accepted, the likely upshot is that an individual's subjective experience is a necessary but not sufficient component of any plausible definition of welfare – not that subjective experience becomes irrelevant.

Stipulating that plausible definitions of welfare must reference subjectivity still leaves open most major options in prudential value theory, as well as the question of whether welfare should be regarded as a “type 2” or “type 3” concept. Problematic cases are easy enough to identify. Something that brings an animal pleasure in the short term (say, eating a certain food) may detract from its welfare later on, for example, by causing disease. Similarly, an animal may go to great lengths to satisfy a desire, such as the desire to reproduce, and in so doing impose other welfare costs on itself, such as pain or injury. If animal welfare is to be regarded as a “type 2” concept, then it would seem that a clear winner in prudential value theory must be identified. This may be possible, despite problematic cases: for example, the fact that an experience brings pleasure now but pain later need not be regarded as an objection to simple hedonism, since something that is good in the short term can also be regarded without contradiction as bad “all things considered” (Heathwood 2006).

Similarly, one may attempt to correct desires by stipulating that they be informed or that what is of value is what one “desires to desire” (Smith et al. 1989; DeGrazia 1996; Heathwood 2006). However, the situation gets more complicated from here. Simple hedonism is vulnerable to other objections that cannot be reviewed here, and these objections may or may not be successfully answered by more sophisticated versions of the theory. Similarly, informed desire theory may just collapse into an objective value theory, but objective value theories have their own liabilities (see DeGrazia 1996 for further discussion).

At present, there remain unresolved issues in the conceptualization of animal welfare because of these philosophical difficulties, and it may be the case that the most defensible welfare definitions are pluralistic and indeterminate (i.e., type 3). However, it should be noted that many political disagreements about animal welfare do not trace back to these philosophical difficulties but rather to obviously problematic definitions of the concept (e.g., purely physicalistic definitions) or to questionable cost-benefit calculations (see below).

The Harm of Death

Views about whether or not death harms animals have serious implications for many of our animal-using practices. Though it is generally accepted that humans have strong reasons against animal cruelty, some argue that it does not follow that humans have strong reasons against the painless killing of animals in the prime of their life, since killing animals painlessly does not *harm* them. Harman (2011) helpfully reviews several arguments advanced in the literature for why death does not harm animals and concludes that each is false; the three most important are reviewed here.

First, it could be argued that death for a person is only bad because it frustrates her desires and plans for the future; and since nonhuman animals do not have abstract desires and plans for the future, death does not harm them. Putting aside the empirical question of whether or not animals have abstract desires and plans for the future, this argument is false, as Harman argues, because it is not true that death only harms an individual if it frustrates her desires and plans for the future. Death, even painless death, could also harm conscious (non self-conscious) individuals because it deprives them of future opportunities for pleasure or preference satisfaction. This argument can explain why, for example, death would be a harm to an infant or a mentally disabled person who enjoys life but is not capable of forming future-oriented preferences or projects. Similarly, it can explain why death ordinarily harms conscious animals (see also DeGrazia 1996).

However, a second argument holds that while death prevents animals from future enjoyments, this is best viewed as the deprivation of a benefit and not as a harm. The significance of this distinction between harm and foregone benefit would appear to lie in the weight given in moral philosophy to the distinction between positive and negative obligations – philosophers often seem to be in greater agreement about our obligations not to harm others than they are about our obligations to benefit others. Harman argues that this view may be rebutted by noting that some actions that deprive an individual of benefit do actually seem to count as harms. For example, if

someone deafens you, you have been deprived of the benefit of hearing, but you are also harmed by this. Though Harman does not explain why being deafened is a harm, one can make sense of this judgment by noting that to harm an individual means to set back their interests or make them worse off, and as regards the infliction of both deafness and death, an individual is being made worse off relative to how they would have been had one not acted.

Third, one may hold that humans have certain “time-relative interests” that arise based on our psychological continuity with our future selves, such as an interest in completing a college degree or writing a book. Since nonhuman animals have a lesser degree of psychological continuity with their future selves than do humans, nonhuman animals have either very weak or no time-relative interests. Therefore, the time-relative interest account (TRIA) may allow that death harms animals, but it would also hold that death normally harms humans to a much greater degree (see DeGrazia 2007). Even if animals do not have time-relative interests, one may hold that death significantly harms them on account of depriving them of future goods. However, Harman interprets the TRIA view to imply that killing an animal does not significantly harm the animal. She argues this view must be false because it cannot explain certain considered judgments about animals who have moderate psychological continuity (say, a few years). Consider, for example, a horse with a serious illness that will live a healthy life for 5 years but then will suffer significantly for several months and die. If treated now, the horse will only suffer for 2 weeks – and not nearly as severely as 5 years from now – during the post-operation recovery. If the surgery is done now, the horse will live a healthy life for another 15 years. Because TRIA cannot explain why this is permissible, Harman argues it cannot be the right account of the intuition that death for an animal may be less harmful than for a normal human (Harman 2011).

Hence, while a number of arguments may be advanced to show why death does not harm animals (i.e., set back their welfare), all of these arguments are problematic at the least and untenable at most.

Philosophical Considerations in the Assessment and Interpretation of Animal Welfare

Even where agreement can be reached about the definition of animal welfare and the things that thwart or advance animal welfare, philosophical considerations still complicate the assessment of animal welfare. Primary amongst these is the question of whether scientific “assessment” is needed to make informed judgments about what affects an animal’s welfare. Should one be agnostic about what affects an animal’s welfare, or assume that a particular kind of treatment does not adversely affect an animal’s welfare, until scientific data show that it does? For example, should it be assumed that gestation crates, which severely restrict sows’ mobility, do not adversely impact sows’ welfare until there is strong scientific support for this judgment? This stance presupposes value judgments about the degree of warranted confidence we can have in our “common sense” judgments about the welfare effects of gestation crates.

On the one hand, one wishes to avoid *inappropriate* anthropomorphism and judgments about welfare that cannot be supported by good reasons. On the other hand, appeals to the necessity of scientific justification, or claims about when anthropomorphism is inappropriate, may beg the question as to what constitutes a good reason. One may, for example, have reason to believe that gestation crates are detrimental to sows’ welfare because of prior warranted beliefs that sows are conscious, that they tend to move around and perform various behaviors when allowed to do so, that these behaviors correspond to preferences, and that by analogy it would be considered detrimental to human welfare to be so severely confined.

Once it is accepted that some sort of circumstance-specific, scientific assessment of animal welfare is needed, questions arise about what constitutes appropriate evidence and experimental design. For example, what degree of weight should be assigned to anecdotal observations, such as the observation that when initially placed in crates or tethered, sows try vigorously

to escape (HSUS 2009)? Isolated anecdotal observations may be discounted because they represent statistical outliers or are made in uncontrolled conditions, but such observations do nonetheless represent a form of evidence, and furthermore scientists’ aversion to anecdotal evidence has been criticized as perhaps arising from a positivistic ideological bias (Rollin 1990). A related issue is whether an animal’s cognition and preferences should be assessed in controlled laboratory conditions or more naturalistic conditions. Laboratory assessment allows for the control of experimental bias and confounding variables but may introduce artifactual elements that change an animal’s behavior. Welfare assessment under naturalistic conditions avoids such artifactual elements, but under naturalistic conditions it may be more difficult to control for bias and confounding (though increasing the number of observations can help to compensate for statistical outliers) (DeGrazia 1996).

Methodological value judgments – defined here as judgments involved in scientific practice that are underdetermined by data, underdetermined by inference rules or criteria, or otherwise concerned with what makes for “good” science or knowledge – also enter into more specific elements in the design of scientific experiments assessing animal welfare. One such judgment concerns the choice of alternative conditions whose welfare impacts are being compared. Some philosophers have considered the concept of animal welfare on its own terms; however, much animal welfare science takes place within the context of agricultural production systems or biomedical research. As such, it tends not only to take for granted that these activities are morally justified at the normative level, but in addition to this experiments and comparisons are often performed with pragmatic or economic considerations in mind.

For example, the American Veterinary Medical Association (AVMA) recently published a review of housing systems for pregnant sows (AVMA 2005). Not only did the AVMA explicitly acknowledge the relevance of economic considerations in assessing the welfare impact of various housing systems, but in addition the only housing

systems that were compared were systems compatible with industrial farm animal production, including gestation crates, indoor group pens, and tether stalls. The comparison thus excluded sows in completely free-living conditions, as well as alternative housing systems such as hoop barns or pasture-based hut systems. Though the AVMA did not explicitly address the criteria guiding their selection of alternative housing systems, economic considerations likely played a part, since the implementation of these non-intensive housing systems may require changes to current industrialized production systems. Hence, the AVMA's conclusion that no single housing system appears to be clearly preferable over alternatives as concerns welfare must be viewed with this selection of alternatives in mind.

Similar issues attend to the assessment of animals' preferences amongst a range of alternatives. Haynes (2011) observes that "unless the range of preferences is large, we cannot be sure that an animal is simply choosing the lesser of evils. We cannot also be sure that an animal can distinguish between what the present situation has to offer and what the longer term consequences of that choice might be." Experimental design also involves methodological value judgments that affect our interpretation of whether an animal has a preference between alternatives at all. For example, one experiment offered sows 1 kg of straw if they performed a particular operant response. Since the animals rarely performed the behavior necessary to obtain the straw, even prior to farrowing when sows normally build nests, the author of the study concluded that sows have little motivation to use straw. However, a follow-up experiment allowing sows to perform an operant response to gain access to a pen furnished with 18 kg of straw showed that the animals had a strong motivation to gain access to the pen. The author of this study concluded that 1 kg of straw was too little to be significant to the animals (see Fraser 1995). Other experimental variables that may influence results include the type of aversive stimulus, the timing and duration of an aversive stimulus, an animal's psychological state when being subjected to various conditions, the time course

of the response being measured, interspecies and interindividual differences, and others (Mason and Mendl 1993).

Yet another type of methodological value judgment concerns the correlation of measurable attributes, such as physiological variables, with mental states. For example, an animal's cortisol levels may be taken as a measurable proxy for mental states such as anxiety. In order to say with certainty that a particular measure correlates with a particular mental state, one would need an independent way to verify the existence of the mental state in question. However, since mental states are private, they can never be verified independently of the measures that are correlated with them. The basis for the correlation between measure and mental state is thus inferential, where mental state attributions are based on other evidentiary considerations than the one in question (e.g., other behavioral or physiological measures, evolutionary considerations, analogical reasoning to what correlations can be made in the case of humans, and so on). Methodological value judgments must also be made in many cases where different sources of evidence conflict as to what they suggest regarding an animal's welfare. For example, behavioral measures may indicate that an animal finds a particular situation unpleasant, while physiological measures may not directly support this inference (Mason and Mendl 1993).

Finally, methodological value judgments must be made when determining that sufficient evidence has accumulated to support a particular conclusion about the effects of something on an animal's welfare. For any given scientific investigation, normal science operates with a more-or-less standard set of statistical conventions (e.g., a 0.05 type I error threshold in classical significance testing) for arbitrating between "true" and "false" claims; however, it is important to acknowledge that these conventions represent value judgments about the sufficiency of evidence and are not indisputable. In fact the level of evidence that is sufficient or appropriate in a given situation will depend on such things as the goal of the activity in question (e.g., harm avoidance versus knowledge accumulation for its own sake) and what is at stake if a wrong

inference is made (Rudner 1998). For example, many philosophers writing about risk analysis have argued that more relaxed type I error thresholds should be adopted, since the purpose of risk analysis is to inform policy choices about the avoidance of possible harm and since standard scientific statistical conventions would unduly defer policy choices about such things (see, e.g., Shrader-Frechette 1991). A similar argument might be applied to policy decisions about animal welfare. In addition, since different studies investigating the same question may yield contradictory results, methodological value judgments must be made in deciding which study to prioritize and when different studies, taken together, provide sufficient evidence to form a conclusion.

It is important to be clear about the practical upshots of recognizing methodological value judgments in the assessment of animal welfare. Of course one such upshot is that empirical data alone are insufficient to decide the issue when assessing animal welfare and that additional assumptions and inferences must be made. This in itself is not troubling. What is more important to recognize is that in some cases, methodological value judgments may be contestable or even faulty. For example, while elevations in cortisol levels may sometimes be plausibly associated with aversive mental states, such elevations may also be associated with novel and even pleasurable conditions. In addition, cortisol levels may sometimes be normal in conditions that are detrimental to animal welfare as evinced by other criteria (Fraser 1995). Whether a particular methodological value judgment can be defended is a determination that will most likely have to be made on a case by case basis, for example, by considering other sources of evidence, as well as more conceptual considerations relating to what one should expect a particular evidential source to tell us in a given situation. In some cases available data may underdetermine the correct inference; however, it need not be assumed that this will be the case. For example, Mason and Mendl (1993) argue that discrepancies between different sources of evidence can often be resolved by a more careful consideration of the evolutionary function of particular responses.

Value Judgments in the Weighing of Interests

Many animal welfare assessments take place within the context of comparing different laboratory or production environments (e.g., different housing systems, different methods of euthanasia). In such circumstances, there may be both advantages and drawbacks of each alternative being compared, thus necessitating harm-benefit (or risk-potential benefit) assessments. Such harm-benefit assessments are value-laden, and even where there is agreement about what interests animals have, there may be disagreement about the degree to which interests are advanced or set back, the relative importance of specific interests, and the overall harm-benefit analysis for a particular practice or environment. Consider farm animal housing systems as an example. Some persons may emphasize the benefits of controlling feed and temperature, preventing attacks from other animals, and lowering the risks of some infectious diseases as speaking in favor of indoor, intensive confinement of farm animals. Other persons may argue that infectious disease risks of outdoor confinement are small; that animal feeding, temperature, and physical protection can be adequately accounted for by non-intensive conditions; and that living freely and in accordance with the animal's nature outweighs any putative benefits of intensive confinement (e.g., see, Fraser et al. 1997, Table 1; McGlone 2006) for discussion.

Another example comes from Carbone (2004). Citing the debate over laboratory guinea pig cage size in the late 1980s, he explains that this was the first time the USDA had used a scientific study to justify changes in cage size – a reduction by one-half. The authors of the study cited by the USDA in making this change explain that the guinea pigs spend “75–88 % of their time in about 47 % of their cage, mostly along the wall,” while 25 % is spent in other parts of the cage. The authors of the study concluded that spending only a quarter of their time in other parts of the cage does not constitute a significant enough use of cage space to warrant the larger size. However, as Carbone explains,

interpreted another way, 25 % of the time is 6 h a day, which is surely a considerable amount of time. The authors also do not mention exactly what the pigs are doing and whether or not there is any value in those activities (e.g., exercising, stretching, playing, etc.). Importantly, not only did the USDA make changes in cage size based on what they interpreted the pigs did not want (i.e., smaller cage size because of cage usage); they failed to make any changes based on what was clear the pigs did want (e.g., walled spaces or group housing).

As compared to judgments about moral obligation and right conduct, judgments about the prudential significance of animal interests, or harm-benefit assessments, may be less amenable to arbitration by specific principles; there seems to be a heavy intuitive component to such judgments. But this does not mean that all such judgments should be regarded as equally plausible. For example, it seems implausible to say that the benefit of avoiding a small risk of infectious disease outweighs the harm of intensive confinement for intelligent and social animals. It is also important to reiterate that harm-benefit comparisons are conditioned by the selection of alternatives being compared, whether these alternatives are broadly different or just variations on a theme. For example, any number of variables within a given sow housing system may be subtly changed, and this may affect the overall harm-benefit calculus for that system. Another important consideration in the weighing of harm and benefit is bias. One way to assess whether different judgments about animal welfare (even when highly intuitionistic) are equally plausible is to ask whether any factors are present that might distort the evaluations of a given person, as discussed in the next section.

Moral Bias in Welfare Definition and Assessment

A major concern in both the definition and assessment of animal welfare is the possibility of moral bias. Haynes (2011) observes that the discipline of animal welfare science initially developed in

institutions and organizations closely linked with animal agriculture and animal research, rather than institutions with no vested interest in these activities. Such a link could, of course, bias the work of welfare scientists, insofar as it would make them less likely to develop accounts of animal welfare that were critical of, or incompatible with, the uses of animals made in these activities. Indeed, Haynes argues that the way in which persons in the scientific community define welfare “seems to play a major role in supporting merely limited reform in the use of animals and seems to support the assumption that there are conditions under which animals may be raised and slaughtered for food that are ethically acceptable” (2011, p.105).

Furthermore, persons in the animal welfare science community often see themselves as studying questions not only about animal welfare in the prudential sense, but also normative questions about what obligations humans have to animals (Fraser 1999). Such normative judgments often presuppose some account of welfare/prudential value, and thus there will usually be a link between the two domains. However, by explicitly tasking themselves with the charge of addressing both domains, persons in the animal welfare science community invite their normative commitments into their scientific work about welfare to a greater degree than if the two domains were “firewalled” to at least some extent. That this is the case can be seen in an article titled “Animal Ethics and Animal Welfare Science: Bridging the Two Cultures” (Fraser 1999). The author of this article, David Fraser, has the laudable goal of increasing dialogue between persons in the animal ethics and animal welfare science communities. However, part of Fraser’s explanation for why the two cultures have historically failed to communicate is that animal ethicists have elaborated ethical theories not compatible with certain forms of animal use. This argument appears to be both descriptive and normative in nature, in that Fraser’s recommendations moving forward include the use of ethical frameworks more compatible with animal use (e.g., killing) and grounded in such ideas as husbandry and care, rather than respect, rights, or justice (Fraser 1999). At the least, this

argument conflates the important distinction between assessing what advances or sets back an animal's welfare and assessing when harms to animals might be justified. At most, the argument takes for granted the moral correctness of certain forms of animal use, the result being that humans should tailor our normative ethic to be compatible with such uses; this latter interpretation suggests moral bias.

Moral bias may intrude into the definition of "animal welfare" in at least three ways. The first way, discussed extensively by Haynes, is that persons in the animal welfare science community have tended not to define death as a harm. In so doing, the concept of "humane care and use" came to be defined in such a way that activities involving the death of animals, such as agriculture and biomedical research, could (at least in theory) be conducted in such a way that they did not harm animals. Persons who wish to justify these activities need not rely on this assumption, but the assumption makes the activities seem less morally problematic and perhaps not even morally problematic in the first place, thus circumventing the need for positive justification. The philosophical question of whether death harms animals has already been discussed. Here, it should be noted that from a historical standpoint, the presumption of the welfare science community that death does *not* harm animals does not seem to have been driven by explicit philosophical argument, as much as by a culture of animal use that would find the conclusion congenial.

Second, moral bias may also intrude into the definition of animal welfare when human concerns are built into the definition. For example, the ease of managing large numbers of animals and economic productivity are often built into the "welfare" assessment of different sow housing systems (see McGlone 2006; AVMA 2005). Whether or not these considerations properly belong in an ethical analysis of confinement agriculture, they certainly do not belong in an assessment of the *welfare* impact of various housing systems on the animals. As Mench (1998) explains, "[f]arm-animal welfare science is bounded not only by ethics but by complex

economic and social constraints, including profitability, worker health and safety, food cost and safety, policy considerations, consumer acceptance, and environmental sustainability." This may be true, but it does not change the fact that the intrusion of such considerations into the definition or assessment of what is good or bad for animals properly counts as a bias.

Third, bias may also affect how an animal's welfare is assessed. One way in which this might happen is in the making of harm-benefit assessments, for example, the value of avoiding a certain risk of disease versus the disvalue of intensive confinement. What complicates attributions of bias here is that such judgments may be heavily intuitionistic, without a clear rational standard for how they should be made. Nonetheless, even in such conditions biases can sometimes plausibly be identified. For example, significant financial conflicts of interest are generally recognized as powerful biasing factors, even in the absence of an agreed-upon rational standard for how a particular judgment should be made. As concerns animal welfare science, both financial interests and interests in maintaining valued group memberships and identities may affect how persons in the welfare science community make such judgments. The idea of "net" or "cumulative" welfare may also involve moral bias. Here, the idea is that as long as the "balance" of welfare is positive, then welfare is considered good, and a housing system or procedure may be considered unproblematic (McGlone 2006; Mench 1998). This essentially allows for some harms to be legitimated without ethical argument, since if they are outweighed by enough positive elements, then welfare is good and the practice does not appear to even require ethical justification.

In order to avoid the ad hominem fallacy (i.e., directed at persons making claims about animal welfare, especially when it is suspected that their judgments are biased), it is important to evaluate welfare claims on their merits wherever possible. However, because the scientific assessment of welfare is often complex, with many assumptions and judgments driving the process, it may not always be immediately clear where and how

bias may affect an argument or scientific study. Therefore, it is helpful to keep this issue in mind when critically reading the literature.

Summary

This essay has reviewed philosophical and political concerns in the definition and assessment of animal welfare. First, it was argued that animal welfare is an ethical concept at bottom, rather than a scientific concept – though the assessment of animal welfare may require scientific study. Second, the essay reviewed various definitions of animal welfare and suggested that a plausible definition of the concept should make reference to an animal's subjective experience. Third, the essay examined the question of whether death harms animals and concluded that the best arguments favor this conclusion, though it still may be the case that death harms humans more under most circumstances. Fourth, the essay discussed how the scientific assessment of animal welfare involves a number of methodological value judgments related to study design and interpretation. Fifth, the essay discussed how the assessment of animal welfare often requires that one weigh harm and benefit against each other, and that such judgments are value-laden. Sixth, and finally, the essay discussed how a person's political or moral commitments might inappropriately bias the definition and assessment of animal welfare, thus necessitating a critical stance when reviewing the literature.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)

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Aroid Production and Postharvest Practices

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Synonyms

Arum; Biodiversity; Cocoyam; Eddoes; Edible aroids; Elephant ear; Elephant foot yam; Food security; Orphan crops; Roots and tubers; Smallholder farming systems; Swamp taro; Tannia (Latin *Araceae*: *Alocasia*, *Amorphophallus*, *Colocasia*, *Cyrtosperma*, *Xanthosoma*); Taro; Yam

Introduction

This entry will explore the significance of aroids (*L. Araceae*) in different cultural settings and regions of the world and examine ethical issues associated with tangible and intangible aspects of aroids in the global food system. Aroids are the world's oldest cultivated crops. All plant parts are eaten, but most often they are cultivated for their starchy underground parts. The plants but also numerous aroid dishes carry a deep symbolic meaning and cultural value in numerous communities in and from Austronesia, Africa, Asia, the Caribbean, Latin America, and the Mediterranean. At present aroids are the sixth most important root and tuber crops and rank

fourteenth among staple vegetable crops in the global food system. The Food and Agriculture Organization of the United Nations (FAO) roughly estimates that around 400–500 million people in the (sub)tropics and developing world are involved in the cultivation, consumption, and trade. Simultaneously, aroids are described as “orphan” crops and hardly known in the Western Hemisphere, where, since the mid-twentieth century and the (global) South to North migration, aroids and aroids products became widely available (notably) in densely populated urban areas. In the same century, the food sector evolved into a highly commercialized industrial system and agriculture into agribusiness. Despite being the most widely distributed starchy staple in the modern era (c. 1500–1800), aroids managed to escape from industrialized agriculture with a focus on large fields and monoculture. But as a result of globalization, urbanization, and transnational trade, aroids are increasingly assuming importance as cash crops. In the first decade of the twenty-first century, the global food system has also become increasingly complicated. Concerns about population growth, land use, agricultural biodiversity, small-scale farmers, sustainability, and food security encompass every area of the world. Root and tuber crops, including aroids, play a considerable role in addressing these issues.

Aroids in the Global Food System

The cultivation, consumption, and trade of aroids are foremost restricted to ethnicities in and from (sub)tropical regions and the developing countries, where 60 % of the world's food is produced by around two billion smallholder farmers. In Africa, Asia, and Latin America, the underground parts of aroids are a traditional staple food and main source of energy for millions of people. The vast majority live at a subsistence level or in extreme poverty. Especially in these regions, the cultivation and consumption of roots and tuber crops are projected to grow substantially in the twenty-first century (Scott et al. 2000).

Aroids are of importance in traditional farming systems and of significance for food security in the world's poorest regions and, therefore, described as orphan crops, which are also known as minor, neglected, and underutilized food plants. These crops continue to be maintained by local communities and have received little scientific research and funding. Since the 1990s, research interest in aroids is emerging, and at present a number of governments, research institutions, and nongovernmental organizations (NGOs) are engaged in research projects to preserve genetic diversity and exploit the potential of aroids as a food for the future (Scott et al. 2000; Ramanatha et al. 2010; INEA 2011; Biodiversity International 2012). Research institutions and NGOs consider a better use and conservation of aroids in smallholder farming systems instrumental to improve global biodiversity and food security. Since 2011 the International Network for Edible Aroids (INEA), a consortium of institutions and scientists from various disciplines, applies modern biotechnologies to overcome environmental and other challenges. In the process INEA seeks to increase aroid production and the income of farmers and improve food security (INEA 2011). By focusing on training and technical advice in good postharvest practices and storage methods, the FAO assists farmers to add value to aroids and thus increase their income from better market opportunities.

Orphan crops not only meet food and nutritional needs; they are also strongly linked to sociocultural preferences and use practices. Food practices and beliefs are among the many differences between Western and non-Western cultures; still schemes to improve food security through aroids often ignore or give very little attention to ethics of non-Western societies at large. In Western society nearly all food is purchased in supermarkets, and most people have no direct contact with farmers. Consequently, not the food westerners grow but the food they eat has become one of the most powerful symbols of who they are (or identity). The physical and mental distance between the farm and plate is less vast in the (sub)tropics and developing world. With an estimate population of three billion people,

around two billion people are engaged in farming at a subsistence level; therefore, not only eating but growing and preparing food play a fundamental role in who they are (or identity). These vast cultural differences are not yet well explored nor do they receive the necessary attention. The race to increase global food security often serves as a rationale to deploy modern biotechnologies, intensify production, and increase income. The continuing maintenance of aroids in smallholder farming system indicates that the world's oldest cultivated crops are grown on more direct cultural and moral grounds.

Origin and Nomenclature

Aroids are ancient plants that evolved in swampy areas during the Cretaceous. In this geological period that lasted from about 145 million to 65 million years ago, the first monocotyledonous plants or monocots were formed. Fossil remains of ancient aroids have been found in the tropics but also in the Northern and Southern Hemisphere and temperate regions such as Patagonia (Argentina) and Canada (Bown 2005; Herrera et al. 2008). Aroids can be found on every continent, but the identification of the many different wild and cultivated genera and species is difficult and requires a trained eye (Bown 2005). Since ancient times, aroid genera and species carry a multiplicity of vernacular and overlapping names in various languages and oral traditions. The most dominant term for cultivated aroids is "taro," which is a derivation from Polynesian languages and frequently used as an inter/exchangeable term for the various cultivated genera (Spriggs et al. 2012). Other terms include tannia, cocoyam, yam, elephant ears, dasheen, eddo(e), tannier, yautía, and malanga (Flach and Rumawas 1996; Elevitch 2011; Ramanatha et al. 2010).

The Aroid Plant Family

The aroid plant family currently comprises of more than 120 genera and about 3,750 species

of which many are used as food, medicine, animal fodder, ornamental plants, and cut flowers. Several aroid genera, such as *Arisarum*, *Arum* (*Dracunculus italicum*), *Calla*, *Dracontium*, *Monstera*, *Pistia*, *Spathynea*, *Typhonium*, and *Lemna* (duckweed or water lentils), are on record as food, but the five most important aroid genera, cultivated as a crop and collected from the wild but also used medicinal and as animal fodder, are:

1. *Elephant ear* (*Alocasia*) is a genus in excess of 100 species. Common names also include false or giant taro. Elephant ear is usually harvested in between 12 and 24 months after planting, but harvesting is also delayed for up to 4 years.
2. *Elephant foot yam* (*Amorphophallus*) is a genus of more than 257 species; only four species are used as food and medicine. The cultivation is most important in India, Sri Lanka, Myanmar, parts of Indonesia, the Philippines, China, and Japan. The large round subterranean tuber can weigh in between 1.5 and 30 kg or more. The tubers are sometimes harvested after a year, but depending on the variety, elephant foot yam commonly is harvested in between 2.5 and 4 years.
3. *Swamp taro* (*Cyrtosperma*) is a small species of aquatic aroids indigenous to Southeast Asia where it grows wild in swamps, rivers, and lakes. It is most widely cultivated in Micronesia and the western Pacific but also in parts of Indonesia and the Philippines. Swamp taro is one of the world's largest plants producing an edible corm or tuber, sometimes weighing as much as 100–120 kg. The corm is usually considered ready to harvest between 3 and 6 years but also harvested after 12 months up to 10 years. Stored underground the corms remain edible for many years.
4. *Taro* (*Colocasia*) is the world's best known edible aroid genus. The “eddoe” (*L. Colocasia esculenta* var. *antiquorum*) and “dasheen” (*L. Colocasia esculenta* var. *esculenta*) are the most popular species. “Dasheen” produces a large main corm with small cormels and is primarily cultivated for its main corm. “Eddoe” produces a smaller main corm surrounded by larger, more developed cormels

that are the principal harvest. Taro is most often grown as an annual and also cultivated for its edible leaves.

5. *Tannia* (*Xanthosoma*) has two main species, *X. sagittifolium* (L.) and *X. nigrum* (synonym *L. violaceum*), that are cultivated throughout the tropics. *Tannia* is also cultivated for its edible leaves, commonly grown as an annual (harvested after 9–12 months); both the main stem and the cormels are harvested. Leaving the plant intact, the underground cormels are also harvested (Flach and Rumawas 1996; Elevitch 2011; Ramanatha et al. 2010; Spriggs et al. 2012).

Elephant ear, elephant foot yam, taro, and swamp taro are believed to originate in tropical Asia. From the Indomalaya ecozone, an area between Myanmar and Bangladesh, they spread eastward to other Eastern Asian regions and the Pacific, where the domestication and cultivation of aroids in fields and terraces occurred when rice and wheat were just weeds (Ramanatha et al. 2010; Spriggs et al. 2012). Archaeological evidence on stone mortars and pestles from the Solomon Islands suggests that taro was already in use around 28,700 years ago. Therefore, ethnobotanists and archaeologists consider aroids the oldest cultivated staple crop on earth. Whereas elephant ear, elephant foot yam, taro, and swamp taro originate in Southeast Asia, *tannia* is the only indigenous American aroid widely cultivated for food. Together with taro, it is the most widely distributed and consumed aroid (Bown 2005; Ramanatha et al. 2010; Spriggs et al. 2012).

Cultivation and Harvesting

Aroids are primarily cultivated by smallholder farmers on small plots and in a wide range of environments and agricultural systems. The production does not require special horticultural techniques, and fertilizers and pesticides are seldom used. Most aroids are well adapted to moist tropical climates with short dry seasons, and most genera tolerate short or longer periods of dryness (Flach and Rumawas 1996; Elevitch 2011). Elephant ear, elephant foot yam, swamp taro, and

tannia are also among the important subsistence crops used in times of food scarcity. Although sometimes seed propagation is applied, vegetative propagation is the most common practice for aroids and involves the removal of cormlets or suckers (pieces) of the “parent” plant. Aroids are cultivated on a wide range of soils, and a large diversity of local cultivars is used in traditional agricultural systems. In home gardens, traditionally aroids are intercropped with numerous other crops. On estates or plantations, they are intercropped with other aroids, corn (maize), plantains (or bananas), common yam (*Dioscorea*), cassava (*Manihot esculenta*), sweet potatoes (*Ipomoea batatas*), and other vegetables. In the Pacific, after the clearing of land via slash burning systems, elephant ear, taro, and tannia are produced in mixed gardens. Polyculture is also applied in agroforestry and for the production of tannia in Latin America and Africa, where the shade-loving plant is considered the most important aroid. In the Indo-Pacific region, historically taro is an important irrigated monocrop. The wet cultivation of taro in freshwater swamps, pits, true irrigation (via water transport systems of canals or pipes), and pond fields (in appearance similar to rice fields or terraces) is among the most ancient and productive agricultural techniques. Wetland taro cultivation is only competed by the similar agricultural system based on rice (*Oryza sativa*) (Flach and Rumawas 1996; Elevitch 2011; Spriggs et al. 2012).

Planting and harvesting of aroids are done by hand and hardly involve mechanization, also because harvested tubers can easily be damaged and are susceptible to diseases. In general aroid underground parts are harvested at the end of the growing season but sometimes also continuously or partial for home or local consumption. The harvesting of young aroid leaves from home gardens, and for edible purposes, often starts a few weeks after planting (Flach and Rumawas 1996; Elevitch 2011; Spriggs et al. 2012). The collection of aroid leaves (blades and petioles or stalks or stems) from the “wild,” and cultivation as a community food, is a widespread tradition in Southeast and East Asia. In countries such as

China, India, Indonesia, Fiji, Nepal, Vietnam, Myanmar, and the Philippines, soft young leaves and petioles of “wild” taro are obtained from uncultivated habitats, in or alongside roads, trails, ditches, ponds, forests, lakes, and streams (Elevitch 2011; Spriggs et al. 2012).

Nutritional Value

All plant parts of aroids are edible. The leaves, stems, and petioles serve as a green vegetable, but they are particularly cultivated for their starchy underground parts. Providing for carbohydrates, the corms and cormels have a similar nutritional value as potatoes. If compared with potatoes, their protein content is slightly higher and about twice as high as in (sweet) potatoes and cassava. Because of the relatively small size of the starch grains, both the carbohydrates and proteins of aroid underground parts are hypoallergenic and easily digested. Furthermore aroids contain minerals, vitamins C and B1 and B2, and niacin. The nutritional value of aroid leaves is comparable with spinach. Apart from rich in protein, aroid leaves are an excellent source of vitamins A and C, calcium, potassium, phosphorus, iron, and folic acid (Opara 2003).

Historical Significance

In several areas of ancient China, taro was an important staple crop; its cultivation is dated back to 8,000 BC or before. The crop also diffused westward to Madagascar and Africa and to the Middle East and the Mediterranean where it is cultivated since time immemorial (Bown 2005; Ramanatha et al. 2010). In ancient Egypt taro was among the important wetland crops, consumed as vegetable and used for the production of flour. The flower referred to as ciborium was used as a vessel or drinking cup and is seen on statues of the god Osiris, and the seeds were eaten green and dried. Extensively cultivated in Egypt, Syria, Palestine, and adjacent countries, taro probably migrated to Crete, Cyprus, and Greece where, among others, it is listed among the exotic and

rare plants in the orchards of Sicyon, the ancient Greek city-state in Corinth (Peloponnesus), and the nickname of both the goddesses Athena and Minerva. In Virgil's time (the ancient Roman poet Publius Vergilius Maro, 70 BC–19 BC), taro began to be planted in Italy. Using different definitions for the plant and plant parts, e.g., arum, Egyptian bean, cyamos, colocasia or kulkas, pontic, and ciborium, ancient authors such as Herodotus (c. 484–426 BC), Theophrastus (c. 327–288 BC), Dioscorides (c. 40–90 BC), and Pliny the elder (23–79 CE) all referred to taro in their writings (Genaust 1996). Taro is also mentioned in ancient herbals and as an ingredient in several dishes in the *Apicius*, the oldest collection of recipes in the western world, written in vulgar Latin and compiled around the late fourth or early fifth century. The recipes in the *Apicius* reflect the cuisine of a wider group of urban cosmopolitans and thus indicate that the Romans were well familiar with taro and taro preparation and considered it suitable for the palate of many financially secure Romans (Vaneker 2011; Van der Veen 2011). In the modern era (c. 1500–1800), taro was the most widely distributed starchy food plant and during this period was introduced in the Caribbean and Latin America. In later times taro became a less important staple crop and food (Ramanatha et al. 2010). Tannia, the only indigenous American aroid widely used for food, originates in Latin America, where the bulk of the diet of many (pre-Columbian) Amerindian cultures consisted of starchy roots and tubers such as cassava (manioc), sweet potato, and tannia. Although within the archaeological context the cradle of origin remains obscure, its domestication and dispersal throughout the Americas took place long before Columbus arrived. Excavations at Cerén (El Salvador), for instance, indicate that the ancient Maya cultivated tannia around 600 CE. At the time of the Columbian Exchange, tannia was among the important crop plants cultivated from Brazil to Southern Mexico and in Bolivia and the Greater Caribbean. In the modern era, tannia was introduced in Asia and Africa where it meanwhile is perceived as a traditional crop and food (Bown 2005; Ramanatha et al. 2010; Vaneker 2011).

The Globalization of Aroids

During the modern era, aroids migrated South to South, but in twentieth century and as a result the age of decolonization and growing demand for low-skilled labor and a massive South to North migration, they became available in the Western world. At present Europe and the United States are home to over 100 million migrants of which many come from (sub)tropical areas of the world. Migration is known to affect the dynamics of cuisines and the perception of traditional foods. Apart from a necessity, the continuation of cooking and eating habits from the homeland enables migrants to adapt to new living conditions but also to continue important cultural practices and ways of life. In order to sustain a sense of identity and continuation, migrants living in densely populated urban areas started to revalue aroids. In the process aroids increasingly are transforming from subsistence or poor people's crops into a traditional food with cultural value. Especially in migrant dense areas, taro became widely available, but also tannia can be purchased all year around in ethnic stores; Asian, African, Hispanic, and other tropical markets; natural food stores; and sometimes mainstream supermarkets. Taro and tannia corms and cormels are sold fresh, as well as peeled, frozen (grated), and fermented and as flour. Aroid leaves are commonly sold fresh. Consumed by steadily growing migrant populations, outside of migrants populations, aroid consumption and consumer familiarity only slowly increase (Vaneker 2011).

The transformation of aroids from subsistence crops into a food with cultural significance increases its economic value. Since the 1920s taro and tannia corms are produced commercially throughout the tropics, including fields in Florida. Since 1988 global aroid production slowly increases and export grows (Opara 2003; Ramanatha et al. 2010). Especially West Africa (Nigeria, Ghana, Cameroon, and Ivory Coast) and Middle and Latin America (Costa Rica and Nicaragua) are large producing and exporting regions. Also more often aroid products are becoming available. Fresh or frozen taro

and noodles from taro and elephant foot yam are exported from Asia to Asian communities worldwide. West African packages of *fufu* flour, with both taro and tannia flour, can be purchased in African stores around the world. Commercial products from tannia and taro corms include starch for industrial purposes, flour (as a wheat substitute), and fructose syrup for bakery products and soft drinks. Other commercial products from aroid corms include chips (or crisps), breakfast cereals, flakes, and noodles (Flach 1996; Opara 2003). Ready-made aroid dishes include Hawaiian *poi*, Surinamese *pom*, and Costa Rican *olla de carne* and are sold in local supermarkets or exported to expatriate communities.

Increasingly farmers in Western societies are turning away from conventional agriculture and agribusiness to grown more profitable “ethnic” crops and other specialty vegetables. To provide migrant communities with taro and tannia leaves, since the 1970s, these are commercially cultivated in greenhouses in the Netherlands. And in order to cater to the “taioaba” needs of the local Brazilian community and support struggling farmers, tannia is among the ethnic crops cultivated in greenhouses in Massachusetts (Scott et al. 2000; Opara 2003; Bown 2005).

Regrettably the locavore movement, promoting the consumption of locally grown food, does not pay attention to crops migrants perceive as local (food), neither is the carbon footprint of greenhouse gas emissions versus fuel for transport part of current concerns and debates. In addition, the nostalgia for a taste of their homelands makes migrants reluctant to abandon aroids and replace these with much cheaper available alternatives. In many dishes taro tubers are preferred over less costly potatoes and sweet potatoes and the more pricey leaves of both taro and tannia over spinach. In Europe and the United States, one out of five of the total population is a migrant, often performing poorly paid unskilled labor, but still debates about the costs of foods Western societies perceive as their key staples exclude the perspective of migrants and other ethical issues specific to the food preferences of migrant populations.

Preparation, Significance, and Cultural Value

Although several aroid genera are on record as being consumed raw, most aroids contain oxalic acid, and the acidity of the corm, cormels, and leaves is known to cause irritation of the skin and mouth. Common and ancient techniques to make aroids digestible and denature toxins (the calcium oxalate crystals) are cooking (baking, roasting, and boiling), drying, and fermentation (Ramanatha et al. 2010; Vaneker 2011). The tubers (stem, corms, and cormlets) are prepared in various ways and either washed and peeled before further preparation or boiled or baked with the skin. Preparation methods include boiling, baking, steaming, roasting, pounding, drying, frying, and fermenting. Together with other tropical roots and tubers (e.g., cassava, sweet potatoes, and common yams), aroids are used in soups, stews, and chowders. The tubers are also made into flour or meal for porridges or puddings, breads, and pastries. Common methods for the production of flour or meal include grating and the pounding of raw (fresh) or cooked tubers. The stems of leaves or blades and the leaves are used as a green vegetable and often considered a delicacy (Flach and Rumawas 1996; Ramanatha et al. 2010; Vaneker 2011).

In recent decennia, in Western societies, different cuisines started to coexist and began to overlap and mix, and increasingly “exotic” foods and ethnic cuisines are adopted. But apart from a handful of traditional dishes, relevant literature and cookbooks in Western society still hardly provide for aroid recipes and information. The standard advice is even aroids and other (sub) tropical roots and tubers are inter/exchangeable, and the lack of cooking advice and recipes indicates the unfamiliarity of westerners with aroids (Vaneker 2011).

Aroid preparation techniques and recipes are foremost orally transmitted, and traditional ways of preparation largely remain unrecorded. And even though there are no inventories of the many surviving recipes and traditions, increasingly non-western communities share traditional recipes via websites and blogs on

the Internet, showing that the cultural value of aroids keeps evolving in response to its environment and continues to provide communities and groups of people with a sense of identity and continuity.

Aroids are older than humanity and therefore only gradually became part of culinary traditions of countless groups and communities worldwide, whose ethical values most often have evolved within religious traditions. Dishes and rituals still in circulation encompass living expressions and traditions that countless people have inherited from their ancestors and transmitted to their descendants, in most cases orally. Not only in ancient Egypt and ancient Greece aroids became part of religious traditions, until today aroids are sacrificed to deities or commemorated in mythological stories. In India the antiquity and importance of taro is underlined by the rich diversity of traditional recipes and preparation techniques. Taro cormels, corms, leaves, and petioles are consumed in a wide variety of traditional Indian dishes, such as curries, chutneys, pickles, and stews and are used for ayurvedic or medical purposes. Taro is an important offering in several important rituals and festivals for major Hindu deity's such as Krishna and offered to the deity in the famous Jagannath Temple in Puri. On special occasions in Gujarat and other northern Indian states, taro leaves are prepared and consumed. Commemorating the baptism of Christ, taro is the main dish for Egyptian Copts on *Eid el Ghutas* (Epiphany). It is similarly deeply rooted in Japanese food culture where the "satoimo" (meaning village or home root or tuber) plays a central role in small-scale farming systems (Ramanatha et al. 2010; Misra and Nedunchezhiyan 2012).

Taro cultivation and consumption are ancient in several Austronesian communities (e.g., Pacific region and Hawaii), known as *dalo*, *kalo*, and *talo*; all over the region the corms are grated or pounded into starchy, fermented pastes or puddings referred to as *fakakai*, *fai'ai*, *feikai*, *loloi*, *poke*, *po'e*, *poi*, *roroi*, *sua*, *tukituki*, *taufolo*, and *vaihalo* and an integral part of Polynesian feasts. Hawaiians believe that eating *poi* unites people but also supports the family (*ohana*) and

shows appreciation for the ancestors (*aumakua*). In Hawaiian mythology, taro (or *kalo*) is believed to be the greatest force of life of all foods and linked with creation. According to the legend, the plant grew from *Hāloa-naka*, the first stillborn son of *Wākea* (father sky) and *Papa* (mother earth). After the burial of *Hāloa-naka*, a second child *Hāloa* (everlasting breath) was born, and Hawaiians consider themselves descendants from *Hāloa* (Vaneker 2011).

Both taro and tannia are a prominent staple in the diets of numerous West African communities where aroids and other starchy tubers and roots – alone or in combination – are used for the preparation of the traditional staple dish *fufu* or *futu*, a pounded porridge or pudding. Other common African preparation methods for aroid corms and/or cormels include boiling whole with the skin, pounding, roasting, fermenting, and baking. Cubans consider tannia, known as "malanga," the queen of the stew vegetables. Fidel Castro is on record saying "¡se ha olvidado la malanga!, a pesar de las veces que hemos dicho que si no hay nada que comer comeremos malanga (APLAUSOS)" ("!the malanga has been forgotten!, despite the time we have said that if there is nothing to eat we will eat malanga (Applause)"). Tannia is a prominent ingredient in the Cuban stew *ajiaco*. Similar stews or soups with root vegetables, pieces of meat, fish, or chicken are prepared in households all over middle Latin America. In Costa Rica the popular multiethnic dish is known as *olla de carne*, in the Dominican Republic as *sancocho de siete carnes*, in Colombia and Puerto Rico as *sancocho*, in Panama as *sancocho de gallina*, in Haiti as *bouyon* or *bouillon*, Venezuela *aspicadillo llanero*, and in Jamaica, Antilles, and Guyana as *pepper pot*. All over the Caribbean deep-fried fritters (such as *frituras*, *friturita de malanga*, *malanga chips*, *alcapurrias*, *accra*, *frituras de yautía*, and *buñuelos fritos*) with tannia are prepared. In the Caribbean the leaves of tannia and taro are known as *callaloo*, *calalu*, *calalou*, *callilu*, and *callalou* or Caribbean spinach. Boiled and pureed, they are a central ingredient for a popular one-pot dish (from green vegetables) and known by the same name. In the Surinamese community in Suriname

and the Netherlands, taro corms are used in soups, and the leaves (known as *tajerblad*) are among the most popular green leafy vegetables. The main corm (stem) of tannia is a central ingredient in *pom*, the national oven dish prepared with grated tannia and stewed chicken in a sauce. In recent years, outside the Surinamese community, the oven dish rapidly gained popularity in the Netherlands (Vaneker 2011).

Swamp taro was a popular food crop throughout Southeast Asia in the early twentieth century and still an important crop in the Pacific. The underground corm is the primary edible product and highly valued in parts of Micronesia where large tubers are presented and offered to honorable guests. The young leaves, stalks, and inflorescences are also on record as vegetables. In Southeast Asia and Micronesia, swamp taro leaves are used in dishes and as a wrapping material for food prepared in the pit or earth oven. In Asian cuisines aroid corms and leaves are often prepared with coconut milk. In the Philippines taro leaves (blades and petioles) are preferred over the corms and widely used in cooking. Taro leaves are also consumed in Indonesia, Fiji, Nepal, Vietnam, and Myanmar (Flach and Rumawas 1996; Ramanatha et al. 2010; Elevitch 2011; Spriggs et al. 2012).

Elephant foot yam is the most important cultivated aroid in India. On Diwali (or Devali), one of the most important annual Hindu festivals, it is consumed widely in northern India. The tuber is considered a delicacy and also used for the preparation of pickles and indigenous medicine. Of wild species the sprouts, petiole, corms, cormels, stem, and even the unopened inflorescence (a typical feature of aroids) are collected for medical, ayurvedic, and nutritious purposes. The tuber is boiled, baked and fried, and used in curries and the preparation of gruel (Misra and Nedunchezhiyan 2012). In India and Bangladesh, the mature stem of elephant ear is peeled, cut into pieces, and eaten as a cooked vegetable, usually with tamarind juice and in curries or stews. In the Pacific the stems are roasted, baked, or boiled and eaten as a carbohydrate or starch. Older stems require prolonged cooking, and the leaves are

eaten as well (Flach and Rumawas 1996; Elevitch 2011).

The above practices and uses show that aroids are an ancient crop and food with all kinds of symbolic and other meanings. Millions of people in and from the (sub)tropics and developing world maintain aroids as tangible and intangible cultural heritage. Simultaneously, and despite their ancient and evident importance in the global food system, the orphan crops are largely linked to subsistence agriculture and local expressions of culture. Postwar globalization, migration, and urbanization have had a very different outcome in the many different aroid-“producing” and aroid-“consuming” regions and cultural and economic settings. The wide availability of aroids and aroid products in Western society has an ongoing impact on culinary uses and production. In addition, the effectiveness of food security schemes to relieve hunger, increase global food security, and maintain agricultural biodiversity transcends tangible values and the fundamental moral and political responsibility to feed the hungry. Aroids are foremost grown because of sociocultural preferences and use practices; subsequently culture and morals play an important role to maintain, manage, and safeguard the crop that has been part of the development of human civilizations and still is part of living cultural expressions. The vast cultural differences and worldviews that exist between governments, research institutions, NGOs, and the poorest and most vulnerable people are an ethical challenge. Apart from a contribution to global food security and biodiversity, bridging the existing gaps will provide everyone growing and eating aroids with “...a standard of living adequate for the health and well-being of himself and of his family” (United Nations 1948).

Summary

This entry addresses the history, distribution, cultivation, and importance of edible aroids, or taro, in the global food system. Aroids are a little known ancient crop and are foremost maintained

by farmers in small farming systems in the (sub) tropics. Since time immemorial aroids but also aroid dishes carry a deep symbolic meaning and cultural value in communities in and from Austronesia, Africa, Asia, the Caribbean, Latin America, and the Mediterranean, where culinary knowledge is transmitted orally. Since the mid-twentieth century and especially in migrant dense (urban) areas in the western world, aroids and aroid products are becoming more available.

Cross-References

- Biodiversity
- Buddhism, Cooking, and Eating
- Community-Supported Agriculture
- Cooking, Food Consumption, and Globalization: Ethical Considerations
- Food Security
- Food Security and Rural Education
- Geographic Indications
- Geographical Indications, Food, and Culture
- Public Institutional Foodservice

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Artisanal Food Production and Craft

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Synonyms

Craft; Pickling; Preserving; Small batch; Traditional food preparation

Introduction

The word “artisanal” has regained a foothold in the US food vernacular and is being used to describe many food and beverage products like pickles, cheese, jam, and gin that have been populating the shelves of specialty shops and crowding tables at farmer’s markets since the start of the new millennium. Like so many similar monikers that have been adopted to connote a specific sense of values in production or quality, such as “natural” and “green,” the word is not regulated and has since been used by large corporations to describe industrial- or mass-produced goods such as crackers, potato chips, and pizza (Donnelly 2012). Thus a debate has ensued about the true meaning of the term and what, if anything, should be done to ensure its veracity.

The term “artisanal” has its roots in the Italian word “artigiano,” meaning artisan or craftsman, which has its own etymology from the Latin “artitus” which means instructed in the arts. Thus, the term is understood to mean someone who makes a specific product or provides a specialized service with a high degree of skill or art, stemming from the Old World culture whose economies relied upon local artisans for everything from bread to furniture. In present vernacular, “artisanal” is used, in its broadest sense, to describe a product that is made by an artisan and is most properly used to indicate something that is handmade, unique, and high quality – often the very opposite of

mass-produced. It was the reaction of some to the industrialization of US culture’s food system – with its cheap meat and dairy, increasing monoculture and proliferation of processed foods – that helped spark a growing revolution in the last few decades back towards personal gardens, small farms, and traditional forms of food preparation and preservation, both in the home and in the marketplace, which prompted a resurgence of interest in artisanal goods and methods.

Historically, the term artisanal has been used to refer to a wide variety of goods and services, including some edibles. However, only since the start of the new millennium has the term been reclaimed within the vernacular to describe primarily food products, generally referring to those that have been made using traditional methods, often by hand and with attention to quality. Artisanal goods are sometimes referred to as “craft” goods, referring to the skill needed to make these items, or “small batch” – a term that originally was used to describe high-end whiskeys that represented the highest quality of a batch and were closely tended to by artisans, but has come to be inclusive of all goods that are made with the same attention to ingredients and skill. Thus, with this increase in artisanal food production for both personal and commercial use, the debate surrounding this category of food has focused on determining a true definition of what an artisanal good is and whether an embracing of more – and often more expensive – artisanal goods in the marketplace is a move forwards in regard to food culture, safety, and security.

History

The term artisanal was originally used to refer to primarily to nonfood-related goods and skills, and evidence of an artisan class can be traced back to Ancient Egypt where workers specialized in jewelry making, carpentry, and sculpting, among other skills. During the medieval period, when artisan guilds were created to help organize and maintain standards of these workers whose livelihood and status depended on their specialized skills, the western societal role of artisans

was elevated beyond that of a slave or laborer and seen more akin to an artist. The artisan guilds of the Middle Ages included bakers and butchers, as well as experts in other food and nonfood-related skills. Many of these skilled workers continued to be a vital part of western society into the modern age. The food artisans in particular – through trial and error, new understandings in science and technique, and technological advances – continually improved their craft and helped define their role in their local and regional food culture. The result was specialty artisanal food that developed in areas and regions around the world, such as the refined smoked sausages from Germany, cured prosciutto from Italy, or aged cheese from Spain, as well as many other examples of food local to a region prepared or preserved using traditional methods unique to an area or culture.

What made the artisanal food culture in the United States unique, however, was the ways that the population learned to adapt to the available foods and climate of the New World and the eventual melding of cultures and skills, starting with what the settlers learned from the Native Americans in the 1600s and continuing with the immigration of many different cultures from Europe, Asia, Africa, and beyond into the 1900s and through to the present. All of these cultures brought their own food preparation and preservation skills and methods, inspiring the culture and adapting to the region, creating a unique artisanal food culture in the United States, noted for its independence and individuality, both for commercial sale and personal use (Eden 1999).

In the United States, artisanal food culture was evident in many towns and neighborhoods from the earliest settlers, even if the term artisanal was not often used. By the twentieth century, however, increased technological advances spurred cultural changes, fewer homes had personal gardens, and women in both urban and rural areas were more likely to purchase staples like pickles, cheese, and canned goods at a store rather than make them at home, and these purchased goods were increasingly mass-produced rather than made by local artisans (Levenstein 1988).

Further technological advances and the two World Wars also greatly influenced the

movement towards mass-produced convenience foods. The wars brought cultural changes, such as more women in the workforce, which resulted in less time spent on food preparation at home. Packaged foods like TV dinners, using technology developed for soldiers, became popular, and the introduction of fast-food chains made eating out more accessible (Shephard 2000). Agricultural moved towards monoculture as well, which, along with the increase in mass-produced foods, helped push culinary trends towards flavor homogenization. Further, after the rationing of the Second World War, feeding people food of uniform quality and safety becomes the highest priority, rather than distinction of flavor (Roudot 2004). Skilled household food preparation and preservation activities from a generation prior, such as canning, pickling, and cheesemaking, were becoming increasingly rare in urban and suburban homes, with more consumers choosing to buy the versions available at the local grocery store. Likewise, many local artisanal food producers went out of business as shopping habits moved towards the larger supermarkets and away from specialty retailers. With this move towards mass production, prices dropped for the average consumer, as did the variations in products, quality, and proliferation of food preparation and preservation skills.

The “counterculture” movement of the 1960s sparked interest in a growing segment of the population in gardening, vegetarianism, and food co-ops and brought attention to the potential health risks of the red meat- and preservative-heavy meals that had become prevalent in US homes. This influenced a shift in culinary tastes that gained speed in the 1970s when Alice Waters began to popularize “Californian” cuisine that emphasized fresh, seasonal ingredients, and traditional preparation methods. This movement began to grow into a resurgent interest in personal gardens and small-farm production, as well as traditional food preparation and preservation methods, which evolved into a “back-to-the-land” movement in the 1980s (Paxson 2010). International travel also hastened the shift of cultural tastes, with sophisticated eaters returning from their trips interested in increasingly

diversified flavors and more in touch with the artisanal foods that they encountered in countries like Italy, which had not moved towards the pervasive mass production of popular foods like the United States.

This cultural shift was apparent in a small, but influential portion of the population into the new millennium. As the first rumblings of the recession were being felt in the mid-2000s, so continued a rise in family gardens, preserving, and artisanal food production, as evidenced by the dramatic rise in cheesemakers, whose numbers doubled since 2000 (Paxson 2012). This interest in artisanal edibles grew alongside the interest in locally sourced food. In fact, since the US Department of Agriculture (USDA) began publishing the national directory of Farmer's Markets in 1994, the number of farmer's markets had more than quadrupled nationally by 2012 (United States Department of Agriculture 2012). With these new markets came new customers interested in local produce and products made from ingredients and by people, they felt adhered to their same values of environmental and economic sustainability. In addition, these markets provided a literal marketplace where small and start-up businesses could sell their products and started to gain customers relatively easily, because of the lack of need for distributors, and for a relatively low start-up cost. Also, at this time, people looking to cut costs started to grow their own food, and sales of seeds spiked in 2007, with the National Gardening Association noting that more than 43 million households grew their own food in 2009, an increase of 19 % from the year before (Sanburn 2011). Now, not only were more households harvesting their own produce and, presumably, looking for ways to preserve their bounty, but also more people were looking for work. This led to more people trying traditional preserving and preparation methods in their home, a greater cultural interest in home-made, local, and high-quality food products (Muller 2010), and an increased number of people starting food-based businesses (Casserly 2012). These businesses ran the gamut from a glut of food trucks serving mostly urban areas

to smaller-scale organic farms to specialty foods like high-end baked goods, often boasting of as "artisanal" aesthetic of preparation and quality. Many of these businesses were envisioned to cater to the new "foodie" culture that sought high-quality, handmade, and often environmentally conscious food options. This new trend in artisanal foods can be seen most prominently in the recent rise of artisanal cheese, pickles, fruit preserves, charcuterie, alcoholic spirits, and other similar small batch purveyors. The dominant narrative in each of these industries is a desire to reclaim what the makers believe are the original, traditional, or true essence of each product – and its endless variations – because of the vast dominance of mass production that each product had endured over the course of the twentieth and early twenty-first century.

Debates

While artisanal food production and craft had long histories in many countries outside of the United States, the larger culture of artisanal foods is relatively new in this country. While there have been some artisanal food makers who have retained a tradition of their craft for generations, unlike in Europe, most food artisans are relatively new with the rise of artisanal products increasing sharply after 2000. These goods may draw heavily from Old World traditions, but pride themselves on individuality. However this variety of craft products and techniques can mean the dilution of the understanding of the term artisan. Unlike Europe's highly regulated cheese industry, for example, the American Cheese Society asserts a definition of artisanal cheese but has no power to police that their members use it correctly. The European Union has rules about process and ingredients in various artisanal goods, such as cheese, and other countries, like Italy, have similar regulations to preserve the quality and identity of other traditionally made products, such as meat, wine, cheese, among other foods (Gudrais 2010). Thus, the primary debate within the artisanal food community surrounds the true

definition of the term and what, if any, regulation should be in place to preserve it.

Various organizations, craftspeople, and food writers assert that a true “artisanal” food product is one made by a skilled craftsman, using high-quality ingredients and a mastered, often traditional, technique (CUESA 2006). Some also assert that artisanal foods can only be made in small batches and with ingredients that are sustainably sourced. However, with the rise in popularity of artisanal edible or potable goods come stories of artisans who initially produced all of their goods by themselves using ingredients that adhere to the strictest of values, but who have expanded to include multiple employees, more readily available produce or other ingredients, automated methods such as mass-processed heat preserving or labeling. The question remains of when a good ceases being artisanal, even if it follows a similar recipe or technique of a small batch good, but on a larger scale. Some argue that a good retains its artisanal descriptor as long as the artisans themselves are still ensuring that the more nuanced mixing, tasting, and quality control are to their standards. Others cite any form of automation or any deviation from traditional methods as unworthy of the artisanal moniker. Only the cheese industry has a somewhat standard, although unenforced, definition of artisanal cheese, which is understood to mean a product made primarily by hand, in small batches, with attention paid to the quality of the ingredients and the skills used in production (Raskin 2012). This also represents the overarching general understanding of the term by the consumers, food writers, and producers who are familiar with this segment of the market. Thus, while the average consumer may not be concerned with the debate surrounding the term “artisanal” as used by corporate marketers to describe clearly mass-produced items like pizza or potato chips, the numbers who do seek out specifically “artisanal” goods – the National Association for the Specialty Food Trade (NASFT) conducted a study in 2011 which found that 26 % of specialty-food consumers seek out

artisan products – are growing making the debate over standardization of this term even more pertinent and could lead to misrepresentation of the true nature of products and the devaluing of artisanal goods and methods.

With the consumer desire for artisanal goods is growing and the relatively easy entrance into this market at community spaces like farmer’s markets comes the concern of food safety. Numerous artisans cite the often arduous safety or legal regulations that have been a detriment to their growing business, with a great number of craftspeople admitting that they began their business in their kitchen or some other unregulated and illegal space. Most food safety laws are regulated at the state level, although many are similar and include the need for food sold for public consumption to be produced in a certified commercial kitchen, with other frequent requirements including the need for a food processing license or lab tests to ensure food safety. Some exceptions to these laws include allowances for farmers who process produce they grow or “non-potentially hazardous” items to be produced in home kitchens (Gansky 2012). Many artisanal producers note the high price of these regulations – which can reach into the thousands – and cite this as a major burden for starting a business and staying profitable. They have lobbied for more changes to the “cottage food laws,” as they are known, which have resulted in more than thirty states creating allowances for the sale of small batch food items, often limiting the types of food that can be produced and sold and putting a ceiling on allowed profits (Andrews 2012). However, proponents of keeping food safety laws strictly in place note the long history behind these regulations, which historically have greatly reduced illness from food produced in unsanitary environments or through questionably methods, and cite the need to keep standards high to ensure the integrity of public health.

Another issue faced among artisanal food producers is whether the term encompasses a specific value system of environmental ethics. Many small producers begin with a commitment to source their ingredients seasonally, organically,

or from local farms, while others merely put an emphasis on self-assessed “quality” raw materials. These purveyors note that this is borne out of the true intent of many artisans throughout history, who were fully integrated with every step of procuring and creating their product, such as illustrated via the strict regulations on ingredients of artisanal foods in Europe, where there are numerous continent- and countrywide rules on the ingredients and methods necessary for proper labeling of specific artisan-made goods, such as types of cheese, sausage, or wine. Some artisans argue in favor of a more exclusive definition of the term, looking to a study that cited an understood level of quality and environmental consciousness in a good labeled “artisanal.” This research looked at the artisanal food culture in Ohio to determine the definition and motivations of artisanal food producers and corroborated a commitment to handmade aesthetic, quality, and environmental concerns – with ingredients often organic or locally sourced. (Caricofe 2011). These findings echo what other artisans in favor of a more exclusive definition of the term argue. Opponents note, however, that Americans pride themselves in their independence and would resist additional bureaucracy, with even the large artisanal cheese industry preferring not to pursue regulations, offering instead standard definitions only as guides for labeling (Gudrais 2010).

Further, the issue of environmentally conscious sourcing as part of the definition of an artisanal good can be complicated. Shipping heavy jars, or perishables like charcuterie and cheese, can increase the carbon footprint or call into question the often initial business philosophy of environmental sustainability. The true environmental and health costs of nonorganic and nonlocal goods are often debated, with others noting that high-quality ingredients can be environmentally sustainable, even if they do not share these distinctions (McWilliams 2009). Likewise, not all artisans put high priority on organic or local ingredients or handmade techniques, asserting that promoting artisanal goods made with whole ingredients, like dessert topping

made with fresh cherries – even if with the inclusion of sugar – and less processed or unnatural ingredients like high fructose corn syrup and food dye, is beneficial to consumers and the environment overall, even if the ingredients are not sustainably sourced or the production methods used are sometimes automated. These proponents cite that anything that keeps traditional preservation methods alive, and goods with fewer preservatives and more produce and whole foods in demand, is a positive outcome (Raskin 2012).

Along with environmental sustainability comes the issue of business viability. Some artisans note that they feel pressured by some consumers and fellow craftspeople to keep production as small and handmade as their business survival will allow, sometimes even eschewing automated chopping or mixing machines. Strict adherence to completely handmade can result in higher prices, more barriers towards expansion, and issues of business sustainability, depending on the industry. This reality of business sustainability and the related issue of affordability are issues that many artisanal producers deal with. For the home artisan, whether the material and time required to make a product for personal consumption is worth, it is a personal decision, akin to a hobby or based in preserving traditions, and is worth a higher cost. For others, using raw materials from their own farm or garden, or purchased cheaply in season, making a large amount of an artisanal good for personal use and perhaps to trade with others in their community, is cheaper than buying the goods at retail. However, from a business perspective, often the real calculated cost of selling a jar of artisanal jam or pickles can be many times the price of the mass-produced version to reflect the true price of high-quality produce, packaging, and manual labor. While some consumers are willing and able to pay that amount, many artisans note that lowering the cost of their goods can improve their profitability and overall ability to provide what they consider higher-quality foods to a larger population, making a case for a more liberal interpretation of the definition of artisanal production. Those in favor keeping the term artisanal highly defined or exclusive would note that

any dilution of the term would create a slippery slope resulting in lower-quality products and lost culture or methods that some artisans care deeply about retaining.

Despite these debates over safety, sourcing, and costs, the proponents of artisanal food – both produced for profit and also for personal use – note the unquantifiable positive effect of community building. This can be seen through the exponential growth of farmer's markets that sell artisanal goods in addition to produce, community classes teaching traditional production and preservation methods, and the myriad first person accounts of small batch producers who cite the help of friends, family, consumers, and even other artisans as helping them refine their process and build their business.

Summary

There is no denying that artisanal food production has long been an integral part of global food culture. With increasing industrialization in the western world in the late 1800s and early 1900s, the number of artisans – creating edible goods for both commercial and personal use – dropped, and mass-produced food became more popular in the vast majority of households. However, the past decade has seen a rapid return to these traditional methods of food production for a number of reasons, including the desire to explore and preserve tradition and the increased consciousness about the quality and provenance of one's food. For commercial artisans, there are barriers to entering this increasingly crowded marketplace, including the cost of licenses and fees to operate a certified food production business and the increasing dilution of the term "artisan" through large businesses who seek to cash in on this growing trend. However, even with artisanal goods priced at a premium over similar mass-produced items, growth in this sector of the market is still robust, which seems to indicate that the consumer interest in true artisanal goods – and the values that these products often embody – is only increasing.

Cross-References

- Farmers' Markets
- Local and Regional Food Systems
- Public Institutional Foodservice
- Slow Food

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Asian Cuisine: Ethical Considerations

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Synonyms

Asian Food; Religious Aspects Vegetarianism

Introduction

Numerous factors shape decisions about what to eat, including region and geography, nationality, social class, ethnicity, and – central to this piece – ethical considerations.

Ethical belief systems influence not only what people eat or do not eat, but also how people eat and who they eat with. Other food and cuisine-related issues having ethical implications include hunger and food security, shifting diets and their repercussions, and sustainability.

This piece focuses on South Asia, especially India, and East Asia, primarily China, Japan, and Korea. China has some of the world's oldest cuisines which have had an enormous impact on other countries – especially in East Asia – in terms of ethical/religious belief systems and their impact on food. I also briefly consider mainland Southeast Asia, especially in terms of the

influence of India or China. This omits large areas of Asia, such as the so-called Middle East and other areas in Southeast Asia. Asia is an incredibly diverse area with a wide range of food and cuisine and even within nations themselves there is incredible diversity. India and China themselves are each comparable to Europe in many ways including diversity of foods. As Sen (2004, p. xviii) cautions, “there is no national cuisine in India or even a single national dish.” This is true of China as well.

There are conflicting definitions and debates over the meaning of cuisine. One useful definition emerges from Pettid's (2008, p. 10) history of Korean food. Cuisine refers to how

Cultures manipulate and transform potential food-stuffs into what these cultures consider proper food. Thus, what makes Korean foods ‘Korean’ includes the detailed processes that Koreans use to transform various raw materials into food that is culturally considered to have been prepared correctly. In conjunction with the manner of preparing food are the cultural practices that determine what can, or cannot, be eaten, the manner in which meals are taken, and the social significance attached to various foods.

This definition makes it clear that cuisine is related to a variety of issues related to food, including food preparation, beliefs, and consumption. In this sense, cuisine refers to what Albala (2012, p. 1) defines as food culture, “the entire set of beliefs and practices surrounding food, agriculture, distribution, and consumption and any topic related to food.” This approach is adopted here.

Ethics is ultimately about values and value conflicts. Introducing *The Philosophy of Food*, Kaplan (2012, p. 9) suggests that food “is about serious things like hunger and malnutrition, diabetes and heart disease, eating and being eaten. It is a profoundly moral issue. It always has been. Even ordinary, everyday acts of cooking and eating are forms of ethical conduct.” Throughout history belief systems have prescribed what and how to eat, at the same time as they proscribe other choices. Therefore, this piece will examine the genealogy of important Asian belief systems and their relevance to food. Kaplan suggests that

in addition to questions about what we should eat, food ethics raises questions of how we should eat and whether or not to eat meat. The question of meat eating or vegetarianism is central to ethical considerations on Asian cuisine, as are ethical questions related to hunger, health and well-being, and sustainability.

Origins and History

Since humans moved out of Africa and into other parts of the world, food has been central to our survival. The earliest human groups subsisted on gathering and hunting. It seems likely that the differentiation of different types of food had not started then. Differentiation and stratification within these groups was also minimal. There are various theories of the role that food played in the development of modern humans, with some suggesting that it was an early reliance on meat. Richard Wrangham (2009) famously hypothesizes that cooking is a central factor, perhaps the central factor, in human evolution. Cooking also provides the basis for the development of various cuisines. Fernández-Armesto (2002) suggests that the history of food can be seen through a series of revolutions in food.

The first revolution is the invention of cooking, which fits with Wrangham's ideas. In the second revolution, humans move beyond food as merely subsistence and begin to attribute meaning, often religious or superstitious, to food. Ethical beliefs about food surely emerge from this transformation. His third revolution – the “herding revolution” – deals with the domestication and breeding of some animal species. This is followed by a revolution in developing agriculture. The fifth revolution refers to the beginnings of the stratification of food in increasingly hierarchical human groupings. The differences between the food of the elites and the food of the common people are central features of cuisine after that. Fernández-Armesto's sixth revolution is the inception and spread of long-distance trading and is “the ecological transformation of the last 500 years, which is usually

called the ‘Colombian Exchange,’ and the place of food stuffs in it.” His final revolution is the industrialization of the last several centuries.

In developing this scheme Fernández-Armesto makes some fascinating arguments about the history of food. Although it provides an overall orientation to food history, a less detailed periodization of revolutions can be useful. The first, the Agricultural or Neolithic Revolution, marked the development of agricultural production in about 9500 BCE in the West and about two centuries later in China (Morris 2010). This shift from food gathering to food production enabled and required basic changes in human social organization. One such change is indicated by noting that this revolution is also called the First Urban Revolution. The new mode of food production made large human settlements possible, something that was not supportable for nomadic bands of hunter/gatherers. It depended on the development of social organization characterized by an enhanced division of labor and increasing hierarchy and stratification. Religious and government specialists were able to live based on the cultivation, gathering, storage, and control of food by other groups. This marks the beginnings of differentiation of foods among various groups, a differentiation that was often justified by appeals to religious or other belief systems. It also signaled the onset of developed hierarchies in human societies.

In *Cuisine & Empire*, Rachel Laudan (2013) makes invaluable contributions to understanding the development of world cuisines from various perspectives, including ethical ones. She suggests that one can trace the history of half a dozen major families of world cuisines and “that each was shaped by a culinary philosophy that defined what cooking was and how cuisine was related to society, to the natural world . . . , and to the supernatural” (2013, p. 1). Laudan hypothesizes that these cuisines had all been shaped by long-distance transfers. These interactions among various regions and the ethical belief systems of those regions shaped the development of various Asian cuisines and the ethical systems that influenced them as well as the ethical outcomes generated by them.

Religion and Food Choices: India

India is one of the most diverse countries in the world with a rich variety of cuisines within it (Achaya 1994, 1998). The diversity encompasses not only food and cuisine, but also religion and ethnicity, which both affect cuisine. India is home to numerous religion traditions, three of which originated there, and they each have beliefs about food that have ethical consequences for cuisine. In addition to Hinduism, Buddhism, and Jainism, other religions have played an important role in India throughout history. For example, India has the third largest Muslim population in the world. Other groups such as Christians, Jews, Sikhs, and Parsis have been important as well, but here I focus on Hinduism, Buddhism, and Jainism and their effects on cuisine.

It is not surprising given the centrality of food to people's lives that ethical considerations based in these belief systems would affect food choices. As Collingham (2006, p. 4) argues,

Each of the religious communities on the Indian subcontinent is distinguished by their particular food taboos, especially with regard to meat. Thus for example, Christians will eat virtually any meat or fish. Muslims will eat most meats, including beef, but avoid pork. Jains are usually strict vegetarians, and sometimes even avoid red foods, because they are the color of blood. Hindus will not eat the flesh of the sacred cow.

There are exceptions to each of these and economist Amartya Sen, quoted by Colleen Sen (2004, p. xvii), makes the point even more strongly when he notes that one cannot understand any aspect of Indian society, including food, "without seeing the extensive interactions across barriers of religious communities. These include Hindus and Muslims, Buddhists, Jains, Sikhs, Parsees, Christians, Jews, and even atheists and agnostics."

But it is not just religion that determined what was appropriate to prepare and eat. "In traditional India, what and how people ate was inseparable from their religion, the life-cycle stage, town and region, caste and/or social status, family

traditions, health concerns, and spiritual beliefs:" (2004, p. 29). The religions themselves were not monolithic. Although each had, and has, its own rules about what to eat, there are numerous sects and subgroups within each religion and they each have their own food prescriptions and proscriptions (Sen 2004).

Hinduism is the third largest religion in the world. Not created by one person, it is a syncretic belief system characterized by a wide variety of beliefs and sects. Hinduism developed during the period 1000–500 BCE and with it came a caste system which divided people rigidly in all areas of life, including food and eating. Although the Aryans, who had developed Hinduism, were not vegetarians, an aversion to killing and eating meat, especially cows, had developed by 1000 BCE. Sen (2004) suggests several reasons for the emergence of this move away from beef. One important factor may have been how valuable cows were in a variety of ways, such as plowing, giving milk, and producing manure used for fuel. Religious reasons – such as the development of beliefs in reincarnation – were also important. Because humans can come back as animals, the idea of slaughtering animals became less attractive and ethical.

It is not only what to eat that constitute moral and ethical issues in Hinduism, but also how food is prepared, handled, and served. For Hindus, "in this world and beyond, the cosmic moral order (dharma) regulates the availability of food to all creatures" (Khare 1992, p. 5). In India, food is, among things, a moral substance. Many of the distinctions among types of acceptable foods and many of the rules about who can eat what and with whom have declined in significance in recent years, especially for urban dwellers. However, vegetarianism remains important, although there are many gradations of meaning of vegetarianism and estimates are that 25–30 % of Indians are vegetarians (Sen 2004), which would make them the largest concentration of vegetarians in any country, given India's population size.

Islam has a significant presence in India, with the world's second largest Islamic population. The key restrictions on food in Islam are the

prohibitions against eating pork and drinking alcoholic beverages. Meat that is slaughtered and prepared according to Islamic regulations is called *halal*.

Two other important religions – both of which have major ethical implications in regard to food – originated in India in the sixth century BCE: Jainism and Buddhism. In Jainism, founded by Varhaman Mahavira, the central doctrine “is that all nature is alive,” and should not be harmed (Sen 2004, p. 10), thus leading to the doctrine of *ahimsa*. The term means nonviolence, and stresses the avoidance of harm to living things. The concept is also important in Hinduism and Buddhism. Given their strong adherence to this doctrine, it is not surprising that for Jains eating meat was considered abhorrent and they are strict vegetarians. The Jain food proscriptions may well be the most rigid in the world, encompassing not only “meat, fish, and eggs, but thirty-two things that are believed to contain the germs of infinite life” (Sen 2004, p. 34).

Buddhism was founded in India by Siddhartha Gautama, later known as the Buddha. His emphasis was on moderation in all areas of life, including food. Although Buddhist monks were vegetarians in their monasteries, when they traveled and begged for food they ate whatever was offered to them. Today Buddhists make up less than 1 % of India’s population (Sen 2004). Although Buddhism has played an important role historically in India, it has arguably had more important effects beyond India. From India, Buddhism spread to China and from there to other parts of Asia.

Religion, Ethical Systems, and Food: China

In China, food choices and ethics were most affected by three sets of belief systems or ethical codes. In addition to Buddhism, from India, two indigenous belief systems – Confucianism and Daoism – shaped food ethics in China. Other religions and belief systems, such as Islam and animism, also played important roles, but the

three listed were most influential. Albala (2012) suggests that Chinese food and eating were shaped by the three traditions of Confucianism, Daoism, and Buddhism. It is important to keep in mind that Chinese food and eating patterns were and are diverse.

Confucianism was derived from the writing of Confucius (called Kongzi in China) who lived 551–479 BCE. He emphasized social harmony based on one’s place in an ordered society and an awareness of one’s obligations to those above and responsibilities to those below one in the social hierarchy. This started at the level of the family with children owing filial piety to the father, who is seen as the household head. The father in turn had obligations to those above him and those eventually reached to the top level of society. Properly followed this awareness would enable life and society to function smoothly. “This translated into a fully codified set of manners, a way to avoid potential conflict, including at the table” (Albala 2012, p. 44). Albala notes that this explains why the Chinese developed and used chopsticks and did not use potentially dangerous implements such as forks and knives.

Daoism, founded by Laozi in the sixth century BCE, emphasized appreciation of nature with a focus on its simplicity and beauty. Albala (2012, p. 44) suggests that Laozi’s most important contribution to Chinese “culinary culture is the espousal of a simple diet tied closely to ingredients directly from the soil, treated without artifice.” Albala notes that an appreciation of food close to its natural state is at least an indirect consequence of Daoism.

Fried (2004) shows how failing to follow the appropriate eating etiquette and form led to disastrous results in Zhang Yimou’s 1992 film *Raise the Red Lantern*. She notes traditional sayings which emphasize the centrality and importance of food in China, for example, “To the people, food is Heaven.” In this film, Master Chen takes a fourth wife or concubine and the new wife contravenes the expected food etiquette in various ways, therefore committing serious ethical and social breaches which – with some other factors – lead to a disastrous outcome for her.

Thus, the movie demonstrates that “communal adherence to food etiquette and the rituals of dinner reflect societal behavior critical for all aspects of household and societal harmony; if dinner is disrupted, so is the flow of daily life” (Fried 2004, p. 131).

Even though Confucian beliefs, such as those underlying the above example, and Daoism were passed on to Korea and thence to Japan, the impact of Buddhism on ethical beliefs and norms relating to food is perhaps more directly important in China than Confucianism or Daoism. From its origins in India, Buddhism made such rapid inroads into China that Morris (2010, p. 323) refers to remarkable “Buddhism’s conquest of China.” From a few hundred adherents in 65 CE, Buddhism claimed perhaps 30 million followers by the sixth century.

In understanding the impact of Buddhism on ethical beliefs about food and eating in China, it is essential to keep in mind that Buddhism is composed of multiple schools of thoughts and sects which have different consequences for ethical considerations about food. There are three broad schools of Buddhism and numerous sects within each. *Theravada*, or *Hinayana*, Buddhism is the oldest and considered the most conservative school, but it has few proscriptions on food. Most adherents live in Southeast Asia and Sri Lanka. *Vajrayana*, or *Tantric*, Buddhism originated in India and is most highly concentrated in India and Tibet. *Mahayana* is the largest of the three schools. It was highly influential in China and, in different varieties, in Korea and Japan.

The different schools of Buddhism and the differing interpretations within and between each have given rise to different approaches to the ethics of food. Monks and laypeople have varying obligations in regard to food. As Lapp (2013) notes, “the most prominent dietary practice, and question of ethical debate, pertaining to Buddhism has to do with vegetarianism.” This is related to the injunction not to do harm expressed in the doctrine of *ahimsa*. Practitioners are also called on to avoid eating the “Five Pungent Spices” – onions, garlic, scallions, chives, and leeks – because they may kindle sexual desire or anger.

Indianization, Sinicization, and Asian Food Ethics

The food ethics associated with Hinduism and Buddhism also spread to Southeast Asia. Islam also plays a key role. The impact of outside influences has waxed and waned in Southeast Asia, with both India and China notably influencing the area. Indianization, “the influence of southern Indian traders and religious practitioners in Southeast Asia” (Van Esterik 2008, p. 5), brought Hinduism, Buddhism, and mixtures of both to the region. Theravada Buddhism is mainly practiced in mainland Southeast Asian countries, including Myanmar, Thailand, the Lao People’s Democratic Republic, and Cambodia, although practices vary among them. In terms of ethics and food, “Buddhism and food intertwine at the level of rituals and lay offerings, but also at the level of ideology and text” (Van Esterik 2008, p. 99). There is an emphasis on moderation in food, or what could be called “moderate asceticism” (Van Esterik 2008). Theravada Buddhists are not generally vegetarian and neither are most Southeast Asian societies.

Van Esterik points out that where Mahayana Buddhism is more popular, such as in Vietnam, vegetarianism is more widely spread. Vietnam is the most Sinicized country in Southeast Asia. China had numerous influences in Vietnam, but one is the use of chopsticks. Vietnam is the only Southeast Asian society in which this is the case (Van Esterik 2008).

Korea’s closeness to and interaction with China ensured that both Buddhism and Confucianism would spread to Korea. By the fourth century BCE, both belief systems were present in Korea and both influenced numerous aspects of Korean culture, including cuisine. The Buddhist Koryŏ Dynasty (918–1392) unified the Korean peninsula and the succeeding Chosŏn Dynasty (1392–1910) was guided by Confucian beliefs (Pettid 2008). In terms of the ethical aspects of Korean food, the type of Mahayana Buddhism that developed in Korea led to the popularity of vegetables of all sorts and to the development of various vegetarian dishes. This was not completely new. “The tradition of incorporating

numerous vegetables and greens into foods probably is an ancient one that evolved from pre-agrarian times and was greatly enhanced by Buddhist beliefs that one should refrain from eating meat” (Pettid 2008, p. 51).

As in China, Confucianism had less to say about what to eat, but emphasized how to eat and in what order. There was an order to who would eat first and in what order people would eat, especially in better off families. Pettid notes these patterns “reflect the Confucian view of the hierarchy governing gender and age relations” (2008, p. 159).

Buddhism and Confucianism also entered Japan from at least the sixth century BCE and both have been extremely influential there, especially Buddhism. There are numerous sects with varying foci. In terms of food ethics, one of the most influential thinkers was the Buddhist monk Dōgen (1200–1253). He founded the Soto Zen sect and wrote a manual on cooking. *Shōjin ryōri* cuisine, which is Buddhist vegetarian cuisine, emerged from the ideas of Dōgen and others (Ashkenazi and Jacob 2000).

Contemporary Ethical Issues

Introducing this work, the editors point to expanding areas of interest within the study of food and agricultural ethics. “These wide-ranging debates encompass questions in human nutrition, animal rights and the environmental impacts of aquaculture and agricultural production” (Thompson and Kaplan 2014). Among these and other topics, the continuation of what Carolan (2012) refers to as the “globalizations” of food take on exceptional significance, as does a dietary transition that transforms food and cuisines around the world (Smil and Kobayashi 2012). This transition is eroding some of the distinctiveness of food around the world, lessening culinary differences, and raising questions about health and well-being. As diets around the world, including in Asia, trend to more Western diets, with heavier consumption of meat, diabetes and other diseases become more common. The appeal of meat also raises questions of

sustainability, with some scholars arguing that meat eating is essentially not sustainable (McWilliams 2009). These changes decisively shape what may be called Asian cuisine, homogenizing it in the process.

The importance of the ethical dimensions of food and agriculture are also evident in the decision of the Food and Agriculture Organization (FAO) of the United Nations to publish their Ethics Series. The Foreword to the first entry in the Ethics Series of the Food and Agriculture Organization (FAO) of the United Nations starts by commenting that “the stubborn persistence of hunger and poverty raises what are perhaps the most burning ethical questions of our age (FAO 2001, p. iii).” The importance of food ethics has become increasingly clear in recent years, as indicated, in part, by this encyclopedia as well as the FAO series.

Although it may not be directly related to Asian cuisine, especially in terms of food culture and cooking styles, as the FAO indicates, the most basic ethical issue remains access to food. Over one billion people do not get enough food, while almost one and one half billion are overweight. These extremes are linked and they affect many in Asia. The debate over food security – the ability of people to get nutritious affordable food through regular channels – has become a major issue all over the world, with India being a powerful example. This is an extreme amplification of the distinction in Asian, and other, cuisines between elite and poor cuisines, and one that has serious consequences. The recently passed Food Security Ordinance of 2013 in India addresses food security issues, in some ways helpfully, but in others not. According to development economist Jean Drèze (2013), “the food security bill is a fraction of what is required to tackle India’s enormous nutrition problems.” The issue of food security leads to questions of what is the ethical imperative of the developed world to ensure adequate food and nutrition in the developing world, as well as pockets of food insecurity in developed societies. How can cuisines for the poor and rich be brought into greater congruence, in Asia and the rest of the world?

Summary

This piece introduced the topic, spelling out its limitations and scope in terms of Asia, cuisine, and ethics. After examining the origins of cuisines it moved to consider the ethical aspects of food in India and then China, emphasizing the belief systems and religions that generated ethical beliefs on food. It then looked at the spread of those belief systems and food ethics to areas in Southeast and East Asia. The piece concluded with an overview of contemporary ethical issues relevant to food and cuisine in Asia.

Cross-References

- [Buddhism, Cooking, and Eating](#)
- [Buddhist Perspectives on Food and Agricultural Ethics](#)
- [Chinese Agriculture](#)
- [Ethics and Food Taste](#)
- [European Cuisine: Ethical Considerations](#)
- [Hinduism and Food](#)
- [Islam and Food](#)
- [Jainism and Food](#)
- [Vegetarianism](#)
- [Water, Food, and Agriculture](#)

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Authenticity in Food

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Synonyms

Authentic dishes; Dishes; Traditional foods

Introduction

In reference to dishes, authenticity is a central axiological category, informed by aesthetic and

ethical concerns, much used and abused on the part of both consumers and retailers. The application of the concept of authenticity to dishes has indeed grown to be so widespread that – in contrast with a previous reading of the term – some scholars regard judgments of authenticity as social constructs far from any possibility of falsification. Another school of thought, instead, sees authenticity as the expression of a genuine existential sentiment. In order to present the different perspectives, the entry opens up with some terminological remarks on the use of the expressions “dish” and “recipe.” To be offered next is an examination of different interpretations of “authenticity,” then employed to present four perspectives on the authenticity of a dish.

Dishes and Recipes

Before proceeding any further, the reader shall be made aware of certain important disambiguations. “Food” is sometimes used to refer to a *dish* and other times to a *recipe*, two notions whose difference shall be explained below. For the sake of clarity, the use of the expression “food” will be limited in the remaining of the entry, specifying which of the two senses is intended. Secondly, “food,” “dish,” and “recipe” are subject to a similar double interpretation: at times they refer *merely* to the item that is consumed – say, a tray of tiramisu; in other contexts, however, the expressions refer to that item *plus* the relevant events that brought to its realization; the relevant events, in turn, may be limited to the action of the cook (say, all the toil and labor that went into preparing the tiramisu) or rather include a more extended series of events (e.g., the chicken farm where the eggs were produced). The latter will be termed the *extended food/dish/recipe concept*. This entry will mainly attempt to offer a characterization of dishes and recipes in the extended sense; a derivative understanding of the less extended versions may ensue.

Authenticity, in reference to foods, is more aptly predicated of dishes; an authentic dish is a dish authentically reproducing a recipe. It is,

then, relevant to explain the distinction between dishes and recipes. To put it bluntly, a dish is the *stuff*, a recipe is the *idea*. More precisely, a dish is the specific concoction of that perishable edible stuff, such as *those* specific actions that led to *this* tray of tiramisu sitting on my kitchen counter. On the other hand, a recipe is – in first approximation – the array of repeatable aspects that are found within a dish; that is, a recipe comprises any relevant aspect of a dish whose replication would deliver a dish of the same sort. In this sense, recipes stand for those *sorts* of actions that deliver certain *sorts* of dishes.

What is the relationship between recipes and dishes? Utilizing a terminology familiar to the contemporary literature in metaphysics, a dish can be an *instance* of a recipe or, alternatively, an *example* of a recipe. This tray of tiramisu – a dish – is an instance of tiramisu’s recipe; last week another instance of tiramisu was prepared, which has now been all eaten up.

Not every dish, however, need exemplify some recipe. While in principle every dish has some aspect to it that could be replicated, only selected dishes enter the ranks of recipes. Indeed, it might be that some dishes are such gerrymandered or random concoctions of foods that there is no relevant repeatable aspect to them. Furthermore, a recipe may exist before having been instantiated or, in extreme cases, without ever being instantiated. Before executing a novel recipe for the first time, it seems accurate to say that the chef who came up with it had the recipe. Other times, of course, the dish and the recipe come to be simultaneously: as the chef makes a dish, she is also – maybe accidentally – discovering the recipe.

Even if for every dish there is a recipe, the partition of dishes into recipes would still remain the most salient matter of dispute in the foodworld. Do *cecina* and *farinata*, as found respectively in the Italian culinary *milieus* of coastal Tuscany and Liguria, indicate different recipes? Who is entitled to judge of the matter? The partitioning of the foodworld, whose study lies beyond the scope of the present entry, is thus crucial to establish the identity of both dishes and recipes.

“Authenticity”

The axiological relevance of authenticity can hardly be overestimated. Its underpinnings may concern either the aesthetic value of a situation or a thing, or its ethical worth, or both, depending on the context in which the term is employed and on the rationale for its usage. The expression “authenticity” has indeed much relevance in a number of fields, including visual arts, musicology, and cuisine. In reference to a person, authenticity stands for a virtuous disposition, achieved through the cultivation of simpler traits such as discernment, honesty, sound reasoning. In philosophy, the idea of an authentic life occupies a central role in existentialist philosophy and has been employed most notably by figures such as Kierkegaard, Nietzsche, Heidegger, and Sartre (cfr. Ferrara 1998; Taylor 1992). Being an authentic person means being *true to yourself*. In a nutshell, regardless of external conditions, the authentic person will persist in her most fundamental propositions. However, it is key not to confuse authenticity with stubbornness. The stubborn will persist in her decisions even when they contrast with paramount changes not just in external conditions but also in personal convictions; the authentic person, instead, will be able to discern her changes and channel her actions in such a direction that they will be most suitable in keeping with her present dispositions and, when applicable, her history. Personal authenticity, then, is entrenched with creativity. The truth in question, when it comes to the authentic life, is uncovered through a creative process rather than via an examination of the past or a measurement of what is present.

How authenticity applies to the arts is much debated. To address the issue, it is useful to borrow the distinction, introduced by Nelson Goodman (1976), between *allographic* and *autographic* forms of art. The former can be represented by a language other than the one in which they are expressed; an autographic piece of art, on the contrary, cannot be expressed other than by itself. For instance, music is an allographic art because musical notation can make do for a musical piece – thus the limit case of

pieces that have never be executed; on the contrary, painting is autographic, as any way of representing a painting cannot substitute for the actual work. In visual arts, where autographic works are predominant, authenticity seems to be employed especially to underline a genuine attribution of authorship; the opposite of an authentic work of visual art is, then, a *forged* work (cfr. Hick 2010). Central to an allographic form of art like music, instead, is the notion of *authentic execution* of a piece, and it is debated which performances best deserve such an etiquette (Kivy 1995) – those employing original instrumentation? Those eliciting similar effects in the audience? Those most faithfully interpreting the score, when available? Another story still is authenticity in the context of a collaborative art, as in the case of architecture, which is partially autographic and partially allographic. Three notions are most relevant in architecture: authenticity as authorship, as opposed to forgery; authenticity as cohesion, on the part of an architect, with her own past projects; or authenticity as adequate application of certain architectural creeds to a given situation.

Dishes are human artifacts bearing aesthetic worth; although it is debated whether selected foods may be regarded as forms of fine art (cfr. Telfer 1996, Chap. 3), what said of the arts has a bearing on foods as well. First, we may wonder whether cuisine is an allographic or autographic endeavor. There are several means of expressing a recipe, from cookbooks to culinary reports to videos: this suggests the allographic nature of cuisine. On the other hand, none of the means to express a recipe seems to be able to fully substitute for the actual execution of a recipe that is a dish; the upshot is that cuisine has a fundamental component of creativity too, an adaptation of a generic procedure to circumstances. The unavoidable creative component is implied also by the fleeting nature of food. Out of material necessity, each dish employs novel ingredients: food is perishable and transient; taste is a *destructive* sense, as it destroys what it experiences; and cuisine is a destructive endeavor, as it irreversibly transforms what it prepares to be consumed. Thus, whoever creates

a dish, even on the score of a recipe, will be employing ingredients that are *unique* and that contribute crucially to the aesthetic quality of the gastronomic experience.

Authenticity in Foods

The authenticity of foods has been at the center of a wide debate in the social sciences, particularly intense in the last 15 years, so much so that, according to Taylor (2001, p. 8), “there are at least as many definitions of authenticity as there are those who write about it.” In the attempt to devise some threads in the literature, we may extrapolate four distinct perspectives:

1. *Realist perspectives on the authenticity of a dish.* The realist maintains that judgments of authenticity are true or false depending on whether the dishes have or lack certain characteristics. For instance, from a reading of Boorstin (1964), one may extrapolate the idea that an authentic dish reenacts a recipe in accordance to a specific relationship between a people and a place. Boorstin’s proposal, however, has been criticized because it presumes a *static* view of a culinary culture, as opposed to one accommodating the seemingly unavoidable possibility of its evolution. Realist perspectives on the authenticity of a dish need not be static, however. It is possible to recognize that certain traits are essential, *at a given time*, in establishing the authenticity of a dish, without assuming that such traits will be valid in the future. Geographical indications (cfr. entry on GIs), which will be more fully considered below, are a case in point here. While the geographical area of production and the essential features of a product such as Champagne wines have changed over the centuries, current standards of production provide allegedly objective criteria on the basis of which a wine is judged as an authentic champagne. Of course, some may argue that the standards associated to a geographical indication are more a product of human *fiat* (ultimately creating a brand) rather than the expression of some fundamental natural
2. *Constructivist perspectives on the authenticity of a dish.* Constructivist perspectives on the authenticity of a dish move from the observation that no human culture is ever wholly separated from all other cultures; rather, cultural contamination is the norm. What comes to be seen as authentic, then, is the outcome of a selection process ultimately guided by human *fiat*. For instance, there is no objective boundary between authentic and non-authentic Thai cuisine, rather some ingredients, cooking methods, serving tools, etc. are chosen by consumers as being more authentic than others (cfr. Germann Molz 2004 and Urry 2005). Analogous considerations will be made with respect to geographical indications: the borders of the Chianti Classico region as well as the rules and regulations regimenting its production are not discovered, but conventionally established. The upshot – as summed up by Sims (2009) who draws on Jackson (1999) – is that “instead of talking about “authenticity,” we should focus upon “authentification,” which is the process whereby people make claims for authenticity and the interests that those claims serve” (Sims 2009, p. 324).
3. *“Existentialist” perspectives on the authenticity of a dish.* Some existentialist notions have entered the contemporary debate on tourism and authenticity (cfr. Wang 1999; Sims 2009, pp. 324–325); the ensuing proposal may be labeled “existentialist,” among quotes, since it comes free of the broader theoretical framework of existentialism. The basic idea – when applied to our case in point – is that gastronomic experiences contribute to create a sense of the self; the quest for authentic dishes, then, becomes the quest for the realization of an authentic self. This perspective shares much with the constructivist, as it starts from the assumption that there can be no objective authenticity of a dish; on the other hand, for the “existentialist,” there is a form of authenticity which may be genuinely devised – personal authenticity. What sorts of

experiences are conducive to personal authenticity and which ones are not, however, remains to be cleared. We may speculate that those experiences conducted independently from societal constraints and in keeping with core personal creeds are to be preferred; still, work remains to be done in this area.

4. *Naïve perspectives on the authenticity of a dish.* Finally, we come to a perspective paying dues to naïve approaches to authenticity (Cohen 2002). To an ordinary gastronome, some dishes *are* authentic, without the need to justify why that is the case. What to a culture theorist appears as a social construction or an “existentialist” quest to the naïve gastronome is simply a *sui generis* experience: it is all a matter of relaxing and enjoying a certain way of preparing and serving food. At times, there, you will encounter authenticity.

Authenticity in a Globalized World

The naïve perspective on authentic dishes opens the door to some conclusive remarks on the importance that the concept of authenticity in the kitchen has assumed in contemporary society. Three are the domains where the concept is more notably employed. The first comprises all experiences of “exotic eating” in local restaurants (Heldke 2003), as when visiting a Thai restaurant in Helsinki or an Italian restaurant in Bangkok. Such contexts typically reinforce the conviction that a realist perspective on authentic dishes is of little use.

The second domain is tourism (Heldke 2005; Sims 2009). Also in this context, we find chief examples reinforcing the thesis that the realist perspective is untenable. In tourism, indeed, the traveler’s demand for an authentic experience encounters the needs of merchants to package an experience that will match the expectations. Thus, landscapes will be “beautified” so to appeal to visitors – for instance, in a region famous for its wines, vineyards will be embellished and become predominant with respect to other plants; restaurants will orient their menus on the basis of the

preferences of the visiting clientele; and architectural styles and internal décor of living spaces will seek to match the tourist image of a place.

The third domain is the quest for local foods, particularly important to study as it suggests that the realist perspective held strong up to these days. Authenticity is indeed often associated to local foods and geographical indications, which in the mind of most consumers demarcate genuine, real relations between foods and places, making for an unrepeatable experience. Here is an example attesting the trend, from a study by Sims of two regions within the United Kingdom, the Exmoor, and the Lake District:

Tourists tended to associate local food with particular specialty products. Of the 36 Exmoor tourists interviewed, 32 were able to name specific examples of foods and drinks that they associated with the area, with a similar trend being observed in the Lake District, where 38 of the 42 tourists identified at least one food or drink product with the area. (Sims 2009, p. 330).

The variety of contexts within which authenticity has come to play a role in food discourse suggests that more than one of the four perspectives presented above may come in handy to analyze a specific case. As taste and culinary cultures evolve, more work remains to be done in ascertaining the nuances of each perspective.

Summary

Some terminological remarks on the use of the expressions “dish” and “recipe” are offered first. Follows an examination of how the concept of authenticity has been employed in philosophy both to describe a personal quest (in connection especially with existentialist philosophies) and to characterize a work of art. Next, four perspectives on the authenticity of a dish are presented: realist, constructivist, existentialist, and naïve. The conclusive section, which points out three domains where the concept of authentic food is of particular significance, suggests that depending on the case study at hand, different perspectives turn out to be most suitable.

Cross-References

- [Cooking Tools and Techniques: Ethical Issues](#)
- [Geographical Indications, Food, and Culture](#)
- [Recipes](#)

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B

Beef Production: Ethical Issues

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Synonyms

Animal welfare in the beef industry; Food safety;
Human and animal health; Husbandry and indus-
try; Sustainability of the beef industry

Introduction

The ethics of food animal production did not represent a significant area of societal concern until 25 years ago, with the rise of public attention to both environmental consequences of raising food animals and effects of production systems on animal welfare. Beginning with Jeremy Rifkin's *Beyond Beef: The Rise and Fall of the Cattle Culture* (Rifkin 1993) and continuing with other books such as Michael Pollan's *The Omnivore's Dilemma* (Pollan 2006) and the UN report of 2006 *Livestock's Long Shadow* (UN 2006) and films such as *Food, Inc.* (2008) and periodic reports linking meat to the epidemiology of various diseases, ranging from cancer to cardiovascular diseases and bird flu, public scrutiny

of meat industries has increased exponentially and led to campaigns in favor of limiting meat consumption, such as *Meatless Mondays*. In particular, beef has been hit hard, as fear of red meat has proliferated. Consider, for example, the pork industry's position absurdly calling pork "the other white meat."

Probably the most accurate document on the ethical issues occasioned by meat production is the report of a 3-year study by the Pew Commission on Industrial Farm Animal Production, published in 2008 as *Putting Meat On the Table: Industrial Farm Animal Production In America* (Pew 2008; available online at PCIFAP.org). The commission consisted of 14 experts on various aspects of animal production, who spent more than 2 years studying all of the major meat production systems dominating the US landscape. The commission focused on a variety of ethical issues arising out of such systems, including environmental despoilation, animal welfare, human health, rural communities, worker health and welfare, animal health, animal welfare, and food safety. All commission recommendations published required unanimous agreement from all commissioners. The report was the first systematic account of the problems raised by confinement agriculture since its inception and was well received and well reviewed. One industry expert revealingly called it "a blueprint for the future of animal agriculture in America."

Historical Considerations

Current thought places the domestication of cattle at somewhere between 7,000 and 9,000 years ago. So important was this event to human history that veterinarian–historian Calvin Schwabe calls the cow “the mother of the human race” (Schwabe 1978). Cattle were utilized historically for food, leather, transportation, haulage, plowing, and their dung used for fuel.

In the United States, the production of beef has changed comparatively little in comparison to the production of other animals, with only sheep production undergoing similar minor modification. Cattle production today can be divided into extensive ranching, or cow-calf production, and more intensive cattle feeding, based on utilizing grain to produce fat cattle. Ranching is without a doubt the most unchanged among animal production systems in many hundreds of years. Typically, cattle are grazed in large open areas of pasture or native indigenous grasses. A minority of producers will grow the animals to market weight on such forage. Beef from such animals is designated as “grass-fed” meat and is more commonly produced in South America, where there are vast areas of grassy forage. After World War II, when the improvements in crop production known as “the Green Revolution” produced huge increases in available grain, the practice of feeding grain to cattle in order to increase profitability began, since the grain is worth considerably more when it creates meat in animals than when it is marketed strictly as grain. Eventually, the US public developed a preference for “grain-fed” beef until gradually the meat from such cattle dominated the market, and “grass-fed beef,” which is generally not as tender as beef from cattle fed grain, became a specialty item rather than a staple of consumer diets.

Environmental Issues

From an environmental perspective, grass-fed beef fattened on indigenous forage is a good deal more sustainable than grain-fed beef.

After all, there are significant energy costs involved in transporting grain to the animals, keeping the animals highly concentrated in feed yards, disposing of the manure, which creates odor and groundwater contamination. In addition, a great deal of energy is expended shipping cattle to feedlots and from feedlots to processing plants and markets. It is clear that fattening and marketing beef locally has a far smaller environmental impact than moving animals and meat across the country.

Estimates of the amount of water required for producing 1 lb of beef range from a low of 441 gal to a high of 2,500. These estimates clearly vary with the political bias of the source. The higher figure comes from a vegetarian website (Vegsource 2001), the lower from an industry website (Explore Beef 2012). There is, however, no question that the production of beef does utilize a good deal of water. Similarly, there are predictably huge variations in estimates of greenhouse gas production created by the cattle industry. (It is important to stress that claims regarding anthropogenic causes of global climate change are greatly disputed in the scientific community.) The largest environmental impact from beef occurs in South America, where “slash-and-burn” techniques for clearing the rainforest to produce grazing land for cattle result in impoverishing the rainforest environment and potential desertification. It is therefore clear that the production of beef does have some impact on the environment. The issue is how significant is that impact, and can it be mitigated. It is also argued that the production of beef by grazing preserves a significant amount of land, with 85 % of that land in the United States unsuitable for any use other than grazing. Since Western ranch lands are among the most beautiful landscapes in the United States, it has been suggested that ranching helps preserve land that would otherwise fall prey to development. Coalitions between environmentalists and ranchers developed in the 1990s have pressed “cows not condos” as a rather surprising common interest. Ranchers sometimes feed deer and elk over difficult winters.

Human and Animal Health Issues

Shortly after the discovery of antibiotics in the 1940s, it was noted that regular feeding of such drugs was conducive to growth promotion in farm animals. Although the precise mechanism by which this occurs remains unknown, various explanations have been suggested, including the claim that these drugs reduce subclinical infections which cause animals to utilize energy to fight disease-causing organisms rather than utilizing that energy to promote growth. In 1985, a Swedish referendum banned the use of antibiotics for growth promotion. After a frantic search for alternatives, it was suggested that significantly increasing cleanliness and hygiene in animal facilities could reduce pathogen load and thus eliminate the traditional use of antibiotics. Such an effort was introduced, and subsequently the cost of animal products fell, showing that in modern animal factories in which animals are severely crowded and antibiotics are deployed as a way of covering up the effects of pathogenic, unhygienic conditions, a remedy is increased sanitation. In other words, antibiotics were utilized as “technological sanders” so that “square pegs” could be forced into “round holes.” In general, in such cases, it makes more sense to improve the animals’ living conditions, rather than attempting to cover up the effects of less than optimal husbandry (Rollin 2001).

Very early in the history of antibiotic use for growth promotion, it was suggested on the basis of simple Darwinian evolutionary principles that such use would inevitably drive bacterial resistance to antibiotics. The mechanism creating such resistance is conceptually simple. As greater amounts of antibiotics are fed to farm animals, resistant pathogens are killed off, creating new opportunities for nonresistant pathogens to colonize the ecological niche in question, thereby in effect breeding for drug-resistant pathogens. That this in fact occurred has been demonstrated empirically.

Whereas much of Europe has followed the Swedish lead and banned nontherapeutic use of antibiotics, the United States has been

considerably less proactive. Although regulatory agencies such as the Centers for Disease Control have strongly agitated for such policy, agricultural lobbyists have blocked massive policy change. Though the largest amount of antibiotics is utilized in the beef industry, these drugs are not typically cutting-edge antibiotics that represent the final line of defense against certain bacteria. The chicken industry, on the other hand, keeps animals under such pathogenic conditions that antibiotic residues from cutting-edge drugs utilized against dangerous human pathogens, such as fluoroquinolones, have been found in ground-water near poultry facilities, as well as in chicken meat purchased in groceries.

It is clear that use of antibiotics in beef cattle increases production efficiency. It has been claimed, for example, by the Animal Health Institute, a meat industry lobby group, that to reach current beef production levels without antibiotics would require 23 million additional cattle. Despite growing political pressure to ban antibiotic use for growth promotion in cattle and other farm animals, the US Congress has failed to act, and thus the United States is well behind Europe on such limitation of antibiotic use. This author served on a World Health Organization panel setting guidelines for prudent use of antimicrobials in 2000. At this conference, there was significant public pressure to ban *any* antibiotic use in farm animals to protect humans. This proposal was defeated on ethical grounds, as it was argued that we have a moral obligation to treat patently sick animals being raised under our aegis.

The issue of antibiotic resistance appears almost exclusively in cattle fattened in feedlots, not in animals that are ranch-raised under extensive conditions, and generally not fed antibiotics. There are other health issues, human and animal, that emerge in the course of the production of beef. Animals are significantly more crowded in large feedlots, which may contain up to one million animals in a relatively small space, than they are under range conditions. Furthermore, the animals in feedlots and processing plants come from many different locations and thus would harbor more diverse pathogens than would animals on

pasture. The bulk of dangerous microbes are found in fecal material and are more easily spread in confinement, though pathogens from range cattle feces may cause problems by leaching into groundwater. Antibiotics such as chloramphenicol, which have been shown to leave residue in meat, may cause human health hazards beyond accelerating antibiotic resistance. Chloramphenicol, for example, when consumed in meat, can lead to aplastic anemia and was thus banned for use in cattle (Rollin 2001).

In recent years, transfer of dangerous pathogens onto carcasses has been illustrated by the case of *E. coli* O157: H7, an enteric bacterium found in cattle and capable of causing severe, even fatal intestinal disease in humans, particularly in children. An outbreak of such cases led the beef industry to increase cleanliness and avoid carcass contamination in packing houses by decontaminating them during processing, a prophylactic procedure that seems to have reduced the threat to public health. In general, the beef industry seems to be the most proactive of all meat production industries as regards risks to human health, though it would probably be wise to “cowboy up” and eliminate antibiotic use for anything other than treating patently sick animals.

Additional risks associated with the consumption of beef are “mad cow disease,” or bovine spongiform encephalopathy (BSE), a fatal neurological disease caused by *prions*, and long-standing accusations leveled against beef regarding cardiovascular disease arising in some people from unsaturated fat and cholesterol. Risk of BSE in the United States is virtually nil. Responsibility for cardiovascular problems seems to fall upon the individual consumer and his or her choice of the amount and sort of beef consumed, rather than on the industry.

Animal Welfare: The Transformation of Animal Agriculture from Husbandry to Industry

The traditional account of the growth of human civilization out of a hunter-gatherer society invariably invokes the rise of agriculture,

i.e., the domestication of animals and the cultivation of crops (Rollin 1995, 2004). This of course allowed for as predictable a food supply as humans could create in the vagaries of the natural world – floods, droughts, hurricanes, typhoons, extremes of heat and cold, fires, etc. Indeed, the use of animals enabled the development of successful crop agriculture, with the animals providing labor and locomotion, as well as food and fiber. The “ancient contract” with animals, was a highly symbiotic relationship that endured essentially unchanged for thousands of years. Humans selected among animals congenial to human management and further shaped them in terms of temperament and production traits by breeding and artificial selection. The animals provided food and fiber – meat, milk, wool, leather – power to haul and plow, and transportation and served as weaponry – horses and elephants. As people grew more effective at breeding and managing the animals, productivity was increased.

As humans benefited, so simultaneously did the animals. They were provided with the necessities of life in a predictable way. And thus was born the concept of husbandry, the remarkable practice and articulation of the symbiotic contract. The essence of husbandry was care. Humans put animals into the most ideal environment possible for the animals to survive and thrive, the environment for which they had evolved and been selected. In addition, humans provided them with sustenance, water, shelter, protection from predation, such medical attention as was available, help in birthing, food during famine, water during drought, safe surroundings, and comfortable appointments.

Eventually, what was born of necessity and common sense became articulated in terms of a moral obligation inextricably bound up with self-interest. In the Noah story, we learn that even as God preserves humans, humans preserve animals. The ethic of husbandry is in fact taught throughout the Bible; the animals must rest on the Sabbath even as we do; one is not to seethe a calf in its mother’s milk (so we do not grow insensitive to animals’ needs and natures); we can violate the Sabbath to save an animal. Proverbs tells us that “the wise man cares for his animals.”

The true power of the husbandry ethic is best expressed in the 23rd Psalm. There, in searching for an apt metaphor for God's ideal relationship to humans, the Psalmist invokes the good shepherd:

The Lord is My shepherd; I shall not want.
He maketh me to lie down in green pastures,
He leadeth me beside the still waters,
He restoreth my soul.

We want no more from God than what the good shepherd provides to his animals.

Though this ancient contract with domestic animals was inherently sustainable, it was not in fact sustained with the coming of industrialization. Husbandry was born of necessity, and as soon as necessity vanished, the contract was broken. The industrial revolution portended the end of husbandry, for humans no longer needed to respect their animals to assure productivity.

Animal husbandry may be characterized as putting square pegs in square holes, round pegs in round holes, and creating as little friction as possible in doing so. Failure at husbandry meant that one's animals did not produce; failure to respect animal needs and natures hurt oneself as well as the animals. This was suddenly overridden by technological tools, as it were "technological sanders," that allowed people to force square pegs into round holes and round pegs into square holes, and where, at least in the short run, productivity flourished at the expense of respect for animal needs and natures. These tools replacing the need for husbandry included antibiotics, vaccines, bacterins, air handling systems, and manure handling systems and resulted in systems that do not respect the animals' physical and psychological needs and natures (Rollin 1995, 2004).

The singular beauty of husbandry is that it was at once an ethical and prudential doctrine. It was prudential in that failure to observe husbandry inexorably led to ruination of the person keeping animals. Not feeding, not watering, not protecting from predators, not respecting the animals' physical, biological, psychological, and physiological needs and natures – what Aristotle called their *telos*: the "cowness of the cow," the "sheepness of the sheep" – meant your animals

did not survive and thrive, and thus neither did you. Failure to know and respect the animal's needs and natures had the same effect. The ultimate sanction of failing at husbandry – erosion of self-interest – obviated the need for any detailed ethical exposition of moral rules for husbandry: Anyone unmoved by self-interest is unlikely to be moved by moral or legal injunctions! And thus one finds little written about animal ethics and little codification of that ethic in law before the twentieth century, with the bulk of what is articulated aimed at identifying overt, deliberate, sadistic cruelty, hurting an animal for no purpose or for perverse pleasure, or not providing food or water.

Animal Welfare in Modern Industrial Agriculture: The Beef Industry as Preserving Animal Husbandry

Even the superficial examination of modern agricultural systems reveals the almost total loss of animal husbandry and its replacement by industrial approaches, and "technological fixes." Whereas, historically, the dairy industry represented the paradigm of good husbandry, with quantitatively and qualitatively high milk production, it was solidly dependent on good animal husbandry. Cows lived on pasture, to which they were well adapted. Herds of milk cows were small, and dairy farmers knew each cow as an individual, and often by name. Though lameness was not unknown, it did not pose the huge problem it does today, due to the fact that the animals often live in herds of 10,000 or more and largely are maintained on concrete, footing totally unsuited to cow hooves. Whereas yesterday's dairy cow could remain productive for 20 years, today's cow lasts barely 2.5 lactations. While milk production has skyrocketed, cow welfare is greatly compromised. Mastitis is rife, as are foot and leg problems.

A similar dark picture can be painted regarding animal welfare in virtually all confinement animal production systems. Modern veal production systems grew out of the dairy industry and were probably the first industry to shock the

public when the media showed calves raised in isolation in dark small wooden crates and kept marginally anemic to assure pale, soft flesh. These miserable animals could not even walk to the trucks by which they were transported to slaughter. Laying hens are kept in small cages, as many as 9 per cage, and never see the light of day and debeaked to avoid cannibalism. Broiler chickens are raised in dark barns, where the air quality is appalling in terms of ammonia levels. (When the Pew Commission toured an “exemplary” barn chosen by the industry, a number of commissioners developed asthma symptoms after a few minutes.) Confinement swine operations are equally horrendous. Mother pigs are kept confined in 2' by 7' by 3' “gestation crates,” in which these animals cannot stand up or turn around or, in the case of large sows, must lie in an arched posture. The animals again never see the light of day, lie on concrete slats in their own excrement, and develop severe behavioral anomalies.

These systems typically inflict four kinds of suffering on the animals raised within them:

1. Production diseases arise from the new ways the animals are produced. For example, liver abscesses in cattle are a function of certain animals' responses to the high-concentrate, low-roughage diet that characterizes feedlot production. Although a certain percentage of the animals get sick and die, the overall economic efficiency of feedlots is maximized by the provision of such a diet. The ideas of a method of production creating diseases that were “acceptable” would be anathema to a husbandry agriculturalist.
2. The huge scale of industrialized agricultural operations and the small profit margin per animal militate against the sort of individual attention that typified much of traditional agriculture.
3. Another new source of suffering in industrialized agriculture results from physical and psychological deprivation for animals in confinement: lack of space, lack of companionship for social animals, inability to move freely, boredom, austerity of environments, and so on. Since the animals evolved for

adaptation to extensive environments but are now placed in truncated environments, such deprivation is inevitable.

4. In confinement systems, workers may not be “animal smart”; the “intelligence,” such as it is, is in the mechanized system. Instead of husbandmen, workers in swine factories are minimum wage, often animal-ignorant labor. So there is often no empathy with, or concern for, the animals.

Though the beef industry also employs confinement in feedlots, these systems are nowhere near as severe as the other industries. Generally, feedlot cattle are kept in large pens, where they can express much of their natural behavior. Welfare problems arise from historically poor drainage so that the animals may be standing in mud or frozen mud, since feedlots are typically sited in the Great Plains and Midwest. These areas are typically characterized by harsh winters, icy and severe winds, extremely hot summers, and lack of shelter and shade. The cattle, being ruminants, are built for grazing. But after the spectacular increases in grain production after World War II, forage was replaced by grain. A certain percentage of the animals developed rumenal and liver abscesses, but the extra value added to the majority of cattle that did not more than offset the economic losses.

The quality of labor working in feedlots varies considerably regionally. In Colorado, both workers and managers tend to come from a cattle background and therefore are knowledgeable and often empathetic with the animals. Workers in feedlots in other states have quit in disgust at the callousness and lack of empathy of the employees they deal with. In one case, workers allowed sick animals to freeze in a puddle!

Generally, feedlots have improved over the past couple of decades. Most noteworthy, perhaps, is that the stocking density has been considerably diminished, and drainage has been considerably improved. When members of the Pew Commission toured a very large Colorado feedlot after touring dairies, swine facilities, egg “farms,” and broiler operations, they were pleasantly surprised at the lack of obvious welfare

problems and the condition of the animals. But there is certainly no assurance that all feedlots conform to even a minimum welfare standard (Pew 2008).

Transport from feedlots to packing houses can create welfare issues during extremes of temperature. High stress can result in “shipping fever,” which can be reduced by “preconditioning” cattle. Bruising represents an additional welfare issue.

Western Ranching: Cow-Calf Operations

As mentioned earlier, extensive ranches represent the last and best examples of the husbandry ethic in today’s agricultural world. The vast majority of ranches are small (with some notable exceptions) and family owned and operated. The primary value driving ranchers is way of life – how they interact with animals, nature, and the environment. Despite the fact that many Americans see ranchers as plutocratic land barons as was depicted in the movie *Giant*, driving Rolls-Royce pickups, this is far from the case. About 10 years ago an animal scientist reported that the average income of a rancher living in the Front Range (Eastern slope of the Rocky Mountains) was \$35,000. And a huge part of ranchers’ ethic is care for the livestock. The vast majority of ranchers would affirm, “if I had to raise animals the way the chicken or pig people do, I would get the hell out of the business.” Unlike these other industrialized, confinement industries, the animals live their lives extensively, as their natures dictate. There are few “technological sanders” deployed in ranching because there is no forcing of square pegs into round holes. Structurally, there is very little in ranching that forces compromising animal welfare. What is there are certain very invasive “management practices” such as castration without anesthesia and hot iron branding that are largely sanctified by custom and tradition.

This latter claim is supported by a thought experiment one can perform with rancher audiences: “if God came down and told you that you may continue to raise cattle, but you may not hurt

them, would you go out of business?” Invariably, they say no. This of course evidences that these practices are dispensable or alterable to avoid pain.

Shortly after the birth of a calf, the same ranchers will brand, dehorn, castrate, and vaccinate these animals with no pain control in a festive, party-like occasion (Rollin 1995). How can this be reconciled with the ethic of animal husbandry, both historically and today? One can focus on branding for an in-depth look at such practices historically, conceptually, and ethically. Branding of cattle by the use of a hot iron to create an indelible mark on the skin by infliction of a third-degree burn can be traced back to the Egypt of 3000 BC. Obviously, such burns are extremely painful and work by destroying melanocytes or pigmentation cells. The purpose of the resulting mark in today’s world is twofold: first, it provides proof of ownership, with each ranch employing a unique, centrally registered mark. Second, it allows for easy recognition of one’s cows under mixed range conditions, where many different animals with numerous different owners may graze together. In addition, ranchers claim that brands help to prevent rustling, i.e., theft of cattle. With periodic change in cattle ownership, an animal may be branded more than once.

Historically, there were no alternatives for permanently identifying cattle, nor were there methods for controlling the pain of the burn. Over the past 30 years, as industrial agriculture has become increasingly less acceptable to society, and a return to husbandry agriculture is sought, some ranchers realize that they would do well to underscore their commitment to animal welfare by eliminating painful management practices and marketing beef as the humane meat product. Ironically, the acceleration of modern technology that created confinement agriculture can also be utilized to replace painful management practices. One alternative to branding is provided by digitized retinal images of cow retinas, images with more data points than human fingerprints. Similarly, cattlemen could employ other biometric identifiers or electronic forms of identification such as microchips. All such methods provide permanent, unalterable forms

of identification. These biometric and electronic forms of identification provide the additional advantage of facilitating trace back in the event of disease outbreak. In addition, branding does not prevent cattle theft. In many places, in remote areas, rustlers will drive to ranches with a truck, cut fences, slaughter cattle, and steal them as boxed beef. Inherently conservative, ranchers have resisted moving to alternative methods of identification. If asked to justify the infliction of a third-degree burn morally, cowboys will cite the trade-off involved in living extensively in exchange for a short-term burn pain.

Whereas, historically, few urban people had ever witnessed a branding party, this has changed dramatically with the advent of the Internet, and most people are horrified by it. On one occasion, a speaker at a large California ranch was approached by the wife of a meat buyer for a boutique supermarket chain. She closed the door and began to cry bitterly. She said she had just witnessed a branding, and that was the most horrific event she had ever seen, even though her husband's livelihood came from beef. "Those poor calves," she sobbed, "burned and terrified. It is horrible." Clearly, she thought of it as little more than a sadistic pain ritual! Though sanctified by tradition, branding does not play well to urban audiences and does not win many friends for ranching, despite rancher commitment to husbandry!

Knife castration of beef cattle is another painful management practice originating in antiquity (Rollin 1995). Typically, neither anesthesia nor analgesia is utilized to control the attendant pain. Castration is done to reduce aggressiveness in male animals, thereby minimizing aggressive interactions and danger to humans, as well as to prevent unplanned impregnation of female animals and to improve the quality of the meat. Sometimes castration is accomplished by placing elastic or rubber bands around the testicles, creating ischemia so that the testicles eventually die and shrivel. As a prolonged insult, banding appears to be more painful than knife castration, although bloodless. Ways of mitigating knife castration include raising and marketing young bulls, which has been done successfully, use of

local anesthetics and subsequent analgesics to mitigate pain, chemical castration, and immunological castration, which involves using the immune system to interfere with the spermatogenic cascade (Rollin 1995). Castration is particularly irrational economically, as the anabolic growth promotion of the testicles is often replaced by hormonal implants, which do not work as well as endogenous testosterone and which tend to be viewed with suspicion by consumers.

The difficulty of performing knife castration increases with the age of the animal. In Britain, it is permissible to castrate calves until 8 weeks of age without anesthesia. It is sometimes argued that newborn or young animals do not feel pain. This is extraordinarily implausible, given that calves are born precocious, i.e., "hit the ground running" in all biological systems. It defies belief that only the ability to feel pain conveniently does not exist until the animal is 2 months old. What is true is that as the animal gets older, greater vascularization is present, making control of bleeding more of a challenge than in younger animals.

Dehorning is utilized to prevent injury by horned cattle to each other and to humans. When done to adult animals by cutting or gouging out the horns, the procedure is extremely painful and creates a bloody mess. When done on young calves, the so-called "disbudding" of the horn buttons can be accomplished less traumatically but still painfully by the use of caustic paste, electric irons, or cutting. Anesthetics and analgesics are virtually never used. A simple alternative to dehorning is to genetically introduce the poll or hornlessness gene into one's herd (Rollin 1995).

There exist other mutilations that were historically more important than they are now. One was notching wattles of cattle for an additional form of identification. (Wattles are the loose skin hanging from the neck of cattle.) Unique patterns of notching were cut (again with no anesthesia) to represent various ranches to which cattle belonged. In a similar vein, but less invasive, were notches cut into the animals' ears. (A similar form of identification is still used today with laboratory mice.)

A final mutilation brings chills to the average male when they learn of it. In cattle ranching, it is necessary to know when female animals are in heat. There are a variety of methods for heat detection, but one common method was to create surgically “gomer bulls.” Gomer bulls are normal males whose penis has been deflected and then surgically attached to the animal’s inner thigh. These animals, possessing the normal mating urge, will mount females who are in heat, but are unable to achieve penetration because of the unnatural position of the penis (Rollin 1995).

Summary

It should be evident from the discussion that the beef industry faces the smallest number of ethical issues of any modern animal production system, with small ranching the most pristine and most easily improved. Particularly in terms of sustainability, environmental despoliation, and animal welfare, the beef industry is the cleanest (Fraser and Broom 1990). For this reason, it is ironic that beef is often the whipping boy for well-intended but ignorant public criticism of the meat industry.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Sustainability and Animal Agriculture](#)
- [Telos and Farm Animal Welfare](#)

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Biodiversity

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Synonyms

Biological diversity

Introduction

Current rates of species loss exceed those of the historical past by several orders of magnitude and show no indication of slowing. Major drivers of biodiversity loss on a global scale are land-use changes and agricultural intensification. These processes are threatening ecosystem functioning and services on which humans depend. Biodiversity contributes directly through provisioning, regulating, and cultural ecosystem services and indirectly through supporting ecosystem services to many constituents of human well-being. In consequence, there is deep concern that a loss of biodiversity and deteriorating ecosystem services contribute to worsening human health; higher

food insecurity; increasing vulnerability of ecosystems to natural disasters; lower material wealth; worsening social relations by damage to ecosystems highly valued for their aesthetic, recreational, or spiritual values; and less freedom for individuals to control what happens and to achieve what they value (see detailed explanations in MEA 2005). Growing awareness of the importance of biodiversity for human well-being has led governments and civil society to a clear set of conservation targets aiming to significantly reduce biodiversity loss in the near future (see Convention on Biological Diversity; www.cbd.int). One of these targets (target 7 of the recent Strategic Plan for Biodiversity 2011–2020) demands that by 2020 areas under agriculture, aquaculture, and forestry are managed sustainably, ensuring conservation of biodiversity.

This entry addresses the importance of agricultural biodiversity on the one hand and the role of agriculture in the rapid decline of global biodiversity on the other hand. It also presents ways how agricultural production can provide essential goods for a growing world population but at the same time sustain biodiversity and the stability and functioning of ecosystems.

Agricultural Biodiversity

Agricultural biodiversity is an important subset of biodiversity. According to the Convention on Biological Diversity (COP 5 Decision V/5), agricultural biodiversity includes all components of biological diversity of relevance to food and agriculture and all components of biological diversity that constitute agricultural ecosystems: the variety and variability of animals, plants, and microorganisms, at the genetic, species, and ecosystem levels, which are necessary to sustain key functions of the agroecosystem, its structure, and processes. Agricultural biodiversity comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fiber, fuel, and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil microorganisms, predators, pollinators) and those in the wider environment that support

agroecosystems (agricultural, pastoral, forest, and aquatic) as well as the diversity of the agroecosystems.

Agricultural biodiversity is a fundamental feature of farming systems around the world. Since the beginning of agriculture some 10,000 years ago, farmers made use of a variety of plants and livestock and have employed numerous practices to enhance diversity in and around their agricultural land. Agricultural biodiversity is an important source of traits to improve crops and livestock, for example, conferring resistance to diseases, pests, and parasites or the ability to withstand high temperatures, droughts, or frost. It contributes to the quality of nutrition and might help to buffer against environmental alterations such as climate change but also against economic adversities. Agricultural biodiversity is also a key asset to improve the livelihoods and productivity of small-scale farmers in developing countries. Smallholders farm on less than two hectares and account for 90 % of farmers worldwide. They strongly depend on a rich diversity of native plant varieties and locally adapted animal breeds for their livelihoods and survival and are increasingly recognized as important stakeholders to guard biodiversity.

In Europe, traditional low-intensity farming practices increased biodiversity for millennia. By altering comparatively low-diversity forests into farmland, new habitats were created and enriched by plant and animal species migrating from neighboring biogeographical areas such as the Asian steppes. For a long time, European agricultural landscapes were thus characterized by a rich diversity of land uses, sizes and shapes of fields, as well as seminatural elements such as hedgerows. Such heterogeneous landscapes support high species richness, both above- and belowground, but are severely threatened today by either agricultural intensification or land abandonment.

Green Revolution and the Loss of Biodiversity

The conversion of land from complex natural ecosystems to simplified agricultural ones and

the intensification of agriculture have been and still are major causes of the decline of global biodiversity. Since the advent of the green revolution in the early 1960s, global arable land has increased by 67 million hectares as the result of two opposing trends: an increase of 107 million hectares in developing countries, mainly due to habitat conversion in areas of high biodiversity in the tropics, and a decrease of 40 million hectares in developed countries, mainly due to yield improvements.

Intensification of agricultural systems coupled with specialization by plant breeders and the harmonizing effects of globalization have led to a substantial reduction in the genetic diversity of domesticated plants and animals in agricultural systems. For example, a third of the 6,500 breeds of domesticated animals are currently threatened with extinction due to their very small population sizes (MEA 2005). Moreover, of the several thousand plant species which have been used for human food in history, at present only about 150 are commercially important, and about 103 species account for 90 % of the world's food crops. Just three crops, i.e., maize, rice, and wheat, supply almost 60 % of the calories and proteins derived from plants (FAO 2012). According to the FAO, about 75 % of the genetic diversity of agricultural crops has been lost over the last century, and this genetic erosion continues. It is feared that genetic homogenization decreases the potential of species to cope with short-term challenges such as pathogens and herbivores or to persist in the face of environmental changes such as droughts.

Intensive agriculture relies on external inputs such as chemical fertilizers, pesticides, herbicides, and water for crop production and artificial feeds, supplements, and antibiotics for livestock and aquaculture. These practices are hardly sustainable. They damage the environment, undermine the nutritional and health value of foods, lead to reduced function of essential ecosystem services, and result in a severe loss of biodiversity (FAO 2010). Synthetic production of nitrogen fertilizer has been identified as *the* key driver for the increase in food production over the past 60 years. More than half of all the synthetic

nitrogen fertilizers ever used on Earth have been used since 1985, and humans now produce more reactive, i.e., biologically available, nitrogen than is produced by all natural pathways combined. Several studies have shown that aerial deposition of nitrogen into natural terrestrial ecosystems such as heathlands or grasslands leads to a significant reduction in plant species richness (e.g., Kleijn et al. 2009; Maskell et al. 2010).

In many European countries, a serious decline of farmland birds has been observed due to agricultural practices. Of the 58 species classified as being primarily birds of farmland, 41 showed negative overall mean trends across Europe. Cereal yield alone explained 30 % of the variation in bird population trends and can thus be used as an indicator for reduced suitability of habitats and availability of food for farmland birds (Donald et al. 2006).

Challenges for Agriculture and Ways to Counter the Loss of Biodiversity

A major challenge for agriculture in the twenty-first century is the provision of basic goods for a growing world population that will reach approximately nine billion by 2050. It has been predicted that the demand for food and fiber will grow by 70–100 % within the next four decades and that a further 10–20 % of grassland and forestland has to be converted for agricultural uses, leading to a global extinction of species (MEA 2005). This would also mean an almost threefold increase in nitrogen- and phosphorus-driven eutrophication of ecosystems, with phosphorus stocks running out by the end of this century and an increasing demand for water (agriculture already accounts for 70 % of global use). In consequence, an increasing competition for land, water, and energy is expected that, together with predicted climate changes, will affect agriculture in the future.

To counter the loss of biodiversity, agricultural production practices need to change. There are multiple, not mutually exclusive, ways agricultural production can provide sufficient, safe, and nutritious food but at the same time

sustaining biodiversity and the stability and functioning of ecosystems. Organic farming is one way to improve on-farm sustainability and is already used by many farmers around the world. Other approaches, for instance, deal with sustainable intensification, multifunctionality, multispecies use, the use of genetically modified (transgenic) crops, and the support of smallholder farming. All of these approaches greatly depend on geographical conditions, national and international policies, consumer behavior, and other factors, and it would be pointless to come forward with one global strategy towards agricultural sustainability. Instead, multiple strategies are needed that take into account the specific conditions of a country or region.

Organic Farming

Organic farming worldwide rose by almost 30 % in the last decade. In 2009, about 38 million hectares of land were organically farmed (FAO 2012). Organic farming is a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. General principles and requirements for organic farming are defined in the Codex Alimentarius guidelines adopted in 1999. According to these guidelines, an organic production system is designed to enhance biological diversity within the whole system, increase soil biological activity and maintain long-term soil fertility (by minimum tillage or zero tillage operations), recycle wastes of plant and animal origin in order to return nutrients to the land, thus minimizing the use of nonrenewable resources and avoid pesticide and herbicide use.

Research indicates that organic compared to conventional farming significantly increases soil biological activity, biomass, and abundance of earthworms and arthropods, plant species diversity, and microbial diversity (Mäder et al. 2002). Organically manured, legume-based crop rotations utilizing organic fertilizers from the farm

itself are efficient in resource utilization, enhance floral and faunal diversity, and are thus a realistic alternative to conventional farming systems. The deficits of organic agriculture, mainly related to lower yields, should not be exaggerated. Lower yields (about 20 %) in organic than conventional farming occur mostly in cash-crop-focused production systems and under most favorable climate and soil conditions.

Sustainable Intensification

The environmental impacts of doubling global crop production until 2050, as predicted, will depend on how increased production is achieved. Agricultural production could be increased by either extensification or intensification. While extensification would imply the clearing of additional land for crop production, intensification would mean to achieve higher yields through increased inputs, improved agronomic practices, improved crop varieties, and other innovations. It has been predicted that, if yield growth did not materialize, an estimated one billion additional hectares of land would be needed to meet current demands. At present, agricultural land expansion takes place especially in countries of sub-Saharan Africa that combine growing needs for food and employment with limited access to technology that could increase intensification of cultivation on land already in agricultural use (FAO 2012). Most of these countries still harbor high biological diversity and are thus especially vulnerable to habitat changes.

A trajectory that adapts and transfers technologies to underyielding nations, enhances their soil fertility, employs more efficient nutrient use, and minimizes land clearing could be a more promising path to environmentally sustainable intensification and equitable global food supplies than extensification. Under the assumption that current trends of greater agricultural intensification in richer nations and greater land clearing (extensification) in poorer nations were to continue, it has been calculated that about one billion ha of land would be cleared globally by 2050, with CO₂-C equivalent greenhouse gas emissions reaching 3 Gt and N-use 250 Mt per year by then. In contrast, if 2050 crop demand

was met by moderate intensification focused on existing croplands of underyielding nations, adaptation and transfer of high-yielding technologies to these croplands, and global technological improvements, the analyses forecast land clearing of only about 0.2 billion ha, greenhouse gas emissions of 1 Gt per year, and global N-use of 225 Mt per year (Tilman et al. 2011).

Multifunctionality, Decoupled Farm Program Payments, and Agri-environment Schemes

Modern agricultural policy in Europe addresses the loss of biodiversity in cultured landscapes with an increasing share of direct payments for nonconsumptive services of agriculture, so-called public goods. The decoupling of partly area-related direct payments from production payments to reward multifunctional services represents a substantial reform of the European Union's Common Agricultural Policy. Direct payments should secure the conservation of biodiversity and the sustainable development of traditional cultural landscapes through, for instance, agri-environmental schemes. In the United States, so-called green payments are envisaged that will reward farmers and ranchers for sound land management and resource conservation. Environmental benefits could include sequestering carbon, controlling floodwaters, providing wildlife habitats, recharging groundwater, increasing biodiversity, and providing open space and cleaner air and water.

In Europe, agri-environment schemes are important political instruments to counteract the loss of biodiversity in agricultural land and to foster ecosystem services such as pollination and natural pest control. However, such schemes vary markedly between European countries. In Switzerland, the Netherlands, and the United Kingdom, for instance, they focus mainly on wildlife and habitat conservation, whereas in Denmark and Germany they focus on the reduction of agrochemical emissions and in France on the prevention of land abandonment in agriculturally marginal areas (overview in Kleijn and Sutherland 2003). In Switzerland, farmers can qualify for area-related direct payments if they meet a number of environmental standards.

One of these standards, regulated by the Swiss Federal Legislation, demands that farmers have to manage at least 7 % of their utilized agricultural land as so-called ecological compensation areas. Farmers are free to choose the types of ecological compensation areas for their land which encompasses traditional landscape elements (most often extensively managed hay meadows) and elements newly designed for the purpose of biodiversity conservation (e.g., wild-flower strips sown with seed mixtures of herbaceous plant species). In alpine regions, farmers are encouraged with the help of subsidies to maintain or reestablish species-rich nutrient-poor grasslands which are currently strongly threatened either by intensification or abandonment.

Agri-environment schemes have been evaluated in several studies, most of them showing positive results for plants, birds, various groups of insects, and vascular plants. In the United Kingdom, agri-environment management has reversed declines in the populations of several bird species of high conservation concern such as the Corncrake *Crex crex* (Wilson et al. 2009). In Switzerland, ecological compensation areas resulted in an enhancement of both pollinator species richness and abundance and pollination services to nearby intensely managed farmland (Albrecht et al. 2007). It has frequently been suggested that there might be a disjuncture between the visual aesthetic quality of landscapes and their ecological value, leading to conflicts in the setting of conservation priorities and management aims. However, the results of recent studies suggest otherwise. Both species richness and structural diversity in grasslands were found to be an important predictor for a positive aesthetic valuation of agricultural landscapes (Lindemann-Matthies et al. 2010).

Plant Diversification in Agricultural Systems

Experiments in which biodiversity was manipulated have shown that diversity influences many ecosystem functions. At eight European field sites, the impact of loss of plant diversity on primary productivity was simulated by synthesizing grassland communities with different numbers of plant species. There was an overall

log-linear reduction of average aboveground biomass with loss of species (Hector et al. 1999). Recent results from a long-term experiment in the United States suggest that the use of diverse mixtures of species may be as effective in increasing productivity of some biomass crops as ecologically relevant changes (Tilman et al. 2012). In the experiments, a change in plant diversity from one to 16 species caused a greater biomass increase than the application of 95 kg nitrogen per ha and year or other treatments such as CO₂ enrichment, water addition, and the exclusion of herbivores. A recent meta-analysis also depicts strong evidence of a positive impact of plant diversification on agricultural systems. Herbivore suppression, enemy enhancement, and crop damage suppression effects were significantly stronger on diversified crops than on crops with none or fewer associated plant species (Letourneau et al. 2011).

The Use of Genetically Modified Crops

During the past 20 years, genetically modified crops have become increasingly important in agriculture. The innovation of GM crops was sold as a promising avenue to increase agricultural productivity and thus food supply safety for a growing world population and, at the same time, to minimize the impact of agriculture on farmland organisms and ecosystems by reducing fertilizer and pesticide use. From 1996 (first commercial cultivations) to 2011, the area globally cultivated with GM crops has increased from 1.7 to 160 million ha, especially in developing and newly industrializing countries. Today, GM crops (mainly soybean, maize, and cotton) are cultivated by 16.7 million farmers in 29 countries, with the United States, Brazil, and Argentina as major cultivators (James 2011). Less than 1 % of total commercial releases have been executed in Europe, where use and production of GM crops are met with a growing skepticism among consumers. Moreover, EU policies regard GM crops and food as results of a specific production process and are thus much more restrictive than, for instance, US policies which roughly apply the same regulatory framework to GM as to non-GM crops and food.

The two dominant traits of GM crops are herbicide tolerance and insect resistance which are often combined. Proponents of transgenic crops, mainly representatives of research communities and transnational corporations, argue that herbicide-tolerant crops will enhance farmland biodiversity as herbicides can be sprayed and weeds do not have to be removed by massive tillage operations prior to crop seeding. In consequence, tillage operations are reduced, soil organic matter increased, and erosion and water loss decreased. Likewise, insect-resistant crops are thought to reduce pesticide use and thus contribute to biodiversity conservation.

Ecological arguments against GM crops include concerns that transgenes might escape into wild populations, that the use of herbicide-resistant GM crops might lead to an increase in spraying herbicides, and that toxins produced by GM crops might enter the food web and thus affect nontarget organisms. Cases of intraspecific gene flow have already been reported, for instance, in maize (Piñeyro-Nelson et al. 2009). Moreover, it should be noted that biotechnology cannot design new genes but has to rely on the existing diversity of genetic material to move desirable traits from one organism to another.

Support of Small-Scale Farming in Developing Countries

International organizations such as the FAO, but increasingly also ecologists and other researchers, advise to support small-scale farming and to strengthen its efficiency especially in tropical regions which are hotspots of biodiversity. Small-scale farming allows patches of natural vegetation to remain which provide valuable habitats for pollinators, species that prey on pests or weeds or in other ways contribute to beneficial ecological processes. Moreover, due to the use of multispecies and genetically heterogeneous local landraces, small-scale farming can buffer against environmental adversities and is thus rather resilient to environmental alterations such as climate change.

On the other hand, small-scale farming is highly vulnerable to market developments.

Recently, international investors have been increasingly leasing or buying farmland in Africa, Asia, and Latin America (land grabbing). Main investors are food-importing countries with land and water constraints but rich in capital such as the Gulf States or countries with large populations and food security concerns such as China, South Korea, and India (FAO 2010). They invest in farmland overseas, especially in tropical and subtropical regions, where production costs are lower, land and water more abundant, or climatic conditions more suitable for the production of staple or biofuel crops. As a result, low-intensity smallholder land is converted to intensively managed production units, further diminishing global biodiversity and ecosystem functioning.

Summary

Changes in biodiversity due to human activities were more rapid in the past 50 years than at any time in human history, with agriculture as a major driver of biodiversity loss. Biodiversity loss and especially the loss of genetic diversity in both wild and domesticated organisms are reducing overall fitness and adaptive potential of species and are threatening ecosystem functioning and services on which humans depend. For fear of genetic erosion, biodiversity is now conserved ex situ in gene banks or breeders' materials. The Millennium Seed Bank Project, for instance, wants to insure against the extinction of plants in the wild by storing seeds for future use. In 2009, it reached its 10 % target of banking the entire world's wild plant species.

Both the maintenance of biodiversity and the provision of basic goods for a growing world population are global responsibilities. Organic farming, sustainable intensification, multifunctionality, multispecies uses, and support of smallholders for more efficient, profitable, and sustainable production are just some ways to preserve and use biodiversity better in agricultural areas while meeting increasing demands for food, fiber, and other agricultural products. Making

consumers aware about food production that is done in environmentally, socially, and ethically acceptable ways could be another important step towards sustainable agriculture, biodiversity conservation, and global equity.

Cross-References

- [Agricultural Ethics](#)
- [Farms: Small Versus Large](#)
- [Herbicide-Resistant Crops](#)
- [Land Acquisitions for Food and Fuel](#)
- [Multifunctionality of Agriculture and International Trade](#)
- [Pest Control](#)
- [Sustainability of Food Production and Consumption](#)

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Biodiversity and Global Development

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Introduction

There is general agreement that the world's biodiversity is being degraded at a phenomenal rate, perhaps far more rapidly than the popular press has reported. Proponents of conservation suggest that optimism is warranted in that there seems to be universal concern over this surging problem. From the point of view of values and ethics, who can be against the conservation of biodiversity? This *cause célèbre* enjoys universal approbation from all sectors of all societies. Yet balancing the costs and benefits of conservation is a complicated issue, and approbation becomes less universal in specific case studies.

For example, local farmers in the Global South may see large mammalian carnivores as threatening to their children. Developers in the Global North may see attempts at preserving a threatened species of snail or fish as threatening to their aspirations. And the fundamental problem of thinking of biodiversity as nothing more than big charismatic creatures living in pristine environments remains a major stumbling block to devising effective programs to engage this truly worldwide problem. Small things like fungi and insects do not get the same attention as elephants and mountain gorillas. Such large charismatic creatures represent a minor fraction of the world's biodiversity, compared to the small things – mites, nematodes, insects, to say nothing of bacteria, the biodiversity of which remains largely enigmatic.

Global development has been uneven since World War II, with some parts of the world having experienced dramatic growth in economies and human wellbeing while others have seen stagnation. Analysis of this pattern is eclectic,

complicated, and controversial, but there is agreement that the history of colonialism retains its mark, with neocolonial interference from the richer countries frequently creating barriers to development in the former (and sometimes current) colonies. Most of the poorer areas of the world are in the south and in contemporary discourse collectively are referred to as the “Global South,” while most of the richer areas are in the north and are referred to as the “Global North.”

There is an important connection between biodiversity and global development. We see this connection from an examination of the key patterns of both biodiversity and development (IAASTD 2009).

Patterns of Biodiversity

Among the global patterns of biodiversity, there are two that stand out as relevant to questions of development. First, species diversity tends to increase with decreasing latitude, a geographic pattern. Second, species diversity tends to decrease as the intensity of management of the ecosystem increases, an intensification pattern.

Examining biodiversity at different latitudes, there is a dramatic difference between temperate and tropical worlds (and thus between Global North and Global South). Forest surveys in the northern Europe, for example, will generally encounter between 2 and 20 species of trees per hectare, whereas such surveys in central Africa will encounter upwards of 300. The bird guide of Colombia lists 1695 species, while in all of North America (an area much larger), there are 700. Butterflies, ants, mammals, and amphibians all show this same pattern. There are exceptions, but the general pattern is one of increasing numbers of species as you approach the equator. The cause of this pattern has been the subject of an enormous amount of speculation and debate in ecology and remains generally unresolved.

Examining different ecosystem management strategies, it is first necessary to distinguish between two concepts of biodiversity. First is the collection of plants and animals that the manager

has decided are part of the managed system – rice in the paddies of Asia, corn and beans in the traditional fields of Native Americans, carp in the fish ponds of China, and so forth. This is referred to as the “planned” biodiversity. Additionally in each of these ecosystems, there is a great amount of biodiversity that spontaneously arrives – the aquatic insects and frogs in the Asian rice paddies, the birds and bugs that eat the Native American’s corn and beans, and the crayfish that burrow their way into the sides of the Chinese fishponds. This is referred to as the “associated” biodiversity. Frequently the managers themselves are determinedly concerned about the planned biodiversity, especially when dealing below the species level (i.e., genetic varieties of crops). Nevertheless, it is almost certainly the case that the associated biodiversity is the dominant form in almost all managed ecosystems.

The vast majority of managed ecosystems are agricultural. The particular form of agriculture has important impacts on biodiversity through several mechanisms. It has become common to order these mechanisms with the rubric of “intensification.” Although the term “agricultural intensification” has a very specific and complex definition in anthropology, in the biodiversity literature, the term “management intensification” is taken to be the transition from ecosystems with high planned biodiversity to low planned biodiversity. The ecology of the agroecosystems is such that the final stages of intensification usually involved the application of agrochemicals to substitute the function of some of the biodiversity that is eliminated. There are two basic patterns of associated biodiversity change that might be expected as a function of intensification. First, it is sometimes the case that with even a small alteration in natural habitat by some management system, associated biodiversity tends to fall dramatically. Second, it is sometimes the case that associated biodiversity declines by only small amounts with low levels of intensification and only after much higher levels are reached do we see dramatic declines. Which of these two patterns (or what combination of the two) exists in particular systems remains largely unstudied.

Patterns of Global Development

Post WWII development has resulted in uneven distribution of prosperity and potential. Popularly referred to as the G8 (in 2013), the three nations of the British Empire (UK, USA, Canada), three western European nations (France, Germany, Italy), and Japan and Russia, these eight nations account for approximately half of the world economic activity. Other European nations are commonly included as members of the Global North. Most tropical countries are thought to be the major elements of the Global South, typified by low GDP, and thought to be in the developmental position due to historical circumstances, largely a result of the age of European Imperialism. More recently the economic changes in Brazil, South Africa, India, China, and Mexico have propelled them to a seemingly intermediate status, codified (as of 2013) as the Outreach Five.

In addition to the evident distinction economically between the Global North and Global South, there is also a distinction of geographic demography. In nations of the Global North, generally less than 35 % of the population resides in rural areas, frequently far less (e.g., 11 % in the UK, 20 % in the USA), whereas in nations of the Global South, generally more than 50 % lives in rural areas (e.g., 88 % in Uganda, 81 % in Cambodia). There are exceptions, but the general rule is that in the Global South, a large segment of the population lives in rural areas, which implies a large segment of the population involved in agricultural activities. From an ethical standpoint, development goals cannot ignore this segment of the population.

Intersection of Biodiversity and Global Development Patterns

There is thus this curious pattern in which the bulk of the world's remaining biodiversity exists in the same areas of the world where underdevelopment and poverty exist. This leads to important contradictions in global goals. On the one hand, conservation of biodiversity must concentrate on

the Global South, yet, on the other hand, poverty reduction in the Global South must promote rural development activities, many of which involve the intensification of agriculture, generating precisely the background conditions known to reduce biodiversity. There thus appears to be a contradiction between the goals of conservation of biodiversity and reduction of poverty.

Pursuing a resolution of this contradiction, scholars have proposed a variety of avenues, most of which can be broadly categorized into passive versus active. Of the passive approaches, some scholars suggest lessons from history. The European colonization of eastern North America began with massive deforestation to make way for the expansion of agriculture. Subsequently, through industrialization and related urbanization, agriculture declined and forests returned. The dynamics that drove this process are evident at a broad qualitative level – wealth from agriculture drives local industrialization that, in turn, acts as a magnet for labor, which depopulates the countryside, leaving natural succession to take over. This general view seems historically accurate and has been referred to as the “forest transition model” (FT model). Similar processes have been described for some European countries, the rural US south and most importantly, given its tropical location, Puerto Rico. Based on these and other examples, some scholars suggest that the FT model could be a framework for understanding tropical landscape dynamics in general and even be used for promoting a conservation agenda and, indirectly, poverty reduction through industrialization.

Ultimately, the FT model rests on two quantitative assumptions and a seemingly logical conclusion. The two assumptions are, first, a given population density requires a specified land base to enable productive activities adequate for survival of the whole population and, second, the amount of food required to support that population, divided by current per-area productivity, equals the land area necessary for agricultural production. The logical conclusion is that the total land area minus the area necessary for production is what is available for conservation.

The FT model has been criticized on the basis of many case studies in which the conditions for land abandonment seem to have been met, but the expected urbanization failed to follow.

The second set of approaches, the active approaches, include a variety of forms. One form is the land-sparing versus land-sharing debate. Assuming a certain amount of land will be devoted to food production (agriculture) and the rest to conservation, the question is whether the part devoted to food production should be intensified so as to produce more food per area (and thus have less land required to feed a fixed population, with more to “spare” for conservation) or whether the biodiversity contained in the agricultural land should be taken into consideration (“shared” with the biodiversity). Analyses have appeared supporting both points of view, seemingly dependent on the particulars of chosen case studies (Fischer et al. 2011; Perfecto and Vandermeer 2010; Tschntke et al. 2012).

Other analysts see a resolution of this contradiction in the combination of recent understanding of the ecology of biodiversity and the grassroots politics of rural sectors of the Global South. Viewing the overall landscape as fragments of natural vegetation in a matrix of agriculture, basic principles of ecology point to the importance of the agricultural matrix as a corridor that provides a necessary connection between isolated fragments of natural habitat that contains much of the biodiversity. The activities of small-scale agriculturalists accord well with the construction of such “high-quality” matrices (Perfecto et al. 2009).

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Biodynamic Agriculture

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Synonyms

Alternative agriculture; Holistic farming; Spiritual farming

Introduction

This entry briefly explains and explores the history of biodynamic farming, including some of its key philosophies and food production practices. Biodynamic farming views a farm as a holistic entity, a microcosm in physical form of the macrocosm of the physical, ethereal, and astral form of the spiritual universe.

Rudolph Steiner

Biodynamics, or biodynamic farming, refers to a specific practice of agriculture that is based upon the work and teachings of the Austrian Rudolf Steiner (1861–1925). In order to understand biodynamic farming, one must first understand Steiner and his metaphysical belief system. Steiner was a prolific researcher and speaker, using his created method of “spiritual science” to study the inherent wisdom of humanity (anthroposophy). His research was based on his

own spiritual and visionary experiences and intuitive insights, as well as studies he undertook with Theosophists and readings he undertook in religious literature from around the world. His experiences and active teaching schedule resulted in the publication of over 40 books, and he was invited to give over 6,000 lectures. Before dying, Steiner founded The General Anthroposophical Society in Switzerland in 1924. Besides providing the inspiration for biodynamics, Steiner was instrumental in creating or inspiring Waldorf Schools, Camphill villages, anthroposophic medicine, and eurythmy. Steiner was also a leading expert on Johann Wolfgang von Goethe's work, and the impact of Goethe on Steiner's thinking was recognized when Steiner designed the Goetheanum in Dornach, Switzerland, which serves as the headquarters of the global Anthroposophical Society.

Steiner's spiritual science is predicated on the belief that each person is on an evolutionary trajectory, occurring by incarnations over many lifetimes, toward self-realization/God-realization. By practicing and cultivating the spiritual insights taught by Steiner, individuals can advance along this evolutionary path and have visionary, gnosis-filled experiences. Thus, anthroposophy is a scientific approach to spiritual experiences of our innate divine wisdom. Steiner's cosmology borrows heavily from Theosophy, Germanic idealism, and Advaita Vedanta Vedic philosophy contained within the *Upanishads*, which speak of an eternal divine spark within each being that is on a path toward liberation via reunion into the Divine/God. Steiner taught that as a soul progresses through physical incarnations, so does humanity and the world. Steiner's view of the human is that the human contains a four-part body. The first is a physical body, based on the mineral world; the second is a life or etheric body, which causes the body to grow and vitalizes it, making it alive, and this body is associated with the plant world; the third is an astral body, which serves as the seat of consciousness and sentience, and is connected to the animal world; and the fourth body is the ego, or self-awareness. Taken together, Steiner's cosmology is of an interconnected, holistic cosmos,

where etheric and astral forces emanate from the cosmos and influence the development of all life on earth. This includes the evolutionary growth and development of animal life, plant life, and human spiritual and physical life. It is within this larger cosmology that biodynamics functions.

From June 7 to 16, 1924, Steiner gave eight lectures in German to a group of farmers on the "Spiritual foundations for the renewal of agriculture" at Koberwitz, Silesia (Steiner 2005). These farmers had expressed concern about noticed losses in yields and soil health, so Steiner was invited to provide insights into how to create remedies to this scenario. The mechanization and use of chemicals in agriculture was also about to begin, so Steiner's teachings became the basis of an alternative to what became the Green Revolution, and it is upon these lectures that biodynamic farming is based.

Biodynamic Farming Practices

Key insights from Steiner's lectures became the basis for biodynamics, and most every biodynamic farmer builds their own practice of farming upon these teachings. These include the teaching that a farm is a self-contained microcosm that mirrors the macrocosm. Thus, a farm should be managed as a holistic entity while recognizing that astral and etheric forces from the cosmos influence plant, animal, soil, and human health. It is upon this key teaching that unique biodynamic farming practices are built. The most unique of these is the creation and casting of biodynamic preparations, or "preps." In essence, biodynamic preps (BD preps) are a kind of homeopathy for the soil, bringing etheric and astral forces into the soil within which plants grow and upon which animals then graze and consume. The preps are meant to help a farmer create a microcosm of the macrocosm, where, by using the preps, astral and etheric forces are amplified on the farm, resulting in healthier, more spiritually dense and pure products. As these products are consumed, the human becomes more spiritually pure, and their evolutionary process in this lifetime is thus sped up.

Another key insight is the significance of cows, which Steiner saw as being in tune with astral and etheric forces, and especially cows with their horns intact; the horns act as a receiver of astral and etheric forces, and cows fed in grains and grass grown via biodynamic practices are seen as being the embodiment of health, so that their manure becomes the base of biodynamic composting.

Steiner spoke of various biodynamic composts and elucidated specific ways to make them. The composts are a mix of naturally occurring plants, mainly herbs, who possess etheric and astral properties that when potentized by rapid stirring in clockwise motion for 50 s, followed by 10 s counterclockwise, repeated for 60 min, are ready to be applied sparingly to a field. It is believed that by stirring them this way for such a long time, a spiritualized homeopathic tincture is created that activates the plant's etheric forces with the astral forces of the cosmos that are called in the vortex that is created while stirring. While he did not name them, the names BD 500–507 are how they have become to be known. These composts form the basis of biodynamic farming and are as follows:

- BD 500 – this is the basic “starter” compost tincture and works on building microbial activity in the soil, aids in root growth, and helps form soil humus. BD 500 is made by filling old cow horns with fresh cow manure and burying this under the ground for the winter months. Once dug up, the dung has been reduced to a fermented compost, and a pinch of this is added to pure water (ideally rainwater or from a pure spring or stream), potentized, and is spread over the fields in the spring as soil life forms resume activity after the winter (Mäder 2002).
- BD 501 – this is ground quartz silica that is buried in cow horns over the spring and summer months. Quartz silica was seen by Steiner to be a very potent mineral. A pinch of silica is potentized in pure water and spread over growing plants. It is believed that this adds vitality and strength to plants and aids plant photosynthesis, thus allowing plants to hold off pests and blights.

- BD 502 – this is made from dried yarrow potentized in pure water and is added to plants as needed so that plants can attract trace elements and minerals from the soil, thus aiding in their growth and health.
- BD 503 – this is made from dried chamomile potentized in pure water and is added to compost piles and to the soil, as it is believed to increase soil life and health and thus stimulates plant growth.
- BD 504 – this is made from dried stinging nettle potentized in pure water and is believed to enliven the earth and soil, helping each individual plant obtain the nutritional components they need to be healthy.
- BD 505 – this is made from dried valerian potentized in pure water and is added to compost piles so that phosphorous will be properly used by the soil.
- BD 506 – this is made from dried dandelion potentized in pure water and stimulates the relationship between silicon and potassium, allowing them to work together to attract astral forces into the soil.
- BD 507 – this is made from oak bark potentized in pure water and provides healing qualities so that plants can combat harmful diseases.

Typically, 500 and 501 are made and added directly to the soil and plants 502–507 are potentized either in water or by stirring the dried herbs in fresh manure from healthy cows (ideally from cows with horns) for an hour, at which point they are added directly into a compost pile. The compost pile sits for a summer and over a winter, allowing the preps to become active homeopathically throughout the compost, and this compost is added to the fields the following year.

Key Figures and Developments

Steiner inspired his close contemporary, Ehrenfried Pfeiffer, who was instrumental in the development and dissemination of biodynamics. Other key figures in the development of biodynamic farming practices include Maria Thun, who developed a planting calendar based on the

position of certain key celestial bodies (a similar calendar is produced every year by *Stella Natura*); Alex Podolinsky, who is instrumental in bringing biodynamics to Australia, which has thousands of hectares currently devoted to biodynamic wheat and cattle (Podolinsky 1996); Josephine Porter, who formed the Josephine Porter Institute for Applied Bio-Dynamics, from where most North American biodynamic farmers receive the ingredients for BD preps; and Hugh Lovel. These and others have been instrumental in including the use of various rock powders on biodynamic fields (Stalin 2010); and making connections between insights from fractal and chaos thinking and applying these to developing unique biodynamic methods of stirring water.

The Demeter label began in 1927, at which point they became the standard bearer of marketing biodynamic foods, and they have overseen international biodynamic standards since 1992. These standards regulate biodynamics in the production and marketing of grown food, cosmetics, manufactured textiles, and brand labeling. The International Biodynamic Association was founded in 2002, and they currently own and globally protect the trademark of Demeter and Biodynamic. Biodynamic wine is gaining in popularity, and overall acreage of grain crops grown with biodynamic methods has steadily been increasing. Biodynamic farming practices are now found in many of the world's farming regions, and an exciting recent development in biodynamics was the introduction of biodynamics to China, where BD preps and methods are used at the Phoenix Hills Commune outside of Beijing.

Summary

This entry provides a brief foundation about what is biodynamic farming, its key historical figures, and some of its key growing practices. If interested in learning more, the interested reader should consult some of the below literature (Mason 2011; Pfeiffer 2011; Tompkins and Bird 1998), purchase and consume biodynamic products, attend a workshop or training on biodynamics, and/or visit a biodynamic farm.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Community-Supported Agriculture](#)
- ▶ [Farm Management](#)
- ▶ [Food-Body Relationship](#)
- ▶ [Metaphysics of Natural Food](#)
- ▶ [Natural Food](#)
- ▶ [Sustainability and Animal Agriculture](#)
- ▶ [Trade Policies and Organic Food](#)

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Bioethics at Purdue University

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History

Since 2006, the Purdue *Lectures in Ethics, Policy, and Science* (formerly the *Bioethics Seminar Series*) has led Purdue's efforts in and around bioethics, a field broadly conceived as the study of questions of the moral relationships with the

living world. The permeation of bioethical questions throughout philosophy, policy, and the sciences speaks to the vivacity of the concept in everyday lives. These lectures provide a framework for integrating a diverse range of existing institutional strengths in disciplinary ethics, responsible conduct of research training, and philosophical ethics. They give philosophers, policy makers, and scientists the opportunity to discuss current issues and establish a strong rapport, building opportunities for engagement between philosophy, policy, and science at a campus-wide level, and to raise awareness of the ethical implications of biotechnological development both locally and globally.

In light of the contemporary development of federal requirements for ethics education for scientists, like those requirements set forth by the National Institutes of Health (NIH)'s and the National Science Foundation (NSF)'s responsible and ethical conduct in research requirements, the *Lectures* was conceived to focus on the increasing importance of bioethics at Purdue, an institution with recognized strengths in science, technology, and bioengineering but also important foci in philosophy and the liberal arts. The *Lectures* seeks to distinguish itself from existing regional resources in ethics, focusing primarily on environmental, technological, design, and nonhuman moral issues.

In addition to providing a service to the University community, the lecture series is also an excellent opportunity for professional networking, connecting Purdue students and faculty to some of the leading thinkers in this area. Most visitors remain for 1 or 2 full days and attend dinners with interested faculty and graduate students after their talks, enabling closer interaction with the Purdue community. When possible, the graduate student facilitators work to schedule meetings the day of the talk with interested faculty and researchers. This networking allows the benefits of the series to extend well beyond the main lectures, including allowing relevant departments to make a positive impression on leading scholars about research and teaching activities in these areas.

Cofounders Jonathan Beever and Nicolae Morar developed an initial formal proposal for

the project. The 2010–2011 academic year marked an evolution of the series as Beever and Morar, both approaching the end of their doctoral programs in philosophy, proposed a sustainability plan for the series that included a multiyear funding strategy for future graduate student facilitators. Purdue's new Global Policy Research Institute and the Office of the Provost awarded their efforts with funding for two 3-year extendable graduate student appointments to facilitate future iterations of the series. Beever and Morar also put in place a faculty oversight committee to help guide future graduate student facilitators. Current graduate student facilitators present annual reports to a group of 18 sponsoring organizations, both programs and departments from within Purdue's academic community and also centers and institutes from its renowned Research Park, whose support of the *Lectures* remains vital to its success. Not only do these sponsors supply the entirety of the annual budget, but also they are involved with attracting audiences and proposing speakers. Along with the formal proposal, support for the *Lectures* was achieved and is maintained through personal meetings with sponsors to discuss goals and purpose. The wide variety of sponsorship works for the series on many levels. Not only does it increase attendance and audience diversity, but also it enables the series to advertise more widely and efficiently across the University community. Finally, the wide range of sponsors for the series demonstrates the universal nature of the questions that it is intended to raise.

Major Activities

Each year, the *Lectures* focuses on developing between four and eight seminars on a range of topics that are pertinent to their audience and relevant to current University and global affairs. Scholars who have an international reputation and are intimately involved with the topic at hand are sought out as speakers, chosen by the graduate student facilitators each of whom is a young researcher in and around bioethics. The *Lectures* also seeks out collaborative projects and

events across programs and institutions, having to date worked closely with several organizations both internal to the University and within the state and region more broadly. These collaborative ventures help to establish the *Lectures* – and Purdue – in the broader context of regional ethics education.

The goals and objectives of the *Lectures* project seek to:

- Facilitate interdisciplinary discourse on “hot” issues in science, ethics, and policy
- Promote ethically responsible development of science, technology, and policy at Purdue
- Establish connections between Purdue’s science and technology community and other regional science policy institutions around the development of ethical thought and action
- Involve philosophy in policy and ethics decisions at a campus-wide level
- Build opportunities for engagement for students and faculty
- Broaden the scope of bioethics to include issues related to the environment, energy, and nonhuman animals
- Involve nationally recognized scholars in diverse discussions of bioethics
- Develop a sustainable online e-resource of expert perspectives in this broad view of bioethics

The success of the seminar series is due in part to an extensive advertising system. An advertising flyer is developed by a professional graphic artist and distributed before each talk by the facilitators. They strategically distribute electronic versions of these posters, utilizing networks of contacts to create mailing lists, contacting individual faculty members, and relying on colleagues in philosophy and other relevant departments inside and outside liberal arts to help advertise the series and the individual talks. Finally, the facilitators work with faculty instructors to integrate seminars into classwork, drawing undergraduate students to the *Lectures*. As the series continues to grow, word of mouth has become also a valuable manner of advertising. Faculty and administrators have praised the *Lectures* for its professionalism and high quality, for attracting world-class speakers on a diverse range

of topics to Purdue, and for building invaluable links between and among the liberal arts and the sciences.

Landmark Contributions

The *Lectures* project was the independent initiative of two graduate students in philosophy, Jonathan Beever and Nicolae Morar, who together initiated, led, and developed the series from 2006 to 2012. Since its inception, the *Lectures* has grown steadily and sustainably. The original *Purdue Bioethics Seminar Series* developed out of a University Fellowship awarded to Morar in the Fall of 2006. The project accomplishes two goals. First, it has established an annual series of ethics seminars by distinguished speakers, who each focus on key issues in bioethics – from health and disease to climate change. Second, it established a website dedicated to these seminars at www.purdue.edu/bioethics that hosts streaming media and supplemental resources for those topics. To date, the *Lectures* has hosted over 30 events and speakers on a wide range of issues, from Bernard Rollin on animal pain to Norman Daniels on healthcare and Henry Shue on global climate change. In that first year of the program, more than 250 students, faculty, staff, and members of the at-large community attended these seminars. The series noted continuous growth since then, with an average of over 110 participants at each event.

The *Lectures*’ website, www.purdue.edu/bioethics, bolsters the project’s longevity and reach by providing an initial resource library for the topics of the seminars, cataloging bibliographies of speakers, and streaming media recordings of all lectures given after the first year. In that first year, more than 1,107 people visited the website and over 6,000 web pages were loaded. Since that time, use and visibility of the website has continued to expand, registering over 10,000 annual page loads with close to 3,500 annual unique visits. The resource base the facilitators continue to build will become an active record of the seminars and topics of this series – and a growing resource for education and research in bioethics.

To date, bioethics at Purdue continues to facilitate connections between philosophers, policy makers, and scientists around important themes in bioethics. It has fostered the development of Purdue's first undergraduate bioethics club, facilitated research and pedagogical projects, and cosponsored a variety of other campus-wide ethics events and initiatives. In so doing, the *Lectures* likewise fosters professional development for the graduate student facilitators, leading to further research and teaching opportunities.

Major Areas

Areas of focus for the *Lectures* include environment and climate, biotechnologies, use of nonhuman animals, medicine, health, and public policy: all conceived under the umbrella of bioethics.

For More Information

To learn about upcoming events, watch past events, and learn more about the *Lectures*, please visit www.purdue.edu/bioethics or contact the Purdue Lectures in Ethics, Policy, and Science at Purdue University at bioethics@purdue.edu.

Cross-References

- [Agricultural Ethics](#)
- [Animal Welfare in the Context of Animal Production](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Biodiversity and Global Development](#)
- [Biofuels: Ethical Aspects](#)
- [Biotechnology and Food Policy, Governance](#)
- [Centre for Animal Welfare and Ethics](#)
- [Climate Change, Ethics, and Food Production](#)
- [Environmental Ethics](#)
- [GMO Food Labeling](#)
- [Nanotechnology in Agriculture](#)
- [Oxford Centre for Animal Ethics](#)
- [Systemic Ethics to Support Wellbeing](#)

Biofuels: Ethical Aspects

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Synonyms

Agro-energy; Biodiesel; Bioenergy; Bioethanol;
Food versus fuel; Fuel crops

Introduction

Oil is one of the drivers of Western industrial societies. Our pattern and (increasing) quantity of oil consumption, however, is becoming more and more problematic for a number of reasons. First, oil and other fossil fuel stocks are finite and will at some point run out or become prohibitively costly to mine, both in economic and in environmental terms. Second, burning fossil fuels releases greenhouse gases into the atmosphere, thereby contributing to global climate change. Third, dependence on oil implies dependence on oil-producing countries – countries that might not always be politically stable or well disposed toward oil-importing countries and thus threaten the importing countries' energy security (Landeweerd et al. 2009).

Biofuels have been hailed as a replacement that had the potential to address all those problems. First, biofuels are made from plants or algae ("fuel crops") that can be cultivated indefinitely, rather than coming from a limited stock. Second, biofuels were initially considered to be "carbon neutral," where the amount of carbon emitted during combustion would be the same as the amount stored in the plant during growth, leading to a net carbon emission of zero (however, see section "Land Use"). Third, fuel crops can be grown anywhere, though conditions in the (sub)tropics favor certain kinds of crops such as oil palms, which means that it lessens dependence on oil-producing countries.

Biofuels: Ethical Aspects, Table 1 Kinds of biofuels by source (classification according to NCB 2011)

Generation	Type	Examples	Promises
First	Food crops	Palm oil, soy oil, rapeseed oil (biodiesel); corn ethanol, wheat, sugar cane (bioethanol)	Renewable, carbon neutral, no dependence on oil-producing countries
Second	Nonfood crops	Switchgrass, <i>Miscanthus</i> , willow, <i>Jatropha</i> , “waste” materials (stalks, leaves, etc.)	Does not take up farmland, can grow on marginal soil
Third	Nonfood organisms	Algae	Does not take up farmland, relatively efficient photosynthesis compared to plants

In addition, two arguments are often mentioned in favor of using biofuels rather than alternative energy sources for the transport sector: First, biofuels can be blended with fossil fuels and thus can utilize our existing infrastructure, whereas the switch to electric cars or a hydrogen economy would require massive infrastructural changes. Second, heavy-duty vehicles such as airplanes cannot as yet be powered by fuel cells or batteries but could be powered by biofuels (Nuffield Council on Bioethics 2011, 19, hereafter the NCB). In practice, however, many types of biofuels have not lived up to their promises or even exacerbated problems and created normative, practical, and political challenges besides. This entry aims to give an overview of ethical issues of biofuels and their treatment in the literature.

In particular, after giving an introduction on what biofuels are, this entry presents an overview of ethical challenges on two levels: the practical and policy level, where concrete ethical problems arise and are addressed by governments and advisory and regulatory bodies, and the theoretical level, where the choice of theoretical framework influences which problems and possible solutions are highlighted. Issues related to GM agriculture and intellectual property are not addressed here as those topics are covered elsewhere.

Biofuels and Ethical Frameworks

What Are Biofuels?

Biofuels are liquid fuels derived from biomass, which can be bioethanol (made from fermented plant sugar) or biodiesel (made from plant oil);

this entry focuses on their use as transport fuels. Biofuels are usually categorized as belonging to the “first,” “second,” or “third” generation; while categorization may differ, this entry adopts that of the NCB (2011) by type of source used. Here, the first generation consists of fuel derived from food crops such as rapeseed, soy beans, and corn. The second generation consists of fuel derived from inedible plants such as switch grass or *Jatropha* or “waste material” such as stalks and leaves. The major promise of these types of crops is that they do not require farmland and grow on marginal soil and so do not compete with food crops. The third generation consists of fuel derived from algae that would not require farmland, as they could be grown in ponds or bioreactors. Third-generation biofuels are still in an early phase of development, and little has been written on their ethical aspects (exceptions are McGraw 2009; Biello 2011). An overview of the generations, some examples, and their related promises can be found in Table 1.

Biofuels in Practice: Concrete Issues

This section discusses how biofuels have fared so far compared to their promises and what new issues have arisen. As different kinds of biofuels tend to have different costs and benefits and the promises of second- and third-generation biofuels are mostly tied to anticipated developments, this entry abstains from giving a normative judgment regarding which kind of biofuel is “best.” Rather, the section is structured as a descriptive account of different issues and value trade-offs that occur in the context of biofuel production and use.

Food Versus Fuel

The strongest critique against first-generation biofuels, and also the strongest driver to develop subsequent generations, is the very idea of using food crops for fuel. Jean Ziegler, United Nations special rapporteur on the Right to Food, has called first-generation biofuels a “crime against humanity” as they threaten the human Right to Food. Several arguments have been given why using food crops for fuel is problematic. First, though biofuel production cannot straightforwardly be said to lead to rising food prices (NCB 2011, p. 30), selling food crops on the fuel market could influence the food market in various negative ways (Gomiero et al. 2010). This is exacerbated by the fact that cars require lots of biomass to go on: the common example cited in the literature is that filling the 25-gal tank of an SUV with pure corn-based ethanol would require over 450 lb of corn, which contains enough calories to feed one person for a year (e.g., Gamborg et al. 2011). Considered on a larger scale, this equation means that using food for fuel is in a sense throwing food in a bottomless pit, where even processing huge amounts of food crops will only offset a small percentage of our transport fuel consumption (Biello 2011; Gamborg et al. 2011). Many authors therefore stress that biofuels are by no means a comprehensive solution to the problems caused by oil dependence, but rather might have a place in an “energy portfolio” alongside other renewable energy sources, together with efforts to conserve energy and make existing usage more efficient (NCB 2011).

Proponents of second- and third-generation biofuels are quick to point out that their proposed crops cannot be used as food and will thus avoid the food versus fuel trade-off. Indeed, one argument for converting “waste” plant material such as stalks and leaves into fuel is that it would be a more efficient use of existing food crops. However, another trade-off lurks here: in a sense there is little or no “waste” in agriculture as unused plant material is often composted or left on the soil. This serves a variety of purposes, such as preventing soil degradation and erosion, maintaining soil ecology, and converting arable

land into carbon sinks, offsetting carbon emissions (Gomiero et al. 2010). Therefore, Gomiero et al. claim that there is a clear limit to how “efficiently” arable land can be used and suggest that a precautionary approach should be adopted in removing plant material (and the nutrients contained therein) for fuel conversion.

Both the food versus fuel debate and the problem with using waste material for fuel stem from a broader question, namely, “What is the best possible use that these crops (this farmland) can be put to?” Compared to possible applications such as food, biopharming, and chemicals, biofuels are a low-value, low-priority application of biomass, given the high energy costs and huge quantities needed for fuel production, meaning that this question will rarely straightforwardly be answered with “biofuels.” Indeed, some companies that started developing algae-based biofuels have remained in business by switching to producing more profitable food supplements and chemicals (Biello 2011).

Land Use

Closely related to the food versus fuel debate is the issue of land use. The problem is basically that there is a finite amount of arable land to go around and land used to grow fuel crops cannot be used to grow food crops (though food and fuel crops can be combined, e.g., through intercropping or planting fuel crops in hedges around food crop fields; also, crops like corn or soy can be sold either for food or for fuel). Thus, food can compete with fuel even though the fuel is made from nonfood crops.

One way to deal with this problem is to convert non-arable land (e.g., forest, savannah) into arable land. This land can then be used for food crops displaced by biofuel crops (which is called “indirect land use change” or ILUC, itself a problematic concept; see, e.g., Gamborg et al. 2011; NCB 2011, pp. 31–33). Another option is to use this land for the biofuel crops themselves (“direct land use change”), thus adding to the total amount of arable land. Not only can this be detrimental to local ecosystems and biodiversity, however, land conversion can also release great amounts of carbon into the

atmosphere, essentially offsetting the emission gain of biofuels for tens or even hundreds of years (Gomiero et al. 2010).

Another way to deal with the problem of land availability is to grow fuel crops on non-arable land directly. It has been promised that second-generation biofuel crops can grow on marginal land that is otherwise unsuitable for growing food crops. However, it is generally the case that biofuel crops grow *better* on arable than on marginal land, giving farmers and businesses a strong incentive to plant their fuel crops on arable land. To this can be added the fact that marginal land, being marginal, generally has little or no infrastructure and is only sparsely populated, which raises the costs of planting, harvesting, and transport. An additional conceptual problem is that “marginal land” and “wasteland” are ill-defined terms (Guariguata et al. 2011), and land that is designated “marginal,” and thus fair target for acquisition by biofuel companies, may be home to poor subsistence farmers and endangered flora and fauna and otherwise provide valuable resources for local communities. Indeed, the designation of land as “wasteland” and the fact that local inhabitants often only have customary rather than legal land rights have repeatedly led to land grabbing by large corporations and forced eviction of its users (e.g., Kumar et al. 2012).

Global Biofuel Trade: Opportunities and Threats

Biofuel production and use practices have become increasingly globalized (Mol 2007): while the United States produces most of its own corn ethanol, the EU imports a sizeable amount of its biofuels from (sub)tropical countries, e.g., palm oil from Malaysia and Indonesia. There are several reasons for this. First, those countries have potentially more arable land available than the already intensively farmed EU. Second, some biofuel crops such as oil palm and *Jatropha* only grow in a (sub)tropical climate. Third, ideally, the global biofuel trade could boost developing countries' economies as well as the economic situation of their poor farmers, especially if processing and refining would also take place locally (Mol 2007). The global biofuel trade, however, gives rise to its own ethical issues.

The crucial responsibility for importing countries is to make sure that the costs of biofuel production (e.g., exploitation of local workers and the local environment) do not outweigh its benefits (e.g., reduced carbon emissions and increased energy security). Especially for first-generation biofuels, the drive for global sustainability and ambitious biofuel targets has often diminished what Mol (2007) calls “local sustainabilities” by way of deforestation, exploitation of workers, land grabbing, etc. According to Smith (2010), the global biofuel trade has involved the transfer of risks to the Global South and especially its poor, such as environmental and new market risks. This has led various organizations such as the NCB (2011) to propose criteria for sustainable biofuel production; it has also been suggested that a wide reflective equilibrium process should be used in order to achieve a fair biofuel policy (Jordaan 2007). Yet while criteria setting and certification (such as Fairtrade) are generally regarded favorably, some issues remain overlooked (Guariguata et al. 2011) or unanswered (Partzsch 2011) by it. For example, power inequalities among stakeholders or underrepresentation of stakeholders in developing countries can bias the criteria-setting process. In addition, there is a discussion on whether to adopt a global certification system, which would facilitate global trade and implementation or to adopt local frameworks that could be better tailored to local situations (Guariguata et al. 2011).

Ethical Frameworks: Toward a Systematic Ethics of Biofuels

This section analyzes the relation between ethics of biofuels and broader trends within environmental and agricultural ethics. It has been noted that biofuels have often been discussed in a piecemeal way, lacking systematic ethical analysis (Buyx and Tait 2011). However at the same time several researchers have tried to integrate the debate about biofuels into broader ethical frameworks. One can distinguish approaches that focus on the value of nature (section “[Biofuels and the Value of Nature](#)”) from those that focus on sociopolitical aspects of biofuels (section “[The Politics of Biofuels](#)”). Finally, this

entry discusses first attempts to develop an overarching framework based on (a combination of) ethical principles and material values (section “[General Ethical Principles and Biofuels](#)”).

Biofuels and the Value of Nature

The debate on biofuels can be placed in the broader debate about the role of nature in industrialized societies. Early environmental ethics argues that most ethical systems are anthropocentric (i.e., centered on the needs and values of humans) and that these systems therefore tend to ignore the value of nature. What is needed is, however, an ethics of responsibility in which nature is central. This implies reevaluating the values of nature, the role of wilderness or “untouched nature,” the appropriate treatment of nature in agriculture (Thompson 1994), and the ethical status of plants and plant life integrity (Pouteau 2012). Ever since Heidegger’s influential essay on technology, philosophers complain about the tendency to regard nature as a mere resource for human needs and describe countervisions of living in harmony with nature, or analyze ways to treat the land with respect, as an end in itself (Jasanoff 2010).

Thompson has pointed out that public views on farming contain an interesting tension: on the one side farming is a primal form of technology, “yet the farm is, for many, a paradigm of nature” (2009, p. 1257). Agriculture makes thus the distinction between nature and culture more difficult, as plants and human coevolve and as farming is one of the oldest cultural techniques. As Karafyllis (2003) observes, the reputation of biofuels in the public debates benefits from the image of renewables as being part of the organic cycle of nature and thus exhibiting the “aura of naturalness.” This is in striking contrast to the role biotechnology and genetic modification plays in current and expected future production of biofuels. Karafyllis thus argues that also the acceptance of biotechnology should be included in technology assessment reports of biofuels.

The Politics of Biofuels

Recently the debate about biofuels has been put in the context of the classical debate between *technological determinism* and *social*

constructivism. It has been argued that generally speaking engineers tend to embrace technological determinism, while researchers from a social science background often lean toward a social constructivist perspective. While technological determinism sees technology as bringing about societal changes, social constructivism rather sees society as bringing about technological changes. Biofuels can then be seen as an attempt to find a technological solution – a “techno-fix” – to a societal problem, being “therefore a classic example of engineers explicitly pushing for societal change” (Landeweerd et al. 2009, p. 539). A social constructivist perspective would, however, point out that not only a change in technology is needed but first and foremost also a social reorientation of our lifestyle. There seems to be a consensus that a middle ground between determinism and constructivism should be sought, even though there is disagreement as to what this middle position would be (Boucher 2011). Most authors in the debate highlight that it is therefore important to become aware of the underlying values of policy decisions in the field of biofuels (see also section “[Global Biofuel Trade: Opportunities and Threats](#)”).

As such, it has been suggested that global biofuel policy is subject to two different types of questions: (a) *whether* it should encourage biofuel production at all (b) and, *if so*, by which means it should reach this aim (Ng et al. 2010). Even if biofuels help reducing GHG emissions, one could ask whether climate policy should be technology neutral. Economic support for biofuels might redirect investment away from other competing alternatives; therefore non-favoring approaches such as a carbon tax system might be more desirable. Assuming policy should favor biofuels, one can debate which means are most efficient to foster their production and usage. Wiesenthal et al. (2009) have compared tax reduction measures and legal obligations to fuel producers to blend conventional fuels with biofuels. While the consumer will not be burdened in the case of tax exemption, there will at the same time be loss of tax revenue for the state; obligations to fuel providers on the other hand are more far-reaching instruments that require public acceptance.

General Ethical Principles and Biofuels

Next to debates that link biofuels to environmental ethics or ethics of agriculture (section “[Biofuels and the Value of Nature](#)”), researchers have suggested to use classical ethical frameworks to investigate moral aspects of biofuels. Gamborg et al. (2011) contrast deontological and consequentialist perspectives. The latter focuses on costs and benefits and tries to evaluate potential risks, such as environmental degradation or higher food prices. Deontologists will also try to account for the intentions of the actors and stakeholders, which complicates the ethical evaluation, as it is not clear whose intentions to take into account, how to distinguish collective from individual intentions, and how to account for unintended consequences.

Next to these two classical ethical perspectives, philosophers from various traditions have investigated ethical issues of biofuels in the light of different moral and social traditions. These approaches include religious perspectives (Rasmussen et al. 2011), reflections on intercultural difference (e.g., Landeweerd et al. 2012), or gender aspects (Rometsch 2012). The most comprehensive ethical evaluation thus far has been presented by the NCB (2011). The authors suggest evaluating biofuels in light of humans, nature, and society: biofuel production should be in line with (1) human rights and (2) environmental sustainability and achieve substantial GHG reduction (3). Principles 4 and 5 address socioeconomic issues such as just rewards (4) and an equitable distribution of costs and benefits (5). The authors conclude that there is an ethical duty to develop biofuels, but only if these principles are met.

Conclusion

Although there is much to criticize about biofuels, the conclusion should not be drawn that there is no future for them. Indeed, the oil consumption-related problems which biofuels were supposed to relieve still stand, and while large-scale production and use of biofuels has often led to large-scale problems, this does not

mean that there cannot be local niches for production and use. Nor does it mean that there should be no further research on biofuels, whether or not this is considered an ethical duty. Indeed, many open questions with regard to biofuels would benefit from attention from scientists of all kinds, including the social sciences and the humanities, as the Ethical Frameworks section has shown. It does mean, however, that biofuel production and policy setting should proceed with caution. Clearly, its effects on food security, land use, and local communities and ecosystems should be carefully monitored, lest the cure (again) be worse than the disease.

Summary

Biofuels have gained much attention in the last decades as a supposedly sustainable alternative for fossil fuels. However, their production has been accompanied by numerous ethical problems. This entry presents an overview of those problems. First, it explains what biofuels are. Next, it goes into practical issues such as the food versus fuel trade-off, problems with land use for biofuels, and social consequences of the global biofuel trade. Finally, it gives an overview of different ethical frameworks that have been used to evaluate biofuels, including frameworks explicating the value of nature; political and social aspects of biofuels; and classical ethical frameworks.

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Cross-References

- [Agricultural Ethics](#)
- [Biopharming](#)
- [EU Regulatory Conflicts over GM Food](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Intellectual Property and Food](#)
- [Land Acquisitions for Food and Fuel](#)

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Biopharming

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Synonyms

Gene pharming; Molecular farming; Pharming

Introduction

Biopharming is the production and use of transgenic plants and animals genetically engineered to produce pharmaceutical substances for use in humans or animals. It often involves the insertion of gene constructs derived from humans. Biopharming exists on a spectrum of activity and is not clearly demarcated from its nearest

neighbors. For example, genetically modified yeast, bacteria, and animal cell cultures have for some time been used to produce pharmaceutical substances in enclosed bioreactor systems, but are generally not included in the definition of biopharming. On the other hand, plant cell cultures, a newer development but also involving enclosed bioreactors, are typically included together with whole-plant methods in plant biopharming. While animals are also being genetically modified to alter their nutritional composition, to make them better models for human disease, and to provide more compatible organs for transplantation into humans, these are typically excluded from the definition of biopharming.

There has been little scholarly discussion of biopharming from an ethical perspective; two exceptions are Birnbacher (2007) and Reh binder and colleagues (2009). Animal biopharming typically receives brief mention in analyses of the ethics of genetically modifying animals, although public debate and controversy around biopharm animals have attracted some scholarly attention (Taussig 2004; Välvirronen 2004). Plant biopharming is often assumed not to raise specifically ethical issues, although some attention has been given public views of the technology and its use (e.g., Einsiedel and Medlock 2005; Milne 2010). This entry examines important ethical issues in animal and plant biopharming, focusing particularly on the exaggeration of benefits, the potential for harm, and the (in)adequacy of regulatory oversight, among other issues.

Background

The pharmaceutical compounds intended to be produced through biopharming are a subset of the class of pharmaceuticals known as biopharmaceuticals. Biopharmaceuticals are medicinal drugs derived from living organisms and requiring biotechnological intervention; they are distinguished from those produced through chemical synthesis or by direct extraction from a native (non-engineered) biological source. They are typically manufactured using

microorganisms and cell cultures in indoor facilities. Biopharming is thus an alternative method for the production of biopharmaceuticals.

Biopharming has been carried out experimentally for more than 20 years. As of this writing, three biopharming-produced pharmaceuticals have been approved for use in humans in the USA and/or EU (produced in transgenic goats, transgenic rabbits, and transgenic carrot cell cultures). A number of others, using both plants and animals, are in clinical trials. A very wide range of plants and animals are used as biopharming production “platforms” or “living bioreactors.”

Biopharming has not been widely discussed in the popular media, even though it has been implicated in several genetic-modification controversies. The animal who became known as Stier Herman (Herman the Bull), the first transgenic bovine, was a biopharm animal produced in the Netherlands in 1990 and modified with the human gene for producing lactoferrin. The subject of great controversy, he was created in the hope that he would confer on his female offspring the capacity to produce recombinant human lactoferrin in their milk. The company that created him, Gene Pharming Europe, declared that Herman and his offspring were being produced solely for biomedical research purposes. This was permitted under Dutch legislation that allowed the genetic modification of animals only in exceptional circumstances, one of which was supplying products for medical use in humans that could not otherwise be supplied. The controversy escalated when it was discovered that the research had been funded by a company that intended to use the lactoferrin in baby formula (Taussig 2004).

In 2002, US government inspectors found that ProdiGene had failed to comply with protocols for field trialing corn genetically modified to produce an experimental pig vaccine. As a result, “volunteer” plants sprouted the following season, when soybeans were grown on the site, and were not removed, enabling them to contaminate the commercial cornfields that surrounded the experimental plot. In a second location, where the same thing had occurred, ProdiGene was found to have harvested the soybeans together with the

volunteer biopharm corn, despite assuring the regulator that it had destroyed the corn plants prior to harvesting. Despite having been levied a very hefty fine for this, and agreeing to a new compliance program and audit requirements, ProdiGene was found to have violated protocols again in 2004, failing to monitor for volunteer plants from a field trial of biopharm corn. Volunteer corn plants were found by government inspectors growing and flowering within the fallow zone surrounding the field trial and in a nearby sorghum field. They also found that oats growing in the border rows immediately surrounding the biopharm corn had been harvested, contrary to requirements (APHIS n. d.). Partly as a result of these incidents, actors ranging from the Union of Concerned Scientists through the Grocery Manufacturers of America to the Editors of *Nature Biotechnology* called for the exclusion of food crops from biopharming.

The Promise and Promotion of Biopharming

In the 1990s and early 2000s, biopharming's promoters painted a picture of dairy farmers sending their milk off to the drug company and crop farmers growing large quantities of therapeutic proteins as easily as they grow wheat, corn, or soybeans. In the public sphere, biopharming has been described as a way to produce new treatments for human diseases, to reduce the cost of drugs to consumers, to improve the economic viability of farming and rural regions, and to increase developing countries' access to medicines. On the last point, the idea of the edible vaccine was given prominence: food plants such as bananas would be engineered to contain the vaccine in their fruit, which would obviate the need for the temperature-controlled, hygienic conditions required by conventional injectable vaccines. To potential investors, biopharming has been promoted as a method able to outcompete conventional production methods, based on the notion that agricultural practices and infrastructure are less costly and more easily upscaled or downscaled than the kinds of

production facilities required by microorganism and cell culture production.

As has become typical of biotechnological innovation (Brown 2003), this promotion of biopharming was characterized by what could be called "hype." Early claims and promises were not well grounded in reality and far outstripped actual achievements. Although the original promises can still be found in some pronouncements about biopharming and in debate around its regulation, expectations for the technology appear to have shifted considerably over the past 10 years.

The need to protect the quality and purity of pharmaceutical substances from environmental contamination and to protect the environment from pharmaceutical contamination casts serious doubt on the adequacy and acceptability of utilizing existing agricultural practices and infrastructure for drug production. Much research on plant biopharming now focuses on "indoor" versions, using plant cells, algae, or duckweed grown in full containment. The biopharm goats that produce the drug ATryn are kept in dedicated indoor production facilities owned and run by the biotechnology company that developed them – a far cry from the dairy farmer's "pharma herd." The excitement over edible vaccines has also ebbed, as problems of quality and dose control become apparent. It is now widely accepted that while vaccines may be produced in plants, they will need extraction and some degree of processing before they can be administered, whether orally or through injection (Rybicki 2010).

The business case for biopharming has also run into difficulties. Production costs are a very small part of overall drug costs, and pharmaceutical companies have not been eager to take on the risks of the new production method in the hope of economizing on what is already a relatively minor cost. Drug prices are brought down, in general, not by lowering production costs but by loss of patent protection and the introduction of competition. Production costs would be more relevant for the biopharmaceutical equivalent of generic drugs, so-called biosimilars, but these face much greater challenges than chemically

synthesized drugs when it comes to demonstrating their equivalence to the original patented product. In addition, the biopharming process is much more difficult to set up than the production of generic chemically synthesized drugs; it therefore seems that biopharmaceutical producers are less likely to attract competitive generic producers. Meanwhile, conventional VAT bioreactor technology has not stood still, with developments improving productivity, scalability, and cost-efficiency.

Nonetheless, all types of biopharming still have their promoters, and research is still being pursued by competing groups using a range of animals (large and small), outdoor plant production, indoor plant production, and plant cell cultures. The proponents of each argue that their platform has advantages in productivity, scalability, speed of response, safety of drug produced, cost, or suitability to particular conditions. A significant amount of this research is publicly funded.

Animal Biopharming

Considerably less attention, both public and scholarly, has been paid to biopharm animals than to transgenic animals intended for food or as organ donors to humans (xenotransplantation). As biopharm animals are a subset of transgenic animals, however, they raise many of the same questions: for example, does biopharming inflict suffering on the animals? Can this suffering be justified? What does such intensified instrumentalization mean for humans' relationship with animals and humans' understanding of themselves? Is it foolhardy, or hubristic, to intervene in complex systems about which we have limited understanding?

Many biopharm animals are currently created through cloning, with implantation into another animal for gestation. Most cloned embryos fail to develop to term, and of live births, many suffer from crippling or fatal abnormalities, the causes of which are not understood. Gestating animals also suffer health problems: for example, bovine gestators of cloned animals are much more than normally prone to dystocia due to oversized calves

("large calf syndrome") and to hydroallantois, caused by a defective placenta; both of these cause pain and suffering and can be fatal.

Cloned animals are more prone to musculoskeletal abnormalities and, perhaps particularly significant for biopharming, compromised immune systems. Abnormalities may not reveal themselves before the animal enters a production system, while some epigenetic aberrations may not show themselves in any obvious phenotypical way (Laible and Wells 2007). Cloned animals can also pass on pathological abnormalities to their offspring.

Aberrant transgene integration and its effects are poorly understood. Further, according to Reh binder and colleagues (2009), "[s]tudies of welfare issues arising from making transgenic animals are still in their infancy" (p. 196). These and other unpredicted and undesirable results highlight for some the degree to which intervention outpaces understanding and for others the riskiness of the endeavor: How can nonobvious, unanticipated, and deleterious changes be identified in transgenic animals (or plants) if one does not know what to look for? And how can the risk of such outcomes be evaluated when understanding is so limited?

While these problems are associated with cloned transgenic animals in general, particular to biopharming is the problem of the effect on the animals of the bioactive pharmaceutical substance their cells have been engineered to produce in high concentrations. This would vary depending on the nature of the pharmaceutical substance and appears to be both a potential animal-welfare hazard and a limitation of animal biopharming (i.e., certain kinds of substances may not be producible in animals because of their deleterious effects on the animals producing them).

When it comes to assessing the acceptability of using animals in this way, the harms to the animals are often weighed against the potential benefits to humans of the drugs produced. However, it is also necessary to ask: are there alternatives? While it is sometimes claimed that animals could potentially be used to produce drugs whose particular characteristics make them difficult or impossible to produce in other ways, this is not

the case for the uses to which biopharm animals are currently being put. The same drugs can be, and are being, produced through conventional biopharmaceutical production and/or through biopharm plants or plant cells. Whether or not one views the harms suffered by biopharm animals to be justified may depend, at least if one takes a utilitarian or consequentialist approach, on how much faith one places in these claims to future indispensability.

There are fewer concerns about keeping biopharm products out of the food supply than in the case of plant biopharming, due to the fact that the relevant animals are easier to monitor than pollen or seeds. However, there has already been at least one case of possible inadvertent contamination of the food supply by animal biopharming. Between 2001 and 2003, the University of Illinois released 356 pigs, which were part of their transgenic biopharming experiments to produce certain proteins in the milk of sows, to livestock dealers. The university argued that the pigs did not contain the transgenes of their parent stock nor were they old enough to be lactating; however, investigations by the FDA found that records were inadequately kept and they were unable to verify this (FDA 2003).

As this incident suggests, biopharming operations will have an incentive to derive some value from animals or animal materials produced by the operation but not utilizable for biopharming – for example, offspring who do not exhibit the desired traits or are surplus to requirements. It is not unlikely, therefore, that biopharm operators will seek approval for excess animals to be permitted in human food or animal feed (U.S. National Research Council 2002). This would create pathways for potential contamination of the food supply through animal biopharming.

Risks of contamination of the environment and adverse impacts on other organisms appear to be lower than with biopharm plants because biopharm animals are easier to contain than, e.g., pollen from biopharm crops. However, outdoor animal biopharming (or careless management of indoor biopharming) could potentially impact on organisms in the environment such as soil micro-organisms, animals and plants that feed on animal

waste, and blood-sucking insects. Through horizontal gene transfer, biopharm animals producing antibiotic substances (or therapeutics with antimicrobial properties, a common trait of pharmaceutical substances not intended to be used as antibiotics) could potentially aggravate the problem of antibiotic-resistant bacteria by encouraging resistance in populations of soil bacteria or bacteria that are the animal's natural commensals. The degree to which this may be a problem will depend, *inter alia*, on the substances produced and the scale and location of the biopharming operation.

A recognized concern is the possibility of passing on zoonotic diseases (diseases that can be transmitted from animals to humans) through drugs from biopharmed animals. These include prion diseases, that is, transmissible spongiform encephalopathies, including bovine spongiform encephalopathy (BSE), variant Creutzfeldt-Jakob disease (vCJD), and scrapie. The company producing ATryn sourced its original (non-GM) goats from New Zealand because that country has been declared scrapie-free. There is also a risk that the animals will contract zoonotic diseases through exposure to infected organisms in their environment. It is likely for this reason, rather than to prevent contamination of the environment, that the goats producing ATryn are kept in an indoor facility. Keeping animals in indoor facilities may, however, raise other animal-welfare issues, depending on the animals and conditions in which they are kept. While these conditions will almost certainly be more hygienic than those characterizing many food-animal operations, they may still, through confinement, prevent the animals from expressing their natural behaviors.

Plant Biopharming

Plant biopharming is argued to pose fewer risks to the recipient of the biopharmed drug than animal pharming, because plant diseases are generally not seen as a threat to human health. While plant-biopharmed drugs cannot pass on zoonotic diseases, they potentially pose greater allergenicity and immunogenicity problems, due, in simple

terms, to differences between plants and animals in protein production processes (i.e., in the “post-translational modifications” that occur after the RNA has been translated into protein). Much research in this field aims at making the therapeutic proteins produced by biopharm plants more human-friendly.

All biopharmaceuticals require extraction and purification. While a challenge for animal biopharming is the detection and removal of zoonotic disease, for outdoor plant biopharming, the purification process must be able to remove assorted environmental contaminants in and on the plant material, such as pesticide residues (including from pesticide drift), insect parts, bird feces, etc. This would presumably warrant changes to existing purification processes and protocols.

A major concern associated with plant biopharming is the possibility of the unintentional contamination of food with bioactive pharmaceutical substances. Some developers are focusing on nonfood plants, such as tobacco, or on plant cell cultures, algae, or duckweed, but a large variety of food plants continue to be used as bioreactors, including major food crops, such as rice, maize, and potatoes. Those who use food plants, especially major food crops, argue that this is justified by the fact that more is known about their physiology, agricultural needs, and protein-expression mechanisms (Sparrow et al. 2007).

Contamination can occur through a number of pathways, including cross-pollination with non-biopharm crops, seed dispersal, the germination of residual seed, postharvest mishandling (e.g., commingling in storage), the use of agricultural and transport machinery on both biopharm and non-biopharm crops, and the inappropriate disposal of biopharm crop waste. The risk of contamination is obviously increased when food crops (or nonfood crops used in processed foods, such as cotton) are used as bioreactors and open-air production methods are used. While a number of technical measures and production protocols have been proposed for these situations, it is acknowledged that even with these measures in place, the risk of contamination cannot be eliminated entirely.

Open-air plant biopharming also appears to pose, at least potentially, significant risks to other organisms in its environment. Birds, insects, rodents, and other animals may feed on parts of the plant producing the pharmaceutical substance. In addition, farmworkers (and close neighbors) may be adversely impacted through inhalation of pollen containing pharmaceutical substances. Soil microorganisms will also come into contact with biopharm plants. As with biopharm animals, biopharm plants producing antibiotic substances (or therapeutics with antimicrobial properties) may exacerbate problems of antibiotic resistance.

Regulation

Regulatory frameworks for biopharming have been slow to develop and have lagged well behind the development and application of the technology itself. This applies both to the production and handling of biopharm plants and animals and to the production of drugs derived from them (Rehbinder et al. 2009; Fischer et al. 2012). What might be called the liminality of biopharm plants and animals poses challenges for regulation. For example, agriculture and medicines are typically subject to different governance regimes, yet biopharm plants and animals belong to both categories (or to neither). Different regulatory agencies may have different cultures and be embedded in different power relations, which can pose problems for effective cooperation.

Biopharming activity is generally being governed through regulatory frameworks developed for other purposes, and this can result in regulatory gaps and poor fit. The development of biopharm plants has occurred in North America and Europe within regulatory frameworks designed for so-called first-generation GM food and fiber crops (e.g., those intended to produce Bt toxin or to be herbicide-tolerant); this appears likely to continue (APHIS 2008; EFSA 2009). While these frameworks may enable characteristics specific to biopharm plants to be considered in, for example, a case-by-case risk assessment, their use may still entail the importation of

inappropriate assumptions into biopharming regulation (Goven and Morris 2012). These frameworks rely heavily on their established approaches to risk assessment and risk management; Reh binder and colleagues (2009, p. 196) argue that biopharm plants and animals differ sufficiently from other GMOs to pose new, as-yet unidentified risks, raising difficulties for the identification of hazards and for the evaluation of their likelihood within these frameworks.

Protecting the welfare of biopharm animals may also encounter category problems. For example, some jurisdictions distinguish between experimental animal trials and the use of animals in production. Biopharm animals do not unambiguously fit either category: the distinction between animal trials to produce new knowledge, on the one hand, and breeding and production activities, on the other, is in their case not clear-cut. Moreover, many of the welfare problems associated with biopharming result from experimentation on embryos rather than the animals themselves, thus possibly falling outside the regulation of animal trials. This misfit is at least partly a result of legislation on animal trials generally having been developed with the safety testing of chemicals in mind. Biopharming animals may also fall outside the protections extended to farm animals, because they do not serve agricultural purposes. (On these issues, see Müller-Terpitz 2007, Reh binder et al. 2009, Chap. 8). In another example of categorical difficulty, the USA in 2008 decided that biopharm animals themselves would be regulated as drugs (specifically, “new animal drugs”).

Regulation of drugs produced through biopharming was also adapted rather than purpose-built. Good Manufacturing Practice (GMP) guidelines for biopharm drugs were originally modeled on those for animal cell cultures. These, however, are seen as too restrictive by those working with whole plants (rather than plant cells); established guidelines on the removal of contaminants in production from cell cultures, for example, provide immediate challenges for outdoor-biopharmed plants, as types of likely and possible contaminants differ significantly from those found in cell culture

production, as do methods for their removal. Standards for containment, hygiene, and batch-to-batch consistency developed for animal cell production cannot be met by outdoor biopharm plant production, whose proponents have instead argued for a different approach, one which “borrow[s] much from the concepts already in place for genetically modified food crops” (Fischer et al. 2012, p. 437). Current guidelines in the EU and USA indicate that regulators are shying away from specifying in advance the kinds of production processes that are acceptable (in terms of, e.g., organism used or degree of containment) and instead will decide on a case-by-case basis whether to accept drugs produced through different platforms.

Overarching Ethical Issues

Hype and Its Ethical Effects

Inflated benefit claims, both financial and humanitarian, are seen as characteristic of biotechnology (Brown 2003) and have featured in the promotion of biopharming (Välvirronen 2004; Milne 2010, 2012; Bloomfield and Doolin 2011). Scholarship within the subfield known as the sociology of expectations (see Borup et al. 2006 for an overview) has emphasized the key role played by the creation of expectations of future achievements in mobilizing support for technoscience. Claims of expected benefits can influence not only investment (including public investment) but also regulatory decisions. Although not uniquely, the history of biopharming raises questions about the ethics of promoting new technoscience through poorly grounded claims. As Brown (2003) has argued in relation to xenotransplantation research, unrealistic benefit claims may be weighed up against harms such that, for example, a degree of animal suffering is permitted that would not otherwise be. This suggests that humanitarian claims (e.g., that biopharming will enable the development of therapeutics for currently untreatable diseases or that it will provide safe, low-cost medicine to developing countries) should receive greater scrutiny. It also suggests that the ethics of making

such claims be considered. The reliability of benefit claims is also crucial to our consideration of whether it would be ethical *not* to pursue biopharming in any or all of its forms.

Inflicting and Exposing to Harm

As indicated above, the cloning of biopharm animals inflicts pain and suffering on (some) animals. The actions of the biopharm substance within the body of the animal can also cause harm. Protecting the biopharmaceutical from contamination may require housing the biopharm animals in a controlled, indoor environment, which could include isolation of individual animals from each other (to prevent the spread of infectious disease). Some would argue that, at least for some animal species, this in itself would inflict harm.

Biopharming has the potential to expose a range of others to harm. Despite the efforts of drug regulators to prevent it, patients, and those in contact with them, may contract zoonotic diseases passed on through biopharm animals; patients may also be harmed by novel contaminants that have not been removed through purification processes. This may call for a discussion of whether patients should be informed of the sources of these drugs (Rehbinder et al. 2009). Open-air biopharming may also inflict harm on its wider environment, specifically on those organisms that come into contact with biopharm plants or animals or their residues. These may include humans, whether farmworkers or those who consume food that has been contaminated through open-air biopharming, and will certainly include other species. This would amount to a deliberate introduction of harm or potential harm where none existed before, and thus requires justification.

Weighing Costs and Benefits: The Role of Alternatives and Cost Savings

A common approach to the question of justification is to weigh harms and potential harms against benefits and potential benefits. This brings us back to the reliability of benefit claims but also to the question of alternatives. Biopharming is being pursued simultaneously

across a wide range of “platforms.” Given this and the uncertainties that still characterize the technology, it would seem to be difficult to argue that there is no alternative to any one particular platform. Choice of platform appears to be driven by economic and intellectual-property considerations more than technical feasibility (Fischer et al. 2012). This substitutability is as relevant as potential benefits to ethical discussions of the acceptability of inflicting harm (on biopharm animals or other organisms) by the use of, e.g., animal biopharming or outdoor plant biopharming.

Because expectations of cost savings are such an important driver of biopharming, the problem of whether monetary benefits (through cost savings) can outweigh the infliction of harm is likely to arise. Cost savings must then be examined further: who will benefit? If cost savings simply add to corporate profits, is this sufficient benefit to outweigh, e.g., the infliction of suffering on animals or of added risk on human populations? How can we know in advance how cost savings will be distributed, if they do eventuate?

Regulatory Values

As noted, biopharming regulations have largely been derived from existing regulations developed for other purposes. Regulatory approaches institutionalize priorities and so embody values. For example, outdoor plant biopharming has largely been assimilated into regulatory regimes for other types of GM plants. These frameworks place a high priority on producer freedom of choice and market-driven innovation for economic competitiveness. This is reflected in the fact that an economic actor’s desire to develop, use, or buy a technology is in itself taken as evidence of benefit; no further benefit need be demonstrated. This does not appear to allow the kind of ethical querying of the nature and distribution of benefit, or consideration of the existence of alternatives, discussed above (Goven and Morris 2012).

Hubris, Irresponsibility, and Wisdom

Like other technological interventions characterized by a large degree of both uncertainty and ignorance and a potential to inflict irreversible

damage on individuals and ecosystems, biopharming, or at least some of its forms, might be considered to embody a hubristic and irresponsible meddling with life (Fiester 2008). Biopharming (also not uniquely) may raise concerns that we do it “because we can” rather than because it is necessary or wise. This in turn raises questions about the ethics of our technoscientific system and its regulation. Where in the process is there an opportunity to ask “Is it wise? Should we do it at all?” rather than “How can we minimize its risks without discouraging its development”?

Summary

Biopharming involves genetically engineering plants and animals, typically with human gene constructs, to produce biopharmaceuticals. It has thus far received little attention within bioethics or among social scientists. The nature and scope of the potential opportunities represented by biopharming remain unclear. The potential hazards associated with biopharming are wide-ranging and vary according to the “platform” used. Regulation of biopharming has not kept up with technological development and is arguably under-specified. Biopharming raises ethical issues in relation to the performative effects of inflated benefit claims, the infliction of harm and potential harm on biopharm animals and other organisms (including humans), the opportunity to consider alternatives and the significance and distribution of cost savings when evaluating biopharming’s acceptability, the values embedded in regulatory frameworks, and the proper response to uncertainty regarding far-reaching effects.

Cross-References

- [Agricultural Sciences and Ethical Controversies of Biofuels](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Biotechnology and Food Policy, Governance](#)
- [Industrial Food Animal Production Ethics](#)
- [Transgenic Crops](#)

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Biosecurity and Food Systems

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Synonyms

Agroterrorism; Biosafety bioterrorism;
Biosecurity; Food quality; Food safety

Introduction

Securing food systems against deliberate attack from malevolent actors is perhaps an overlooked issue in discussions of ethics of food and agriculture. This entry raises biosecurity of food systems as an issue of ethical importance, with the aim of showing how biosecurity, understood in a national security context, is relevant to discussions of food ethics and philosophy. A basic point

of this entry is that deliberate attacks on food systems have the potential to cause widespread harm to people and severe economic damage to food systems. Biosecurity is understood in this entry as having a focus on deliberate acts of harm. Understanding biosecurity of food systems in this manner does not garner typical discussion in food and agriculture studies. A partial explanation for this is multiple contrasting meanings of similar terms like food security, food safety, food biosecurity, biosecurity, and biosafety. Given the potential high impact of a deliberate attack on a food system, this entry will present biosecurity of food systems as an issue of importance, and one that needs to be understood alongside discussions of food security and food biosecurity, more generally construed.

The entry shows that biosecurity, understood with reference to deliberate harms, is an important ethical issue. Following a brief background discussion, the entry gives a general overview of relevant terms. Modeling of an act of agricultural terrorism, the deliberate poisoning of a food supply with botulinum toxin as with potentially devastating results, is used to show the high impact of an attack on a food system. In order to explain this high impact, common features of modern integrated food systems such as collection, centralization, and combination of food products are raised as making food systems vulnerable targets of attack. Finally, food traceability and response systems are raised as necessary elements in reducing vulnerability and limiting impacts.

Background

For the majority of people in the developed world, perhaps uniquely in human history, a relatively high proportion of the population typically do not worry about where their food is coming from: the supply of food is assumed to be reliable (Thompson 2010, p. 6). Such confidence applies not only to people's ability to reliably access cheap food and in large amounts, but also that people can generally feel that the *quality* of food itself is assured: people do not typically worry whether their food will make them

seriously ill. This entry focuses on the latter point, an assumed safety of food products. This entry looks at the problem of people deliberately targeting the food system for attack.

Though food industrialization has certainly increased the likelihood of food safety – a perception of total safety of food processes is contestable. Eric Schlosser writes that the “industrialized and centralized system of food processing has created a whole new sort of outbreak, one that can potentially sicken millions of people” (Schlosser 2003, p. 195). Aspects of the food production system have the potential to place many people at risk of illness from consuming contaminated food products. Paul Roberts states “[T]here are also undeniable parallels between these shifts in food-borne disease – the kinds of pathogens circulating, the patterns of outbreaks and the difficulty in treatment – and the emergence of a food system geared toward high volume, low costs, and rapid, worldwide distribution” (Roberts 2008, p. 178). The integrity of food supply chains can be lost through the actions of agents at key points in a food supply chain. Consider, for example, the “European horsemeat scandal” of 2012–2013, in which horsemeat was found in European beef products (Traynor et al. 2013). Inputs to food supply chains are not always assured. This is something that can be exploited not only by negligence or personal gain but also through the deliberate actions of malicious actors.

Food-borne diseases are typically covered in relation to food safety. However, when considering things from a point of national security, food production systems present targets for malicious actors to disrupt and perhaps harm large sectors of society. Modern food systems frequently collect inputs from a wide range of producers and sources, mix these inputs together in centralized processes, and then distribute widely to a large number of consumers locally, nationally, and increasingly internationally (Schlosser 2003, pp. 225–252). It is this model of collection, concentration, combination, and distribution that makes food processes a potential target for malicious actors. As with events of accidental food-borne illness, if a malicious actor was to get

certain toxins into a food supply chain at key steps in the process, this could result in an outbreak of illness, causing public fear and death.

Food Security, Food Safety, and Biosecurity

The focus of this entry, biosecurity and food systems, imports a model of food biosecurity from a national security vocabulary that may be outside typical discussions in agriculture and food science. Given the nonstandard usage, a general overview of key terms and their multiple uses is presented here. The particular intended meaning of biosecurity and food systems as a national security concern is explained.

Firstly, a distinction must be made between food security and food safety. Food security can be understood as a political/economic concept. With reference to the aims of global actors such as the United Nations (UN), the World Bank, and the Food and Agriculture Organization (FAO), food security “should be envisioned as a project of economic and developmental globalization that is designed to help poor and underdeveloped countries. . . [and focuses] on how growth will be most beneficial to the global poor” (Schanbacher 2010, p. 3). The typical concern is with “the just and fair supply of food to human beings” (Coff et al. 2008, p. 8). With concepts such as globalization and poverty underpinning the motivations and methods of groups like the FAO, food security for the world’s poor is something to be achieved through economic programs (Schanbacher 2010, pp. 2–23). While individual health and survival are chief concerns of food security, the problem is, roughly, one of creation and distribution of resources, and so the discussions are primarily in areas of political philosophy, economic theory, trade, and the like. This is discussed in more detail in the food security entry in this encyclopedia.

Contrast this model of food security with food safety: “Food safety deals with the safety of the food: food should not endanger the health of consumers due to pathogens or pollution present in the food. There are ongoing discussions about what is

safe enough and whose definition of safety should be followed” (Coff et al. 2008, p. 8). Rather than creating and distributing enough food resources for people, particularly the world’s poor, food safety is about ensuring that the food that people consume will not harm them. In what follows, I look into three different ways of conceptualizing biosecurity.

In contrast to food security and fitting under the umbrella of food safety, food *bio*security is often concerned with ways to keep agricultural systems and/or food productions systems free from pests and diseases. A first focus of food biosecurity within agricultural systems is the protection of production/producers from pests and other diseases and ways of limiting the impact of such pests. Ronald Atlas, the former president of the American Society for Microbiology and co-director of the Center for Health Hazards Preparedness at the University of Louisville, writes: “New Zealand, for example, published in August 2003 a biosecurity strategy aimed at economic, environmental, and health protection from pests and diseases. . . In this case biosecurity means trying to prevent new pests and diseases arriving and eradicating or controlling those already present” (Atlas 2005, p. 122).

A second understanding of food biosecurity is concerned with the defensive measures to be used and developed against agents that pose biological risk following consumption of the food: “The primary goal of biosecurity is to protect against the risk posed by disease and organisms; the primary tools of biosecurity are exclusion, eradication, and control, supported by expert system management, practical protocols, and the rapid and efficient securing and sharing of vital information. Biosecurity is therefore the sum of risk management practices in defense against biological threats” (National Association of State Departments of Agriculture 2001). The key difference between the first and second conceptualization is that the first conceptualization is primarily focused on risks to *producers*, while the second is focused on risks to *consumers*.

A third way of conceiving food biosecurity is in reference to *deliberate* attacks on the food supply, with attacks having intent to disrupt or

harm society. For instance, the Biosafety in Microbiological and Biomedical Laboratories (BMBL) Manual 3 defines biosecurity as “the protection of high-consequence microbial agents and toxins, or critical relevant information, against theft or diversion *by those who intend to pursue intentional misuse*” (Atlas 2005, p. 122, emphasis mine). Rather than conceiving food biosecurity by reference to the concerns of environment or agriculture, broadly construed, some discussions of food biosecurity focus instead on food production as a national security concern. In the context of national security measures, biosecurity means protecting biological resources against acquisition by terrorists.

Given these multiple conceptions around security and food, food security, food safety, and food biosafety, their use typically varies upon on the given area of discussion. That is, those concerned with equal distribution of resources are most likely to use references to food security, and those concerned with issues of quarantine and defense against pests are likely to consider references along the lines of food safety, while those interested in national security and protection against deliberate malicious use are most likely to be interested in food biosecurity.

On this third conceptualization, food biosecurity is concerned with acts of terrorism, warfare, or other malicious intent, which seek to disrupt and/or harm society and individuals through deliberate addition of toxic and/or disease causing agents into the food production system. It is this particular conceptualization that will be the focus for the remainder of the entry. Wherever convenient, however, in order to make the national security focus distinct from standard discussions in agriculture, the entry will refer to biosecurity of food systems, rather than food biosecurity.

Bioterrorism and Food Systems

The reason for a focus on biosecurity of food systems is that toxins and pathogens in food systems can cause massive social disruption and can

potentially harm or kill large numbers of people. The initial claim is that food and food supply chains are potential targets of bioterrorist activity. Coupling the potential lethality of certain food toxins and pathogens with the broad distribution from centralized processing points means that aspects of the food industry offer potential ways to “weaponize” food and/or its food delivery systems. Some claim that using food as a delivery method could produce the highest number of casualties of any bioterrorist act (W. Seth Carus, quoted in Von Bredow et al. 1999, p. 169).

An initial point to cover is if there is actually cause for concern about attacks on food systems. Seven days after the World Trade Center attacks of September 11, 2001, there was bioterrorist attack using anthrax spores that killed five people and infected another seventeen (N.P.R. 2011). While few deaths occurred, the so-called “Amerithrax” attack raised the specter of deliberate use of harmful microbial agents. In terms of targeting food systems, while the number of deliberate attacks on food systems is extremely low, there is at least one known bioterrorism attack on a food system. As described in the chapter “Influencing An Election: America’s First Modern Bioterrorist Attack” (McCann 2006, pp. 151–158), a group following the “guru” Bhagwan Shree Rajneesh attempted to change the outcome of a local election in the US town of Dalles in the state of Oregon. Starting on August 29, 1984, two city officials were intentionally poisoned with *Salmonella typhimurium*. Following this, 751 people were poisoned by *Salmonella*, intentionally placed in salad bars in ten Dalles restaurants. The ultimate aim of the attacks was to make enough people sick that such that their votes in the local election would bring about the culprit’s desired outcome. What the Amerithrax and Dalles examples show is that there are people with the motive to harm using biological agents, and there is proof of concept – food systems have been targeted.

In their discussion of potential tools of bioterrorism, Seumas Miller and Michael Selgelid discuss research programs that may confer resistance to antibiotic or antiviral agents,

enhance pathogen virulence, increase the transmissibility of a pathogen, alter a pathogen’s host range, and enable the weaponization of a biological agent or toxin (Miller and Selgelid 2008, pp. 19–26). Food systems present a potential delivery system for bioweapons and as such figure in an analysis of potential tools of bioterrorism.

Taking the threat of bioterrorism seriously, Lawrence Wein and Yifan Liu sought to predict the results of a deliberate poisoning of a milk supply equivalent to California with botulinum toxin. Botulinum toxin is not a standard food biosecurity concern. However, on Wein and Liu’s analysis, if left undetected, 1 g of the toxin could cause around 100,000 casualties, and 10 g could cause up to 568,000 casualties (Wein and Liu 2005, p. 9985). Furthermore, Wein and Liu’s modeling of botulinum in the milk supply “are applicable to similar food products, such as fruit and vegetable juices, canned foods. . .and perhaps grain based and other foods possessing the bow-tie-shaped supply chain” (Wein and Liu 2005, p. 9984). With such massive disruption and harm, food systems thus figure in national security discussions and are relevant to discussions of biosecurity.

Food System as Targets

Essential to the biosecurity concerns is the capacity for toxins in food to be rapidly and easily consumed by large numbers of people. Central to this are the methods of the industrial food process that allow toxins to be distributed to large numbers of people at a national and international level. In these systems, the food type (i.e., mince for hamburgers or dairy milk) is progressively concentrated into central processing plants, which then distribute the food product progressively out to more and more consumers. The key point here is what is called the “bow-tie-shaped supply chain” (Wein and Liu 2005, p. 9984), in which food supplies are concentrated and mixed at central processing points and then distributed out, forming a bow-tie-like shape.

The “bow-tie” model of food production refers to processes, whereby the initial food inputs are concentrated, centralized, and combined prior to broad dispersal. This bow-tie shape Schlosser argued (Schlosser 2003, pp. 195–197) was a key element in food-borne illnesses arising from consumption of hamburgers. A similar set of industrial processes have been implicated in the emerging information on the European horsemeat example in which horsemeat was effectively mixed through large numbers of food products and then distributed widely (Traynor et al. 2013). The relevance of these examples of food illness and food quality is to show that the bow-tie processes present certain food systems as a potential point of terrorist attack. Wein and Liu’s (Wein and Liu 2005) investigation showed that adding the botulinum toxin at key points in the food production system could have devastating impact.

Prevention of Bioterrorism: Food Traceability

In addition to problems of harm and food chain integrity are issues of national and international oversight. In one well-known example of food-borne illness, an *E. coli* O157:H7 outbreak in 1992 killed four and sickened 600 people (Roberts 2008, p. 182). Another outbreak of *E. coli* strain O104:H4 in Europe in 2011 had 3816 reported cases and included 54 deaths (Frank et al. 2011). This was ultimately linked to the consumption of uncooked vegetable matter, in particular, uncooked fenugreek seeds (European Food Safety Authority 2011). The 2013 European horsemeat scandal includes horsemeat from a Romanian abattoir, which was shipped to the Netherlands, and then a French processing plant, which was shipped to the UK for human consumption. These multinational food transport chains were initiated at a French meat fair, and the meat was traded by a company registered in Cyprus (Traynor et al. 2013).

Food chains are becoming increasingly complex – not only are food-borne illnesses spread across large populations, but also the distribution

chains and ownership of the trading partners can cover a number of different countries, each with a different set of laws. This can make it very hard and time consuming to track down the source of contamination. Often the harms can be mitigated by rapid and coordinated responses, but the more complex the practical and legal frameworks, the greater the security risks. The basic concern here is that the complexity of the systems of food production and distribution increases vulnerability of the systems to deliberate attack: the more steps there are, the greater the potential points of attack. Further, the increased complexity could increase the impacts: rapidly identifying the causal biological agent and the malicious actor(s) are both essential to mitigating the impacts of attack, and this identification is made much harder by the complexity of the systems and the pluri-jurisdictional nature of the modern food industry.

Essential to harm reduction is through rapid identification of the causal agent – here meant as the specific toxin that is harming people. Wein and Liu’s analysis suggested that, given the existence of a botulinum antitoxin, the harms from a botulinum outbreak in the milk supply can be mitigated through rapid identification of the toxin (Wein and Liu 2005). However, despite the importance of rapid organized responses, Schlosser describes the slow response of public health officials in the face of hamburger poisoning. Importantly, Schlosser shows that in response to the 1992 *E. coli* outbreak, Jack in the Box updated their safety practices and have since been free of any major repeats (Schlosser 2003, pp. 210–221). Control and verification would include checking of employees and the potential for malicious actors to access food production systems. Finally, consumers and indeed other government emergency and security agencies need to be rapidly and effectively informed of given risks resulting from malicious actions.

Underpinning these responses is traceability in food chains, traceability that operates rapidly across national and international regions. Food traceability is common in food production industry and is commonly required by national and international laws (Coff et al. 2008, p. 3).

The benefit of working with existing food traceability processes to aid in securing against deliberate attack is that this “retrofitting” can build from established practices and could plausibly reduce industry and worker opposition to additional oversight mechanisms. This is not to say that traceability systems are a panacea to biosecurity risks in food systems – given the relatively low likelihood of terrorist attack, such systems could divert resources from the likelihood of non-malicious contamination. Secondly, any oversight mechanisms and processes would need to be appropriate to the given sector of the food industry – preventing the addition of botulinum toxin to a milk supply is going to require very different oversight to securing a salad bar against *E. coli*.

That said, general methods that improve supply chain integrity, such as defining hazard analysis and critical control points (HACCP) (Roberts 2008, p. 183; Schlosser 2003, pp. 215–222), are likely to be useful across a range of practices. Moreover, such HACCP standards would need to include risk assessments of potential malicious activity. However, as the horsemeat scandal shows, such supply chain integrity and the capacity for rapid response to concerns are not currently assured (Traynor et al. 2013). Secondly, following Wein and Liu’s analysis, basic food safety training may not be enough – food supply chains need effective security measures too, to prevent against deliberate acts of harm. A problem here is who takes official responsibility for oversight, an issue made more complex by the frequent multinational supply chains. Finally, given the low levels of actual food bioterrorism, there are issues of whether the cost of securitizing the food chains through new HACCP protocols against deliberate attacks outweighs the risks of not responding.

Summary

This entry has raised biosecurity of food systems as an important area in the ethics of food and agriculture. It compared and contrasted food security with food safety, discussed different ways of

conceptualizing food biosecurity, and focused on biosecurity understood in a national security context. The entry then looked at biosecurity of food systems and showed why food systems are particularly concerning as targets of attack. It finally raised issues of food traceability and how biosecurity of food systems can figure in more traditional accounts of traceability.

Cross-References

- ▶ [Corporate Social Responsibility and Food](#)
- ▶ [Food and Health Policy](#)
- ▶ [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)
- ▶ [Food Security](#)
- ▶ [Food Security and International Trade](#)
- ▶ [Food Security and Rural Education](#)
- ▶ [Food Security in Systemic Context](#)
- ▶ [Food Standards](#)
- ▶ [International Food Quality Standards](#)

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a political process had been launched while the controversial technology was still in the pipeline. Moreover, the resulting regulation was widely believed to provide a social contract between the critical publics in Europe and those in favor of GM foods.

This contribution discusses the changing focus of political processes addressing biotechnology and GM foods. Starting with the first call for a regulation of biotechnology in the USA in the early 1960s, it tells a story about how policies in North America and Europe regarding a new and controversial technology have developed. Differences between Europe and North America regarding biotechnology policy styles and interpretations of “precaution” are addressed.

A key storyline is how policies reflect dominant framing of biotechnology as a hope, a risk, and a moral or ethical problematic technology. A mismatch between the way GM food was framed in the European biotech policies, excluding the ethical concerns of the European publics, is thus suggested as an explanation of Europeans resistance towards GM foods in 1996.

Biotechnology and Food Policy, Governance

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Synonyms

Controversy; Genetic technology; Governance;
Policy; Public perceptions; Regulation; Risk

Introduction

When the public in Europe turned against GM foods following first large-scale marketing of a GM crop – soy shipped from the USA – in 1996, many were taken by surprise. For once

From Facilitation of Hope to Governance of Risk

Until the late 1960s the politics addressing what is today loosely referred to as “modern biotechnology” reflected an inherited framing of these technologies. During this period modern biotechnologies were important elements of a modernization project in which the new technologies were seen as a future source of material prosperity and hope for society. Thus, private sponsors and public funding organizations in North America and Europe focused on funding research in biotechnology, facilitating the many promises. The technology itself lived a relatively unnoticed life, primarily in research facilities based in universities. The governance of these research activities was outside the public eye. As has been noted, the public policies that emerged in the 1950s remained largely uncontroversial until the late 1960s: modern biotechnology, together with other new and promising

technologies, was a new domain that would ideally facilitate economic development in society (Gottweis 1998).

This was true of the area of biotechnology concerned with DNA. Genetic biotech includes a range of different technologies working at the molecular level, manipulating or cloning existing hereditary material. After Watson and Crick's discovery of the structure of DNA in 1953 genetic technologies – or recombinant DNA technology, as it was referred to then – lived silently in the research laboratories. Although it was recognized that this new scientific domain provided insights into some fundamental questions about life and living organisms, genetic technologies were rarely if at all problematized in the public sphere or taken up in political discussions.

This changed when US scientists showed in the early 1970s that it was possible to join DNA from distinct species in a host cell and thus potentially manipulate the hereditary features of any living organism. The first reaction to this discovery came from some of the scientists involved. One of these was the US biochemist Paul Berg, who together with colleagues published what has become known as the “Berg letter” in *Science* in 1974 (Berg et al. 1974). In the letter they voiced their concern at the risk of creating novel types of infective elements with unknown and unpredictable properties with the technologies they themselves were involved in developing. The Berg letter called for a voluntary moratorium in rDNA research until proper safety procedures and regulation were in place. The following summer, rDNA technologies were once again debated at a conference in Asilomar, California. The outcome of this meeting was, on the one hand, a decision to lift the self-imposed moratorium and resume research in rDNA techniques and, on the other hand, a list of recommendations on safety procedures when handling rDNA in laboratories.

Although these early discussions addressed neither GM foods nor ethical issues, it is fair to say that the Berg letter and the recommendations produced at the Asilomar conference had huge impact GM food governance in the decades to come. The previous framing of genetic

technologies as an instrument of modernization was extended now; it came to include a critical component questioning the risks of negative impacts on human health and the environment. This new, additional risk framing influenced policy discourse significantly in the years to come. Thus, safety concerns were mirrored in the first efforts in GM regulation, namely, the guidelines for publicly financed research involving rDNA issued by US National Institutes of Health in 1976. Ten years later, the OECD issued guidelines on the way member states should handle biotechnology, expanding the concerns to cover consequences for the environment.

In the decades after the mid-1970s, new techniques, such as cloning and stem cell technology, were added to the portfolio of genetic technologies. The technologies moved from the research laboratories towards industrial application and marketable products. And following this the content of the risk discourse has changed – going beyond the initial concern about new health hazards due to infective elements, it has come to include concerns about the risks presented by, for example, GM plants and animals released (or escaped) into the environment and by unintended gene transfer between manipulated and wild species. Thus, risk became, and still is, an important part of the politics and regulation of the genetic technologies. This was reflected in political discussions in the 1980s which preceded the regulation of genetic technologies in the EU as well as its member states. These policy processes generally took place within a frame in which genetic technologies were seen as a useful technology with potential risks that needed to be regulated (Torgersen et al. 2002). The risk focus is evident also in two EU directives on contained use and deliberate release of genetically modified organisms adopted in 1990. In these directives the concerns addressed were limited risks to the environment and human health. Later, in 2003, the UN Cartagena Protocol on biosafety confirmed the importance of risk framing, taking the regulation of risks to the environment and human health to an international level (Secretariat of the Convention on Biological Diversity 2000).

At first glance, risks may seem to have been, if not the only, then the dominant framing of biotechnology policies in the 1980s. It is important to remember, however, that this new problematizing discourse existed alongside other policy discourses rooted in the framing of biotechnology as promise. Although these other frames were not as manifest as the risks, a great deal of biotech policy in both Europe and North America was still about facilitating research and development. Within the European Framework Programs supporting research and development, for example, massive sums were reserved for the research and development of genetic technology and other biotechnologies. An important element in this was financial support for basic research and its applications in the food industry.

In addition to direct financial support of the research and development of biotechnologies in the agri-food sector, policies have also addressed the barriers to industrial applications and to the marketing of ingredients and food products based on research results. In part, such policies have been aimed at settling intellectual property rights and in that way securing investment in the research and development of food biotechnologies. At the core of these discussions lay questions about the interpretation, or nature, of inventions and about whether living organisms are patentable. The questions were first settled within the national and supranational patent institutions and only later in EU directives.

A key event in the patent disputes was the Chakrabarty case in the USA. In 1982 the Supreme Court ruled that patentability depends on human intervention. This decision paved the way for the patentability of genetically manipulated plants and later animals. Likewise, in 1983 the European Patent Office granted Ciba-Geigy the right to patent seeds genetically manipulated to be herbicide resistant. During the following years the patentability of genetically manipulated living organisms was the subject of intense policy discussions in the EU. These finally ended with the adoption of a Patent Directive in 1998 which stated “Inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular

plant or animal variety” (European Parliament and Council 1998). The Chakrabarty case, the Ciba-Geigy decision, and the EU directive all mark a break with the so-called “product-of-nature” doctrine that had previously informed people’s thinking. According to the product-of-nature doctrine, patentability cannot be granted to objects found in nature (Davis 1995).

Reframing GM Foods as an Ethical Issue in EU

In the early 1990s regulatory systems had been set up on both sides of the Atlantic in order to mitigate side effects on human health and the environment. In the USA, regulation of GM foods was based on the fundamental principle that genetic technologies are comparable with other technologies and do not themselves raise particular concerns. Following this logic, risks were handled in the USA within the existing regulatory framework, which focused on products. This so-called “product-based” regime was different from the more “process-based” regulation in Europe (Jasanoff 2005). Hence, Europe exercised a more precautionary approach – and one presupposing that genetic technology, in its nature, differs from other technologies and requires specifically tailored regulation. The process-based regulatory strategy resulted in the adoption of two EU directives specifying how member states should ensure the regulation genetically modified organisms. One directive regulated the deliberate release of GMOs into the environment (e.g., in agriculture). The other regulated enclosed use of GMOs in, for example, industrial facilities.

It is characteristic that in Europe as well as in North America, policy discourses on GM foods and agriculture largely excluded wider ethical or moral concerns until the mid-1990s. The omission of ethics in the political discourse cannot be explained by an absence of ability, or will, to discuss ethical aspects of modern technology. Other uses of technologies directly involving humans – e.g., in vitro fertilization and abortion – engage a long tradition for concern about the

ethical aspects of medical technologies. Similar observations could be made about genetic engineering, where wider ethical questions had largely been reserved for applications involving humans. By contrast, applications for use in agricultural and food production were by and large kept within the risk frame.

The situation in the early 1990s in Europe was that a regulation believed to meet the concerns of the public, and at the same time facilitate the use of the new genetic technologies in agriculture and food industry, was in place before the first large-scale marketing of GM foods in Europe. To some extent, this may have been a lesson from the introduction of nuclear power, the other major and controversial technology developed and applied in the postwar years, and one that appeared a few decades before GM. In many countries nuclear power was introduced without taking public concerns about the risks into account – and the result was, in many cases, lasting social conflict. Thus, the directives can be seen as part of a between a concerned European public and the agri-food sector, hoped to ensure a peaceful application of the technologies.

In the autumn of 1996, the spell was broken. This happened when the first large-scale marketing of GM foods in the shape of GM soy took place in Europe. Despite the fact that the shipments only contained about 2 % of Monsanto's Round-Up Ready Soy, genetically manipulated to resist the herbicide Round-Up, consumers in several European countries reacted with demonstrations and consumer boycotts. In spring 1997, shortly after the soya issue peaked, the birth of Dolly, a cloned Dorset ewe, was announced. Although, strictly speaking, Dolly was a medical application of biotechnology, the mere fact that scientist now had demonstrated that cloning was possible revived and fuelled controversy over GM foods, particularly in Europe.

In many ways, the second half of the 1990s marked a transition away from a European political discourse on GM foods, which, at the programmatic level, now also included some of the concerns previously excluded. It is striking that there were almost no studies of public

perceptions in the 1980s. Up to, and indeed following, the reappearance of the controversy, several qualitative and quantitative studies showed that, beyond risk and usefulness, public concerns now centered on ethical issues, as well as questions about transparency in democratic decision-making (e.g., Marris et al. 2001; Lassen and Jamison 2006; Gaskell and Bauer 2002). Some studies even found that the ethical concerns had a veto-like nature (Wagner et al. 1997 and Ten Eyck et al. 2001). Others stressed the existence of a strong public voice demanding evidence of the specific societal usefulness of GM foods before they could be accepted – economic benefits to companies and individuals were not enough (Lassen et al. 2006).

Irrespective of the way public concerns over GM foods were analyzed, many of the studies supported the conclusion that the reappearance of the European controversy over GM foods was the result of a mismatch between national and EU policies and the nature of the public concern. At the political level the controversy, and the reframing of GM foods, resulted in a de facto moratorium in which a decisive majority of member states blocked approval of new GM foods in the EU in 1999 (Levidow and Carr 2010). The moratorium was lifted in 2004 following a revision of the EU regulation requiring traceability introducing a possibility of requesting nonmandatory consultation of the Commission's committees on ethics.

Although this development illustrates the reframing of policy discourse on GM foods, the fact that the results of ethical consultation are not legally binding does not seriously challenge science-based decision-making over GM foods which still focuses on risks. Meanwhile the EU Commission has proposed a revision of the existing legal framework, making it possible to combine science-based risk regulation “with freedom for Member States to decide whether or not they wish to cultivate GM crops on their territory” (European Commission 2010). Although the Commission stresses the importance of securing coexistence for GM, conventional and organic production systems, and what they call the member states’ “regional and

national specificities,” it is far from clear to what extent the proposed revision would enable member states to include wider ethical concerns.

Transatlantic Battles over the Precautionary Principle

GM foods are not only subject to national regulation in individual countries and legislation at EU level but also governed by the treaties regulating international trade. Once GM foods arrived at the market, during the 1990s, and exported, it was clear that the national and EU regulations were not necessarily in accordance with the principles of international trade laid down in treaties within the WTO system. These tensions were demonstrated in the dispute between the USA, Canada, and the EU over North American exports of beef from cattle treated with recombinant growth hormones to EU markets in 1998. They arose again in 2003 when the USA, Canada, and Argentina challenged the *de facto* EU moratorium imposed following the soya crisis. Both cases demonstrated a conflict between European governance of GM foods, stressing precaution, and the American, less precautionary, approach (see Anker 2012 for an elaboration of the WTO controversies and the role of the precautionary principle).

In essence, the precautionary principle stresses that in cases where the available scientific data do not allow a complete evaluation of the risks, decisions should respect the uncertainty. With reference to the precautionary principle, the EU banned the import of recombinant bovine somatotropin (rBST) meat in 1987, claiming that some uncertainty existed regarding the risks it presented to humans – a decision opposed particularly by the USA, who successfully challenged the import restrictions before the WTO in 1997. The complaining countries insisted that existing risk assessments cleared the rBST meat of risks to humans and demanded that the EU give up the ban. Similarly, the EU was challenged before the WTO on the *de facto* moratorium. Although both cases challenge the

EU’s right to regulate GM foods using the precautionary principle, this does not mean that the precautionary principle is not accepted outside EU. Both the Rio Declaration and the WTO system include interpretations of the principle (Anker 2012). Thus, the disputes are rather about the level of uncertainty required before a nation, or region, can claim a right to regulate trade and production and whether the alleged uncertainty is purely theoretical or has scientific backing.

Involving the Public

During the 1980s genetic technologies moved from the stage of basic research towards applications in agriculture and the food industry. The first applications, illustrating what was to come, were seen in the 1980s; they included uses of the genetic technologies in enclosed industrial facilities producing, for example, enzymes and other processing aids for the food industry. Also field trials of manipulated plants with new properties, such as crops that were resistant to pesticides, took place during the 1980s. This move from the laboratory to applications in the agri-food sector happened alongside increasing political awareness of the necessity to govern science and technology.

As noted above, discourses about science and technology were, in the years following the Second World War, generally positive. Optimism prevailed and science and new technologies were typically framed as means to wealth and societal progress. This resulted in a *laissez-faire* policy. During the 1960s and 1970s, an increasing number of reports, however, documented negative impacts of the industrial society on health, the environment, working conditions, and so on. Following this, it was gradually recognized that technological developments were in some cases accompanied by risks and undesired side effects that had the potential to cause social controversies.

Following this awareness of potential societal conflicts over technologies, technology

assessment emerged as a new discipline during the 1970s. Technology assessment was seen as a tool facilitating the development of adequate policies for handling, or preventing, the negative impacts of new technologies. In assessing and predicting positive as well as negative consequences, the aim was to improve the basis of decision-making and, not least, to identify potential areas of future controversy. Since this took place while genetic technologies were migrating from the research labs towards industrial and agricultural application, these new technologies were subject to intense monitoring and assessment.

Initially, technology assessment of genetic technologies was based primarily on expert consultations. The US Office of Technology Assessment, established in 1972, led this trend. For example, it introduced “consensus conferences,” at which groups of scientific experts were gathered and asked to reach a consensus on a given issue. During the 1970s and 1980s, most assessments of genetic technologies followed this expert trend. The interpretation of public reservations about genetic technologies, and thus the explanation of the pending controversy, was that the public were laboring under scientific illiteracy. This “knowledge-deficit” approach resulted in recommendations urging policies which, besides stimulating research and regulating the risks, aimed at informing and educating the public about the “true nature” of genetic technology. The expectation was that increased information would fill in the knowledge gap and result in acceptance of the technologies – an idea that has been challenged by survey results indicating that opposition is often greater in countries with high levels of knowledge (Biotechnology and the European Public Concerted Action group 1997) – suggesting that the relation between attitude and knowledge is more complex.

Critics of expert-based assessments and the knowledge gap, however, argued for a technology policy that also included lay assessments (Schot and Rip 1997). During the 1980s this resulted in the development of technology assessment into a more participatory discipline,

and since genetic technologies were among the most hyped and controversial technologies at this time, they were assessed in terms set by this new discipline. The new, more participatory approach to technology assessment that was applied in many countries all over the world was initiated and first institutionalized in European countries with a stronger tradition of participatory democracy. Thus, institutes like the Dutch NOTA, later the Rathenau Instituut, and the Danish Board of Technology were the nexus of developments of a number of participatory tools involving the public more or less directly in decisions about genetic technologies and other technologies. In addition to existing sociological methods only facilitating indirect participation by means of focus group interviews, or surveys, these institutions developed new methods that see participation as an interaction between decision makers and the public. Rather than changing and educating the public, this new approach aims to accommodate the genetic technologies to public concerns.

By 1996, as the soya case hit Europe, it was clear that there was a mismatch between risk-focused policies and the worries people had in many European countries. Among the many participatory initiatives launched over the following years, as means to understand and handle this situation, were genuine participatory activities, like public hearings, citizen forums, Delphi studies, and consensus conferences, inviting the public to participate in a more direct way in the policy process. One of the more noticeable activities was GM Nation, launched in the UK in 2002. The aim of GM Nation was, on the one hand, to promote a deliberative process leaving the framing of GM issues to the public and, on the other, through this, to inform the Government’s decision-making.

While it is hard to pinpoint any direct and measurable effects of the participatory activities on GM food governance, there is little doubt that there has been an indirect impact. Thus, participatory methods have given the public concerns a voice in the policy discourse on GM food and contributed to discursive changes. Earlier ethical

concerns were largely confined to policy discourses covering in vitro fertilization, human cloning, gene therapy, and other human or medical applications of the genetic technologies, while policy discourses on GM foods were limited to risks and benefits. Since the mid-1990s, particularly in Europe, GM foods have been framed increasingly as an issue also including ethical aspects. Thus, although risks and economic benefits remain the dominant frame, new aspects addressing naturalness, integrity, distributional justice, and responsibility pop up from time to time alongside discussions demonstrating a tension between sheer economic and broader societal benefits.

Governance “Making GM Foods Happen”?

From their humble beginnings in the 1960s, the policy processes around GM foods have been, in effect, a means of making biotechnology happen (Jasanoff 1995). Apart, perhaps, from the first anxious reaction of scientists in 1974, the genetic technologies have rarely if ever been seriously challenged in the policy process. Rather the aim has been to find a way to tailor the technologies to society by setting up regulations shaping their use and by making sure that public concerns are met. It can be argued that this has been carried out with some success with the construction of science-based risk assessments. However, it remains uncertain to what extent public concerns about issues other than risks can be handled. Despite attempts to manage these ethical issues, they are still largely left to market-based governance, and as long as the regulation of ethics rests with the market, the risk of controversy reemerging must surely loom large.

Summary

The governance of genetic technologies used in food production has, since its beginning, aimed to facilitate the development and application of these new and promising technologies as part of

an ongoing modernization project. On the one hand, this has been realized by policies supporting research and development and paving the way for the food business. On the other hand, policies have addressed the many concerns about unwanted side effects of the technologies and established regulatory frameworks controlling these. This governance of side effects has moved from a focus on safety and human health in the early 1970s, over risks to health and the environment in the 1980s, to include broader ethical concerns in the years following 1996.

Although the overall aim of facilitating the development and application of GM food technologies has been shared by policy makers in North America and Europe, the regulatory setups are different across the Atlantic. In the USA, for example, regulation of GM foods is based on the fundamental principle that genetic technologies are similar to other technologies and should be handled within the existing regulatory framework. This product-based regime is different from the process-based approach taken in Europe, which sees genetic technology as different from other technologies and thus as something requiring its own regulatory framework. In addition, Europe has taken a more precautionary approach to governance than the USA. And Europe, unlike the USA, has striven to include ethical aspects in regulation. So far, however, this has not resulted in binding regulations. By and large, ethical concerns have been left to be regulated by markets on either side of the Atlantic – leaving the door open to a revival of the public controversies of the 1980s and 1990s.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Canada, US-EU Beef Hormone Dispute](#)
- ▶ [EU Regulatory Conflicts over GM Food](#)
- ▶ [Herbicide-Resistant Crops](#)
- ▶ [Intellectual Property and Food](#)
- ▶ [Multilateral Trade Organizations, Food, and Agriculture](#)
- ▶ [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Body Image, Gender, and Food

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Synonyms

Consumption; Embodiment; Identity; Representations

Introduction

While human bodies must consume food to live, lives are organized around the actual harvesting, gathering, preparing, and eating of food. These practices, particularly consumption, are deeply cultured and gendered. The ranges of appropriate body sizes and shapes are also highly gendered. In the USA, men on average are 5.5 in. taller and 29.3 lb heavier than women (CDC 2012b). Though not all men are larger nor all women smaller, they are expected to be based on feminine and masculine body ideals. Most people strive for socially and culturally normative body sizes.

The presentation of self as a gendered person is achieved through the use of markers and symbols, including clothing, hairstyles, and jewelry. Humans manage their interactions with others

using behavior and physical activities considered appropriate for one's sex category (Goffman 1959). Internal and external body image, its size, shape, contours, and ornamentation, is inextricably tied with the essential biological need to consume food as well as the validation of body presentation. Globally in heterogeneous cultures, bodies are dichotomously depicted and presented as male, whereby a body will be muscular, hairy, large, tall, and solid, or as female, whereby a body will be slender, smooth, hairless, petite, and slight. Those falling outside of the gendered descriptions of body size and appearance are often in the challenging position of sculpting, controlling, starving, or enhancing their bodies for the preferred male or female presentation of self. This entry covers the definition and ethics of body image, gendered relationships with food, disordered eating across the globe, Pro-Ana Movements, and Fatness Studies.

Body Image

Body image is defined as a person's self-perception of his or her own body. Internal body image refers to the way someone feels about his or her own body; this is psychological. External body image is how others perceive and react to bodies; this is sociological. There is an ongoing interaction between the psychological and sociological perspectives of body image, which are inextricably linked: a person's internal body image can be vastly different from their external body image. The disconnect between what is perceived about the body and how the body publicly appears has largely been accredited to sociological factors, particularly different media representations of the ideal body (Grogan 2008).

People absorb revered and stigmatized images of different bodies through friends and family or via media including television, magazines, and the Internet. Constantly bombarded with these images of bodies, individuals are influenced to judge and consider their own perceived flaws and develop body projects (Brumberg 1997) to manage these "problems." Men and women work to achieve an idealized body image and reap the

rewards of prestige, attention, or accolades in the form of positive social sanctions. One of the primary ways individuals discipline human bodies to better reflect the "ideal" body type is through the selection of food and eating habits.

The consumption of food and management of weight and body size are how body image is regulated. Furthermore, part of maintaining an acceptable body image goes beyond one's physiological shape and involves bodies acting in a culturally and socially regulated way through table manners, portion control, and expression of tastes. Seemingly trivial movements such as the way one walks or holds a fork are not merely how the body functions but also cultural imprints which adapt to norms of gendered, racialized, and classed bodies (Bordo 1993).

Gendered Relationships with Food

Food is one of the ways to express identity and group membership – as cultured or raced, as gendered, and as part of a social class. Although consumption is universally human, the ways people eat and what they chose to eat are not universal; eating practices and preferences are culturally produced (Lupton 1996; Kluger et al. 2004). Food advertisements take advantage of the need for food in ways that appeal to specific groups of people. Men and women have been socialized to eat differently. Originating with prehistoric ideas of men as hunters and women as gatherers (Sobal 2005), eating habits and ideas transcend generations by the actions and diets of older men and women which are passed down to their children and then to their children's children. Individuals often mimic the performances that receive favorable reaction and engender generations of similar performances (Goffman 1959).

Gender can dictate the type of food that a person eats. Men are shown overwhelmingly to eat more meat and protein-based diets, in part because many societies prioritize their nutrition over that of women (Adams 2000; Lockie and Collie 1999; Rogers 2008; Nath 2011). Men also are shown and expected to eat more meat because of what animal flesh symbolically represents.

Eating meat has come to represent human's superiority over other animals because of its representation as a masculine food (Adams 2000). Eating animal flesh is used as a display of power over other animals, supposedly proving human's strength (Fiddes 1991). Though these ideas are perpetuated daily, researchers have found flaws in their fundamental accuracy. Meat as a representation of masculinity, power, and strength contradicts with what meat actually does to the human body. Despite new scientific studies that connect the consumption of red meat to coronary heart disease, eating meat, is still dominantly considered a means to strength, health, and virility (Nath 2011; Lockie and Collie 1999). The consumption of meat has moral implications beyond its masculine representation. Philosophers debate the ethical concerns of eating meat and other foods (Kaplan 2012).

It is no coincidence that the foods marketed to women are often described as healthier and are associated with weight loss. The grand narrative of advertising food to women in high-income countries is thinness. One of the most common foods targeted at women is yogurt. Yogurt is largely considered a healthy food option. Yogurt commercials often feature dessert flavors: Boston crème pie and strawberry cheesecake. Dieting women routinely deny themselves such foods as pie and cheesecake in order to maintain the elusive "perfect body." This denial of food is culturally specific, often resonating in upper- and middle-class women whose food supply has never been jeopardized (Lupton 1996; Counihan 1998; Allen and Sachs 2007).

Feminist scholars suggest using social, historical, and physical environment factors to explore gendered food and body image issues. Women and girls' relationship to food and their bodies have many influences beyond being ultrathin, including participation in sports, stress, and access to food (Yancey et al. 2006).

Disordered Eating

Eating disorders, disordered eating, and eating disturbances are terms used to identify clinical

manifestations of skewed body images and psychologically categorized pathological eating practices. In the USA, the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) describes four main categories of eating disorders. These disorders include anorexia nervosa, self-starvation; bulimia nervosa, bingeing and compensatory behaviors such as self-induced vomiting; binge eating disorder, recurrent episodes of eating significantly more food in a short period of time than most people would eat under similar circumstances; and eating disorders not otherwise specified (EDNOS), any combination of signs and symptoms typical of anorexia and bulimia (American Psychological Association 2013).

It is estimated that up to 24 million people in the USA suffer from an eating disorder, including anorexia nervosa, bulimia nervosa, and binge eating disorder (ANAD 2013). Up to 70 million people suffer from eating disorders around the world (Renfrew 2003). Surprisingly, in industrialized countries, eating disorders have the highest mortality rate of any psychiatric illness, yet they garner the lowest funding towards prevention, education, and research (NEDA 2013). Many insurance companies do not cover treatment. Insurance that does cover treatment often has strict regulations for qualification that are not met until the eating disorder is highly developed. This time lag is especially problematic because studies overwhelmingly show eating disorders are harder to treat the longer they are present (Dias 2003; Peebles et al. 2012).

Most people who are clinically diagnosed with the illness never fully recover (Boero and Pasco 2012). Studies of eating disorders largely focus on women, and erroneously there are long-held beliefs that men do not have eating disorders. Men comprise 10–15 % the total number of anorexia and bulimia cases in the USA (ANAD 2013). Studies have shown that men and women suffer from binge eating in similar numbers. Men seem to be more dissatisfied with their bodies when their body weight and height fall below average (Strother et al. 2012). Their body image dissatisfactions and how they suffer from these disorders reflect larger societal pressures (Weltzin et al 2005).

Men are more likely to become obsessed with exercise because muscular toned bodies are the hegemonic masculine ideal. Muscle dysmorphia is characterized by preoccupation or obsession with muscularity and most prevalent in men, resulting in the use of anabolic steroids and growth hormones. One study suggests that the percentage of men using these substances is similar to the percentage of women with anorexia and bulimia (Strother et al. 2012).

Women in other countries, both developed and undeveloped nations, are influenced by the US standards of ideal body size. Globalization has been blamed for body image dissatisfaction and eating disorders in countries outside of the USA. Women in Fiji idealized the ultrathin body for what it represents – material wealth and a consumer lifestyle – but they did not find the thin body attractive in itself (Edmonds 2012). A study in highly Westernized Belize found that despite the high prevalence of US media, the country had no clinically significant eating disorders. A local tradition of caring for one's own body may protect young girls from eating disorders (Edmonds 2012).

Even though there are countries that defy the assumption that Westernization causes body image problems and eating disorders, there are many studies that show an increase in eating disorders outside of the USA. A study in Navarra, Spain, found that in an 18-month period, 4.8 % of a 2,509 sample of women ages 13–22 developed an eating disorder (Lahortiga-Ramos et al. 2005). Most research of eating disorders and body image is conducted within the USA, a country thought of as the root of global body dissatisfaction. Significantly, Argentinians and Brazilians have increasing rates of body dissatisfaction. It is estimated that 10 % of Argentine adolescent girls suffer from some sort of eating disorder. Brazil has the highest per capita use of diet medication in the world (Forbes et al. 2012).

There are many difficulties in studying the epidemiology of eating disorders because individuals suffering from eating disorders often hide their struggle and attempt to conceal their illness from doctors, families, and friends. This secrecy and shame makes community studies of eating

disorders challenging and often inaccurate. Therefore, researchers base their analyses on medical records to ascertain the incidence and prevalence rates. While this technique may provide some information, it is likely that statistics about eating disorders are underestimated (NEDA 2013; Smink et al. 2012).

Studies of cultural, ethnic, and racial determinants of eating disorders and body image, mostly conducted on US-based populations, largely focus on comparative analysis of white and black women. One notable difference in body image revolves around perception. White women are found to be dissatisfied with their bodies when their weight falls into average or below average categories. Black women do not have eating disturbances until they are in overweight categories, if at all. White women suffer from anorexia and bulimia more commonly, and black women suffer from binge eating and obesity.

Many researchers believe that part of the reason black women are often heavier than white women is because they are fighting multiple oppressions and are comforted by food (Lovejoy 2001; Feinson 2011). Overall, researchers find that black communities are more accepting of different body types as attractive, resulting in fewer black women being driven to extremes to achieve unattainable thinness (Kelch-Oliver and Ancis 2011). There also seems to be less pressure from family, friends, and romantic partners to conform to Western standards of beauty (Jefferson and Stake 2009).

A study of adolescent Ecuadorian girls explores the pressure felt to both be “Western beautiful” and beautiful within their own culture. In interviews, the girls gave descriptions of beauty coinciding with Western ideas. Only women with very light or white skin and Caucasian features are recognized as the ideal beauty. The participants judged real women less harshly than models and celebrities, using the Ecuadorian word “arreglada,” meaning “well groomed,” to describe beauty. As long as the woman puts effort into her appearance and has a good heart, she is generally thought of as beautiful (de Casanova 2004). The Western hegemonic depictions of

unrealistic ultrathin models have the potential to affect women and girls globally, resulting in body image dissatisfaction and confusion.

Pro-Ana Movements

Open dialogue websites made and used by women suffering with eating disorders have become a subject of interest over the past decade. The websites often include advice, images, discussion boards, videos, and audio that explain and encourage a lifestyle that integrates eating disorders. Part of engaging in these websites involves developing an online persona. These websites, referred to as “Pro-Anorexia” or “Pro-Ana,” have been deemed problematic because of their positive reinforcement of eating disorders. Many images of models and celebrities are presented as “thinspiration.” These images are often criticized as harmful and triggering, yet Pro-Ana websites are only one of many places that pictures of extremely thin models are displayed (billboards, magazines, etc.). Importantly, many women who are often very secretive about their eating disorders in public are very open about it online, resulting in two different identity performances.

These websites, accessed by anyone with the Internet, provide a space for them to discuss their issues with others who have similar problems, free from judgment (Borzekowski et al. 2010). Many of the websites have disclaimers before entering, stating that they are only meant for people who have eating disorders. Weigh-ins, posting photographs, and food journals are all used to discourage less involved users. The users of these websites struggle with bringing their real-life bodies into a disembodied space. The community is built by those who successfully display themselves as “real” anorexic bodies (Boero and Pasco 2012).

Women with eating disorders are often thought of as “irrational” and “in denial” of their behavior. The narratives on Pro-Ana websites contradict these statements. Many women claim to be self-aware and are making attempts to address their disordered relationship with food. Women realize

the “perfect body” is virtually unachievable, yet still aspire to it. Treatment for eating disorders is highly flawed in the USA.

Fatness Studies

The proliferation of an idealized thin body type is completely incongruent with real-life global bodies. According to the World Health Organization, over 50 % of the women in the regions of North America, Europe, and Eastern Mediterranean are overweight. The majority of the world lives where more people die from issues associated with obesity rather than malnourishment (WHO 2013). Fat bodies receive a comparable amount of attention as thin bodies, but in very different ways. Fat bodies are harshly criticized in the media, by the medical industrial complex, and within the general population. While fat bodies are regularly seen in public, they are rarely seen in the entertainment media, and when represented they appear as the abject body. These bodies are medicalized as unhealthy and layered with stigmatized terms such as lazy, careless, and stupid.

Fat bodies have not always been depicted as unhealthy and undesired. They once symbolized wealth and prosperity, signifying access to an abundance of food rather than having to struggle for it. Somewhere between the 1880s and 1920s, messages about fatness changed from healthy and beautiful to unhealthy and unattractive (Rothbum and Solovay 2009). Since then, fat bodies have seen a steady increase of negative attention (Gilman 2008). Fat bodies are considered a risk to themselves as well as a drain on limited public resources, as fatness is associated with illness and disease such as diabetes and heart conditions. Individuals who are fat have reported being denied healthcare or forced to pay a higher medical premium. They are also subject to discrimination in the workplace, often not hired for physical jobs and/or jobs that interact with the public (Berg 2008).

Personal responsibility overshadows class, ethnic, and social explorations of body size. Many of the determinants that foster weight gain are rooted in industries and everyday life

practices that are difficult to challenge. Many people work at jobs that require them to sit at a desk for the majority of the day without any physical activity. Food industries supply readily available, very cheap, and very unhealthy food (Lupton 2013).

Though being extremely overweight, or in medical terms “morbidly obese,” can cause some health problems, the obsession with fat bodies as a sign of unhealthiness is often unbalanced. Researchers opposing the medicalization of fat bodies explain that there is no statistical evidence that equates fatness with ill health or disease and there is no evidence that losing body fat improves a person’s health status (Lupton 2013). Fat bodies are constantly bombarded with images of ultrathin women and how they got to be that way. Diet and fitness magazines never display fat bodies but are always talking about them (Kent 2001).

In popular culture, fat bodies are consistently kept invisible. They are only shown if they are trying to become thin: “before” pictures in dieting ads and in the newly popular weight loss television series. Fat bodies are never shown as “normal” media characters or as successful, sexy, or in charge (Kent 2001). Yet, over one-third of the US population is considered obese and 69.2 % of Americans are considered overweight (CDC 2012a). The lack of positive images of fat bodies serves a purpose. Fat bodies are left to feel isolated and unworthy. When they are displayed, it is only to show that there is a way to change: to choose this diet, to buy this supplement.

The stigmatization of fat bodies is justified by the idea that thinness is preferred, healthy, universally achievable, and natural. Even if eating healthy and exercising regularly were an infallible way of achieving a thin body, there would still be challenges. Healthy food costs more money and time than unhealthy food. Food insecurity is described as the inability to acquire nutritionally adequate and safe foods (Smith and Bloomberg 2008). It has been acknowledged that lower socioeconomic areas lack access to healthy, affordable foods (White 2007). These areas often have limited access to large supermarkets, causing people to rely on smaller shops,

convenience stores, and fast-food restaurants. The food obtained at these places may relieve hunger, but often lack nutritional value (Smith and Bloomberg 2008).

To counter the oppression of fat bodies, a movement of size acceptance has emerged out of feminist and queer liberation movements. Feminists have been advocating for fat bodies for decades, discussing why fat bodies should not be disparaged (Kent 2001). Acknowledging that fat bodies are not necessarily unhealthy would also help in the acceptance of larger and different bodies. A grassroots movement of healthcare workers, researchers, consumers, and activists has been trying to shift the idea of what a healthy body looks like. Health at Every Size (HAES) emphasizes healthy everyday practices and body acceptance. The actual weight and size of a body is not as important as its overall health (Burgard 2009; Lupton 2013). Many groups and individuals protest the discrimination of fat bodies. They believe size diversity among humans is natural and should be celebrated (Berg 2008).

Summary

Body image is continuously changing throughout the world. A person’s external appearance converges with his or her eating practices to help form an identity. Eating and producing food is not as simple as acquiring nutrients; its symbolism is powerful and morphs and adapts through time.

Cross-References

- ▶ [Eating Etiquette](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Ecofeminist Food Ethics](#)
- ▶ [Food Addiction](#)
- ▶ [Food and Choice](#)
- ▶ [Food-body Relationship](#)
- ▶ [Gender and Dieting](#)
- ▶ [Gender Norms and Food Behavior](#)
- ▶ [Obesity and Responsibility](#)

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Brazilian Agriculture

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Synonyms

Agriculture in emerging economies; Brazilian farming; Farming in the global south; Latin American agriculture; South American agriculture

Introduction

Brazil is one of the world's largest agricultural producers and exporters. Vast areas of arable land, rich natural resources, sophisticated research and technology, and highly developed domestic and international markets nurture a highly modernized agriculture industry. This agricultural juggernaut exists alongside (and competes with) a vibrant peasantry that persists in the Brazilian countryside and produces much of the food that is consumed domestically. Brazil's primary commercial crops include soybeans, sugarcane, beef, poultry, cotton, orange juice, and coffee. Important domestic food crops include manioc, wheat, corn, rice, and a vast array of fruits and vegetables. Agricultural production has risen dramatically in the last two decades, particularly in the soy and sugar sectors, as global demand for animal products and biofuels has skyrocketed. These changes in the agricultural economy in Brazil have raised a number of ethical issues. One of the most contentious within Brazil is access to and distribution of land between big agriculture and the peasantry. Violent conflicts over land often grab headlines in the Brazilian media. The illegal use of slave labor on large farms has also become a very public issue, and while the federal government has stepped up enforcement in recent years, tens of thousands of workers are still estimated to be working under slave-like conditions. Finally, Brazil is home to over 60 % of the Amazon rainforest, and the country's agricultural frontier presents a constant threat to the integrity of that ecosystem. Because the Amazon is considered the "lungs of the world," and because so many countries depend on Brazilian exports for domestic food security, many of these ethical questions are considered global issues by the international community. This essay will discuss these issues in the context of some of Brazil's most economically important agricultural commodities: coffee, sugar, soy, cattle, and horticulture. Each case provides a unique perspective on the ethical controversies described above and reveals the complexity of Brazil's agricultural landscape in a different way.

Overview of Brazilian Agriculture

There are three main commercial agricultural regions in Brazil, each with its own production profile and political-economic structure. The southern region is dominated by medium-sized commercial farms that produce crops primarily for the domestic market. The northeast produces mostly horticultural products (fresh fruits and vegetables or FFV), sugar, and coffee. The center-west is home to massive sugarcane and soybean farms (which increasingly intercrop with corn) that almost exclusively serve the export market. Alongside large-scale commercial or *latifundio* agriculture, small family farms (*minifundio*) remain an important part of the Brazilian economy. According to the Ministry of Agrarian Development, “family farming produces 70 % of food consumed in Brazil, occupies 25 % of the country’s cultivated area, generates 75 % of jobs in rural areas and accounts for 84 % of establishments in rural Brazil” (Ministerio do Desenvolvimento Agrário 2012).

The tension between large-scale, export-oriented farming and smaller-scale, domestic-oriented (or even subsistence) farming is one of the main animating dynamics of the Brazilian agricultural system. These two agricultural paradigms have coexisted since colonial times but are often locked in conflict over access to land and government resources, as well as social legitimacy and justice. Brazil’s two different ministries of agriculture (the Ministry of Agriculture, Livestock, and Food Supply and the Ministry of Agrarian Development) exemplify the political division between the two modes of production. Though separated in the Brazilian political structure, these systems profoundly impact one another, and their relative contributions to functions and priorities in Brazilian society are a matter of fierce debate.

Brazilian agriculture also finds itself at the center of global environmental and human rights debates. Brazil is one of the last places on earth with significant amounts of undeveloped land that could be converted to agriculture. However, those same areas also boast some of the most biologically diverse and sensitive ecosystems on

the planet. As “food crises,” or dramatic spikes in food prices that occur due to commodity speculation and supply disruption, have become increasingly frequent and severe over the last decade, Brazil has become a focal point for the debate over the future of the global food system. In 2009, the UN predicted that global food production would have to double by 2050 in order to keep up with the rising global population and, perhaps more importantly, rising incomes and the increased consumption of animal protein that often results (United Nations 2009). As people around the world eat more meat, Brazil responds by producing greater quantities of soybeans and corn to feed livestock. Expanding demand for biofuels puts similar pressure on sugar markets, and the continuing profitability of cotton and beef intensifies the competition for land among these primary industrial commodities. These large monoculture *fazendas* run on hired labor, and although the vast majority of *fazendeiros* treat their workers fairly, every year the Brazilian government continues to find thousands of rural workers being held against their will in slave-like conditions (Associated Press 2012). All of these controversial questions, which will be discussed in more detail below, shape the dynamics and trajectory of Brazilian agriculture and render the sector one of the most important sites of social inquiry today.

A Brief History of Brazilian Agriculture: Colonialism to Industrialization

While comparatively little is known about precolonial agriculture in Brazil, there is evidence that indigenous peoples cultivated manioc and maize, as well as a wide variety of fruit, nut, and vegetable crops in the Atlantic and Amazon forests (Filho and Gamboa 1993). The earliest colonists were primarily interested in extracting and exporting brazilwood for the red dye that it produced. However, as colonies were established, so was an economy based on tropical agriculture. The first colonial cycle was dominated by sugarcane, which lasted from 1530 until 1700. The coffee cycle that followed lasted

from the 1830s to the 1930s (Eakin 1997). Even after industrialization of agriculture began to take hold and the sector diversified beyond coffee and sugar, the Brazilian economy remained heavily dependent on tropical agriculture, which was responsible for an average of 55 % of exports until the 1960s (Pereira et al. 2012).

In 1964, a military coup overthrew the democratically elected government, and the regime that ruled Brazil for the next 20 years pushed industrialization and urbanization that would change the face of Brazilian agriculture. The impact on agriculture of the push for industrialization was twofold. First, capital investments in agricultural production were encouraged through government subsidy programs that gave farmers cheap credit to purchase machinery. Second, the pull of developing cities contributed to a rural-to-urban migration that mirrored the process of rural depopulation that was simultaneously occurring all over the developing world. In Brazil, the rural population decreased from 64 % of the country's total in 1950 to 32 % in 1980 and 16 % in 2010 (Pereira et al. 2012).

With a declining rural population, a national political emphasis on industrialization and modernization, and the worldwide spread of agricultural technology and research prompted by the Green Revolution, agriculture in Brazil underwent a major transformation in the mid-twentieth century. One of the most important changes was the conversion of the *cerrado* – a mixed savannah and forest ecosystem that dominates the central plains – to agriculture. Prior to the 1970s, it was widely believed that the *cerrado* was unfit for agriculture due to the acidity of the soil. However, the country's agricultural research agency Embrapa discovered soil amendments – namely, phosphorus and lime – that would release the nutrients in the acidic *cerrado* soils and render the region the largest unexploited agricultural frontier in the world (Warnken 1999).

Despite Brazil's tremendous agricultural productivity, the country remained a net recipient of food aid well into the 1980s. Today, however, Brazil is one of the largest exporters of agricultural goods in the world and is largely self-sufficient in food. Agriculture is responsible for

35 % of the country's exports and 6 % of its GDP (Economic Research Service 2012). The following section discusses in detail some of Brazil's major crops and some of the ethical questions associated with particular sectors and with large-scale agriculture in general.

Major Crops

Coffee

Coffee is the commercial crop with the longest and perhaps most complicated history in Brazil. It has been a powerful engine of economic growth but is also directly implicated in the environmental, human rights, and land access controversies described above. During and immediately following Portuguese colonization, coffee plantations dominated the vast Paraíba Valley of São Paulo state, setting the stage for the industrial development that later made São Paulo Brazil's economic center of gravity. Though coffee's economic importance has diminished relative to other agricultural products in recent decades, it remains an important source of foreign exchange revenue, and Brazil remains the largest coffee producer in the world, responsible for over one third of total exports.

The coffee plantations that drove economic growth in Brazil throughout the nineteenth century were the beginning of Brazil's *latifundio* system wherein vast coffee plantations were operated by a small number of very wealthy landowners. These plantations subsisted on imported slave labor, and conditions were notoriously brutal. Brazil was the last country in the western hemisphere to officially outlaw slavery (in 1888), but illegal slavery continues today on many of the country's large monoculture farms.

Brazil's early coffee plantations also dramatically changed the ecosystem of the Atlantic region. While much of today's attention is focused on deforestation in the Amazon, in the nineteenth century, coffee plantations devoured Brazil's extensive – and biologically rich – Atlantic rainforest. Very little of this unique ecosystem exists today, as the method by which coffee plantations were established caused

profound erosion of delicate soils and rendered the land forever dependent on the application of fertilizers.

As the ecological impacts of coffee cultivation have become better understood, environmental groups are encouraging “shade-grown” coffee, a system where coffee bushes are planted underneath a diverse forest canopy. This system allows the forest canopy to remain largely intact, providing habitat for migratory birds and other wildlife. However, shaded systems have significantly lower yield than sun systems, which means that shade-grown coffee tends to be a specialty product marketed to “conscientious consumers” willing (and able) to pay more. Similarly, as labor abuses on large Brazilian coffee plantations have gained publicity (in 2007 the UN estimates between 25,000 and 40,000 workers may be working under slave-like conditions in Brazil), some consumers are demanding “relationship coffee” or coffee that is bought directly from small farmers rather than through brokers that market the coffee grown on large plantations.

Coffee was the first agricultural product to be marketed under the “fair trade” designation, which grew after the collapse of the International Coffee Agreement that controlled the global coffee trade from 1962 to 1989. While the “fair trade” market has grown significantly over the last decade, controversies are widespread over the certification process and the benefit to farmers. Some argue that the significant markup that retailers can charge for fair trade coffee in western markets is not passed along to farmers, and others claim that the sheer number and often remote location of small coffee farms raises questions about the ability of certifying agencies to guarantee that growers are complying with fair trade standards.

Sugar

Sugarcane was the first crop to be produced by Portuguese colonists in Brazil on a large scale. Since its introduction in the sixteenth century, sugar has remained an important export, and today Brazil produces around 25 % and exports around 40 % of the world’s sugar. While sugar is produced from sugar beets in colder countries like the USA, sugar in Brazil comes from cane,

which is milled shortly after harvest in the hundreds of mills concentrated in the central-south region of the country. The sugar industry employs over a million people and is responsible for 2 % of the country’s GDP. As global interest in biofuels grows, the market for Brazilian sugar (and ethanol) is booming. While the environmental and social controversies around sugar production have long histories, those debates are heating up as demand for ethanol surges worldwide.

Sugar was the economic engine of Portugal’s very earliest colonies, and despite being displaced first by coffee and later by the growth of industrial agriculture, sugar has never fallen far from the top of Brazil’s most cultivated crops. In colonial times, sugar production was concentrated in the northeast and central-south regions of the country where the tropical climate is conducive to its cultivation. The extant states of São Paulo, Paraíba, Pernambuco, Bahia, and Sergipe were the epicenter of sugarcane production during those times, but with the conversion of the cerrado, cane cultivation has spread rapidly and decisively to the west. With the increasing global demand for ethanol, sugarcane has once again begun to compete with soy, cattle, corn, and other industrial crops for valuable acreage. In fact, acreage planted to sugar almost doubled in Brazil between 2004 and 2010.

As with soy, much of this expansion has happened on what was formerly pasture land, and many argue that this only pushes cattle ranching deeper into the Amazon region, resulting in deforestation. Ramping up production also means tougher working conditions for the (often migrant) laborers who cut cane. These issues are thrown into even sharper relief by the worldwide scramble to find an alternative liquid fuel for the global transport fleet.

Brazil has perhaps the oldest and best-developed ethanol industry and infrastructure in the world. The oil crisis of the 1970s prompted the Brazilian government to introduce a program called PROALCOOL, which provided incentives for the production and distribution of sugarcane ethanol as an alternative transport fuel (Borges 1990). Once the oil shock passed and gasoline prices dropped, the ethanol industry began to

suffer. International sugar prices were on the rise in the 1990s, which made Brazilian ethanol less competitive in the consumer market. However, by this time the infrastructure was in place (many gas stations have two sets of pumps that dispense gasoline and pure ethanol), and government mandates to blend ethanol into gasoline kept the program alive. The invention of flexible fuel vehicles, which can run on gasoline, ethanol, or any blend of the two, significantly reinvigorated the industry, and by 2011, though only 4 % of Brazil's light vehicle fleet had all-alcohol engines, flex-fuel engines were present in more than 50 % of the existing fleet and in more than 90 % of new cars sold (UNICA 2013). Despite falling short of domestic demand, Brazil exports a significant amount of ethanol, and the USA is the biggest customer. Import tariffs combined with a hefty subsidy for corn-based ethanol significantly limited Brazilian imports for decades. However, in 2012 the US congress suspended the 30-year-old subsidy and did away with the tariff in a single piece of legislation. The Environmental Protection Agency's mandate to blend more than 13 billion gallons of ethanol into all gasoline sold in the USA kept demand high and prompted significant imports from Brazil.

The ethical implications of the growing biofuels industry are well documented (Thompson 2008; Buyx and Tait 2011; Macer 2011; Shortall and Millar 2012). Many argue that it is unethical to devote farmland to fuel production when so many in the world remain food insecure. In addition, the environmental benefits of biofuels versus fossil fuels are controversial, and biofuel production is driving foreign land acquisitions that some say threatened the food sovereignty of hungry nations. In some parts of Brazil, the march of sugar plantations is seen as a threat, both to the environment and to small farmers who compete with sugar producers for access to land. The controversies over sugar are perhaps only eclipsed by one even more ethically charged crop: soybeans.

Soy

In 2012, the soybean complex (beans, meal, and oil) surpassed iron ore to become Brazil's single

most valuable export. Until the 1980s, soy production was concentrated mostly in the southern states and served primarily the domestic animal feed and cooking oil market. The central-west part of the country is today's soy epicenter thanks to the research of Embrapa (mentioned above) that rendered the *cerrado* soils suitable for agriculture and developed soybean varieties adapted to the subtropical climate of the region. The challenge of growing soybeans under these conditions continues because, although the seed can be inoculated with bacteria that allows the plants to fix nitrogen into the soil (thereby reducing the need for nitrogen fertilizers), the warm and wet conditions create a perfect incubator for fungus and insects that have taken up residence in the vast monocultures of soy. Producers must use increasing amounts of fungicides and insecticides to keep these threats at bay, and the long-term consequences of these chemical applications are unknown. However, so far, farmers have managed these problems, and soy continues to spread across the vast plains of the central-west. Within a decade of the first forays of soybeans into the *cerrado*, the central-western states of Mato Grosso, Mato Grosso do Sul, and Goiás and the westernmost part of Bahia were outproducing the traditional agricultural centers in the south (Peine 2009). Today, Brazil is the world's largest producer and exporter of soybeans.

This dramatic expansion has brought economic growth and prosperity to both the central-west and the country as a whole, but it has not happened without ethical controversy. The main critique leveled at the soybean boom is that it has been responsible for the dramatic expansion of deforestation in the Amazon and *cerrado* ecosystems. As Brazilian soybean production skyrocketed throughout the 1990s and early 2000s, the rate of deforestation in the Amazon region accelerated as well, reaching a record high of 10,722 mile² in 2004. While soy farmers argue that the majority of new land converted to soy farms is degraded pasture left behind by cattle ranchers and *not* newly deforested for the purpose of planting soy, environmental activists counter that this expansion of soy cultivation *pushes* cattle ranchers farther into the rainforest, indirectly

contributing to both the release of carbon dioxide that results from burning and clearing land and also the loss of what is perhaps the largest “carbon sink” in the world.

Pressure from international environmental organizations prompted transnational agribusinesses to sign onto the Round Table on Responsible Soy (RTRS) in 2006. This voluntary agreement seeks to prevent the purchase of soy grown on land that was deforested after the year of implementation (among other provisions). While the direct impact of the RTRS on deforestation has not been measured, the trend in deforestation since its inception has been dramatic. In 2012, just 7 years after reaching a record high, the rate of Amazonian deforestation in Brazil fell to a record low: just 1,798 mile².

Cattle

Anyone who has traveled to Brazil is familiar with the famous *churrascarias*, where waiters roam cavernous dining rooms bearing enormous skewers of different cuts of beef. Brazilians eat more beef per capita than consumers in the USA (lagging behind only Argentina), and 80 % of the beef produced in Brazil is for the domestic market. In the USA, “grass-fed beef” is a niche product for those concerned about the animal rights, human health, and the environmental consequences of concentrated animal feeding operations, or CAFOs, which are the source of most of the beef, pork, and poultry in the US market. In Brazil, however, most beef cattle graze on open pasture until slaughter, or with a short “finishing period” (on average about 7 % of the total life span) in a feedlot. Cattle in the USA can spend up to a third of their lives in a feedlot. Because Brazilian cattle spend more time on grass and therefore grow more slowly, they are also usually around twice as old as their US counterparts at slaughter (Millen et al. 2011; USDA 2012).

Beef is a centerpiece of the Brazilian diet, and until the last decade, domestic production could barely keep up with demand. In 2003, however, Brazil overtook Australia as the world’s top beef exporter, and the largest beef processing company in the world – JBS – is a Brazilian company that began with just one slaughterhouse in 1953.

Over the past decade JBS has acquired many of the world’s best-known meat companies (Swift, Five Rivers Ranch, and Smithfield Beef, among others) and has a slaughter capacity of 74,000 head a day in Brazil alone.

This significant and rapid growth in production has meant more land in pasture, but the productivity-to-area ratio has not been one-to-one. This is partly due to improved genetics in Brazil’s beef herd, but also because of the increased use of feedlots. Feedlots have made Brazilian beef production more efficient by providing an alternative to pasture during the dry season when cattle would otherwise lose weight (Steiger 2006). While only 4 % of the 2011 Brazilian beef herd was raised in feedlots, many analysts predict that this strategy will become more common in the years to come, particularly as pressure to limit deforestation continues and demand rises for competing crops. The environmental trade-offs of feedlot versus pastured beef are certainly not straightforward. While the land pressure of grazing is clear, grain-fed cattle produce significantly more methane than pastured cattle. According to the US Environmental Protection Agency, the “greenhouse effect” of methane gas is much more severe than carbon dioxide, and agriculture – particularly beef and dairy cattle – is the main source of methane in the USA. Grass-fed beef is also leaner and richer in omega-3 fatty acids than grain-fed beef and is therefore often believed to be healthier. However, as mentioned above, global demand for beef is rising, and Brazil is stepping up to meet that demand. Whether increased production happens on pasture or in feedlots, it will undoubtedly have important – and complicated – environmental implications.

Horticulture

Fruits and vegetables are one of the few agricultural sectors in Brazil where both small-scale and large-scale farmers work to serve both the export and domestic markets. Pineapples, peaches, grapes, cashew nuts, lemons, mangoes, melons, coconuts, papaya, and bananas are all economically important export crops for Brazil (though they may be dwarfed in total value by the

behemoth sectors of soy, sugar, cattle, and coffee). Because the FFV (fresh fruits and vegetables) market is high value and tends to be more labor intensive, it is often seen as an important development strategy for small farmers in Brazil's impoverished northeastern region. Although intense concentration in the retail food sector worldwide, increasing capital requirements of "high-tech" production, and stringent quality standards create barriers to entry into global markets for many small-scale producers, horticulture has been shown to be a more profitable sector for these farmers than commodity crops (Selwyn 2013).

The social, political, and market dynamics of the export grape industry in the São Francisco valley have been the subject of much scholarship (Selwyn 2009, 2013; Collins 1993; Bonanno and Cavalcanti 2011). The valley is located in what is known as the *sertão*, a traditionally drought-stricken area that has been transformed by extensive government investment in irrigation infrastructure. It serves as a rich case study of agricultural development because of the active role of the federal government in constructing, not just the physical infrastructure for irrigated agriculture, but also the social organization of farming for a specific political purpose. As Selwyn (2013) describes, the region was first transformed in the 1970s through damming and irrigation that disrupted traditional livelihood strategies and land tenure. The government redistributed land and provided irrigation services to encourage production for the domestic market as a strategy to combat food insecurity. Later, when domestic food security faded as a concern and paying down international debt took its place as a major national priority, the government began to encourage production for the export market. This prompted a shift in the valley from basic food crops to high-value horticultural crops for the international market. This shift has had serious implications for land access in the region, and many small producers are forced to become farmworkers as a result of land consolidation. Today, more than 40,000 workers are employed in irrigated agricultural production, and the valley's main crops are

mangoes, bananas, coconuts, and grapes (Selwyn 2013). Because the sector is so labor intensive, both jobs and workers' rights abuses are produced here. Perhaps the most visible social movement for rural workers' rights has occurred in Brazil's fresh grape sector.

Small-Scale, Family, and Subsistence Farming

As shown above, agriculture is big business in Brazil. However, the majority of the food that Brazilians eat every day still comes from smaller farms, and the 2006 Agricultural Census categorizes two thirds of Brazil's 4.1 million family farmers as "subsistence" (Berdegue and Fuentealba 2011). Small-scale farming is crucial for providing food, employment, and economic resources for Brazil's rural population, but small farmers often lack secure access to or tenure over the land on which they depend for their livelihoods. Since Brazilian independence, land tenure has been a politically volatile issue, as land ownership has historically been a prerequisite for citizenship (Wittman 2009). As the Brazilian countryside has been restructured as an export platform, those who still work the land for subsistence – and those who have been driven from the land for the sake of agricultural consolidation – struggle to secure their livelihoods in the face of marginalization and often outright violence. For the last 30 years, the Movimento dos Trabalhadores Rurais Sem Terra (the landless rural workers' movement, or MST) has been enacting grassroots land reform through land occupations with the aim of securing legal rights to otherwise "unproductive" land. The movement identifies land held by speculators or absentee landlords and organizes landless families to occupy the land and put it into production. The constitution that was drafted after the end of the military dictatorship in 1988 declares that land must serve a "social function" or risk being expropriated by the government for the purpose of agrarian reform. The MST uses this provision as legal justification for its occupations and often is able to gain legal title to the land and establish permanent settlements. Since its inception, the MST has legally settled more than 370,000 families on 7.5 million hectares of land. There are

900 active encampments, with 150,000 people living in precarious conditions (MST 2013). The organization sees the current government of Dilma Rousseff as pro-agribusiness and indifferent to grassroots land reform. According to MST leadership, Rousseff's administration has "frozen" land reform in the interests of land consolidation for large-scale agribusiness (MST 2013).

As long as ownership of valuable farmland continues to be highly concentrated in the hands of a relative few, and as long as Brazil's rural population continues to struggle to provide for their own (and the nation's) food security on small plots of land for which they have no secure title, land conflicts will likely continue, and land politics will likely be a volatile and divisive issue.

Summary

Brazil is an agricultural powerhouse that has been profoundly shaped by the larger historical processes of colonialism, industrialization, and liberalization. Today, Brazil's agricultural sector is bifurcated; large-scale industrial producers of commodity export crops compete for land and resources with smaller-scale farmers growing food for the domestic market and their own subsistence. Of course, this dichotomy is an oversimplification of a much more complex and varied landscape that cannot be reduced to such discrete socioeconomic categories. Within each subsector, ethical, environmental, economic, cultural, and social issues present a challenge to policy makers, consumers, and farmers alike. Commodity crops like soybeans, sugar, coffee, and beef provide a crucial economic resource and source of employment, but all are fraught with ethical controversies. The employment of slave labor on some large farms has foiled the federal government's attempt at eradication, and every year thousands of workers are "freed" from bondage. Because Brazil's agricultural frontier exists at the interstices of the cerrado and the Amazon, large-scale production of soy and sugarcane has become an environmental lightning rod. Finally, Brazil's peasantry is vibrant, productive, well organized, and unwilling to be cast aside for the

sake of export growth. The ethical issues that arise over access to land promise to continue as global demand for Brazilian commodities intensifies. In short, Brazilian agriculture sits squarely at the intersection of some of today's most pressing ethical questions. How does society balance economic growth and environmental protection? How does society structure the food system to provide the best food for the most people at the lowest social, environmental, and economic cost? These questions will be addressed through policy and research, but also by grassroots social movements demanding equity and consumers demanding a healthier and more just food system. Brazilian agriculture stands as a bellwether for the future of food and agriculture around the world.

Cross-References

- [Absentee Landlords and Agriculture](#)
- [Access to Land and the Right to Food](#)
- [Biofuels: Ethical Aspects](#)
- [Corporate Social Responsibility and Food](#)
- [Economy of Agriculture and Food](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Land Acquisitions for Food and Fuel](#)
- [Sustainability of Food Production and Consumption](#)

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Brillat-Savarin and Food

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Synonyms

Physiology of taste

Introduction

Jean Anthelme Brillat-Savarin (1755–1826) is the author of *La Physiologie du goût* [*The Physiology of Taste*]. Appearing in Paris in 1825, this delightful record of a lifetime's observations has remained continuously in print, unrivalled as the core gastronomic text. While the book is more quoted than read and lacks an authoritative edition or analysis in either French or English, it provides a seemingly inexhaustible supply of insights that includes a hedonic theory of history.

La Physiologie du Goût

“Tell me what you eat, and I shall tell you what you are,” Brillat-Savarin is well known for announcing. This is the fourth of twenty aphorisms that he intended “to serve as a prolegomenon to his work and as a lasting foundation to the science,” by which he meant gastronomy. The aphorisms announced an ontology: “The universe is nothing without life, and all that lives nourishes itself” (Aphorism I). They recommend hedonism: “The Creator, obliging people

to eat to live, invites them through appetite, and compensates them through pleasure” (Aphorism V). This hedonism is bounded: “Those who stuff themselves or who intoxicate themselves know neither how to drink nor how to eat” (Aphorism X). It must also be shared: “To have invited someone is to take responsibility for their happiness for the whole time they are under our roof” (Aphorism XX).

The bulk of *La Physiologie du goût* comprises 30 meditations. Often described as disordered, the meditations follow a broad plan, namely: senses and taste (meditations 1–2); gastronomy (3); foods and drinks (5–9); end of the world (10); gourmandise (11–13); table pleasure (14–15); physiology – digestion, rest, sleep, dreams, dietary influences on these, obesity, treatment of obesity, thinness, fasting, and death (16–26); and history of cooking and culminating in restaurants (27–29). After “Bouquet” (30), which proposes a fanciful public ceremony in favor of a new, tenth muse, Gastérea, and a summary “Transition,” a collection of anecdotes, recipes, and poems under the heading “Varieties” conclude with a brief “Envoy to the gastronomers of the two [Old and New] worlds.”

The book is evidence in itself that meals lead to poetry, charming encounters, and fond memories. However, revealing “what you are” requires wide study: “To fulfil my self-appointed task, I had to be physician, chemist, physiologist, and even a little erudite” (Preface). Moreover, the “Preface” made clear that he spoke in two registers – conversationally and as a “professor” – so that he also left more formal findings on a range of topics that include obesity and death. More effectively than any other work, his book sets out a complete worldview grounded in meals and supported by a field of inquiry with its program, style, and method.

Arguably the work’s most systematic contribution is a hedonistic theory: that in the service of the *stomach*, the exceptional *taste ability* of humans has lent itself to the practice of pleasurable eating or *gourmandise*, which attracts the more complete *table pleasure* (incorporating not merely the physical pleasure of eating but the whole circumstances, including settings,

memories, and conversations) and which drives the *political economy* that requires the *sciences*, the peak of which is *gastronomy*.

Brillat-Savarin devoted himself to meals in revolutionary times, politically, religiously, and intellectually (Teulon 1998). As food changed rapidly and the wider society and culture with it, facilitating the capacity of “the aesthetic pleasures of eating ... to transform food into language” (McLean 2012, p. 50), so that he contributed greatly to gastronomy becoming its own cultural field (Ferguson 2001).

After a description of the author, the book, and its reception, this entry outlines Brillat-Savarin’s hedonistic argument. Section numberings accord with M.F.K. Fisher’s translation (and these numberings follow an anonymous translation in 1884; both remain identical with the first edition until the original §86, when they become one higher, after §119 two higher, and after §132 five higher; Anne Drayton’s translation is the same as a French edition [1923?], and these run one higher than the anonymous/Fisher numberings between §60 and §86).

Biography

Jean Anthelme Brillat-Savarin was born on 1 April 1755 in the attractive town of Belley on the edge of the Alps. He studied law and some medical subjects at Dijon University from 1774. A provincial lawyer elected to the National Assembly in 1789, he was mayor of his hometown in 1793, when forced to flee the Reign of Terror to Switzerland and eventually America, where he spent 2 years teaching French and playing violin in a theatre orchestra. Among other adventures, he transmitted knowledge of the *fondue* gained on the run in Switzerland to the smart French restaurateur in Boston, Julien, who subsequently rewarded him by organizing a rump of Canadian roebuck (Varieties 13).

Returning to France in 1796, Brillat-Savarin was soon appointed a judge of the Court of Cassation in Paris, a position he held the rest of his life. He wrote on other matters, including books on public administration (*Vues et projets*

d'économie politique, 1802) and duels (*Essai historique sur le duel*, 1819), but gastronomy was a long-term, secret project, although “more than one friend has already guessed your secret” (Dialogue). He published *La Physiologie du goût* at his own expense at the end of 1825 (dated 1826), and he died shortly after in Paris on 2 February 1826. His anecdotes reveal him to be well connected with the medical, scientific, and philosophical communities. He remained unmarried; biographer Giles McDonogh (1992) reports that some decades later, his family destroyed records of liaisons.

La Physiologie du goût is a collection of bon mots, reports of findings, close observations, and theoretical sketches; he explicitly contributed “in the midst of these solemn meditations, a piquant anecdote, a pleasant memory, or some adventure of an active life” (§15). Virtually every commentator admits to being captivated by the wit, and he has been held up as a model stylist. For Charles Monselet, when introducing the book in 1879, Brillat-Savarin commanded the anecdote’s “real secret, elegance, and tone.” A meal is recalled with charm, science delivered with mock seriousness, and profundity delivered with puckish humor. Such features are illustrated in the touching prefatory “Dialogue between the author and his friend.” The friend (eminent physiologist Anthelme Richerand) entreated the author not to leave publication of so much labor until after his death. But people who only know the book by the title will think me trivial, responded the author, ultimately relenting, but only so that he could expose his friend’s sole vice. Pressed, Brillat-Savarin announced: “You eat too fast!” (Dialogue).

“Yet to see Brillat-Savarin solely as a stylist is to underestimate the philosophical depth of the work,” Michael Garval warns (2001, p. 659). Brillat-Savarin chatted about life’s imperatives – “The Creator has imposed on people six great and principal necessities, which are: birth, activity, eating, sleeping, procreation and death” (§122). After contented sleep, a person “goes back to society without once regretting the lost time” (§98). Dreams usually lack taste and smell, so

that we see feasts without tasting them (§87). As to the “end of the world,” he suggested filling idle moments by imaging what would happen if, say, a stray comet caused global warming. His only hint is that “real danger tears down all social ties,” as when husbands closed doors on their wives during a yellow fever epidemic in Philadelphia in 1792 (§54).

As an empiricist of the table, he observed the organs of taste, the psychology of the meals, and social conventions. Should coffee be pounded or ground in a mill? He purchased some good mocha, divided it into two samples, and tested the results on devout connoisseurs, who supported pounding (§46). The suspicion that the truffle contributed to sexual pleasures necessitated further, “undoubtedly indelicate” research. His respondents decreed: “The truffle is not a positive aphrodisiac; but it can, in certain situations, make women more tender and men more agreeable” (§44).

As a founding member of the Society for the Encouragement of National Industry, he demonstrated to the board his invention of the “irrorator” – a pocket pump for perfuming the air. With droplets raining, the learned heads bowed “under my irroration” (Preface). “Playing the scientist” – that’s how Roland Barthes depicts Brillat-Savarin; he took science “seriously and ironically at the same time; his project of founding a science of taste, of stripping culinary pleasure of its habitual trademark of futility, that was certainly heartfelt; but he carries it out emphatically, that is to say, ironically” (Barthes 1975, pp. 14 & 28). For Brillat-Savarin, too, empirical studies of taste were merely the start, “for it is, above all, from its moral history that this restorative sense gains its importance and its glory” (§15).

Some scholars have argued that Brillat-Savarin plundered, without acknowledgement, from Grimod de la Reynière (1758–1837). Michael Garval sets sentences from Grimod alongside seven of Brillat’s aphorisms. Where Grimod had written: “A great dinner without hors d’œuvres is as valueless as a woman without rouge,” Brillat-Savarin decreed: “A dessert without cheese is like a beautiful woman missing an eye.”

However, such quips and ideas do the rounds of dinner parties, and Garval concludes: “Grimod’s manic energy, his discoverer’s exuberance, lay the foundation for Brillat’s greater sobriety, maturity of judgement, and stylistic sophistication” (2001, pp. 60–61). Anticipating food journalism, Grimod’s gastronomy is more closely related to the now widespread marketing version – that is, to the promotion of high-quality products, retailers, restaurateurs, and regions – than to Brillat-Savarin’s ambitions for gastronomy to become a total, supervisory discourse.

A succession of important writers have introduced French editions, starting with his physiologist compatriot, godchild, and friend Richerand in the fifth edition of 1838, Charles Monselet in November 1879, Jean-François Revel in November 1981, and no more sustained interpretation is available than Roland Barthes’ to an abridged edition in 1975. The most devoted responder has been US writer M.F.K. Fisher (1908–1992). In her first book, *Serve It Forth*, Fisher wrote that *The Physiology of Taste* “is as near perfection as we yet know it, and a constant wonder.” Even better than quoting from it, she wrote, is “the companionship of the book itself.” She went on in 1949 to a greater tribute, her translation with copious notes (Brillat-Savarin 1971).

A neuroscientist examining flavor, Gordon Shepherd, dots his book with such statements as “Amazingly, Jean Anthelme Brillat-Savarin already knew this . . .” (2012, p. 125). Philosopher of taste Carolyn Korsmeyer is equally supportive: “The book . . . remains a worthy model of a study of taste that is serious yet light-hearted, moderate without moralism, speculative yet sensible. It is also a monument of its kind to what can be accomplished through amateur research and thoughtful introspection” (1999, p. 69).

The Core Argument

Brillat-Savarin left convincing testimony of the ethics of companionship, demonstrating the care for others typical of a good meal. This companionship must be based on self-interest because, as

he wrote, *gourmandise* motivates the great care taken by hosts, employing all their knowledge and tact, just as it stimulates the guests’ gratitude. Brillat-Savarin shunned “those stupid diners who swallow with culpable indifference the most distinguished morsels, or who inhale with sacrilegious inattention a fragrant and limpid nectar.” In turn, he advised encouraging others by expressing appreciation not merely of exceptionally intelligent arrangements but any attempt to please (§59). However, his etiquette of conviviality is not spelled out as consistently as his argument for meal-centered pleasure, which occupies the remainder of this entry.

From the title, the book concerns “taste.” However, it is about the “pleasure of the table,” he announced (Preface), and he also wrote with two purposes always before him – to redeem *gourmandise* and to establish gastronomy (Transition). In support of this last, the *Physiologie du goût*’s original subtitle was *Méditations de gastronomie*; it was dedicated to the *Gastronomes parisiens*; he signed off as the author of the “*Méditations gastronomiques*.” The compound word, “gastronomy,” spans from the most natural (*gaster* – ancient Greek for “stomach”) to the most cultural (*nomos*, “law”). In all, had gave prominence to the stomach, taste, *gourmandise*, the pleasure of the table, and the science of this, and these topics are considered here in turn.

While the stomach is basic and he assembled a “polite” depiction of ingestion and digestion (Meditation 16), the stomach is shared with other animals. The human species is marked by its exceptional taste abilities. Throughout the processes of chewing, including the tongue movements “of *spication*, of *rotation* and of *verrition* (*verro*, Latin, I sweep),” and swallowing, “there is not a single particle, a drop or an atom, which has been not been submitted to the appreciative power” (§14). From “direct” through “complete” to “reflective” sensation, taste aesthetics are sequential (§11), which Kevin Sweeney (2007) finds philosophically interesting, also noting how refined meals would soon shift from massed display (*service à la française*) to sequential (*service à la russe*).

Brillat-Savarin emphasized that the pleasure of taste is the only one that everyone can enjoy, possibly even two or three times a day, that can console for the absence of other pleasures, that is “not followed by regret,” and that is more lasting and more subject to our will; “finally, in eating we experience a certain indefinable and particular well-being, which arises from instinctive consciousness; that, by us eating, we replace our losses and prolong our existence” (§13).

The appreciative power of taste is the basis of gourmandise, which is “a passionate, considered, and habitual preference for whatever pleases the taste” (§55). He defined gourmandise with precision to distinguish this social grace once and for all from the “gluttony and intemperance with which it has for so long and so unfortunately been confused.” For zealous moralists have found excess when they could have found the “intelligent enjoyment of the earth’s treasures, which were not given to us to be trampled underfoot” (Transition).

Gourmandise in this other sense (“gluttony” in English) has remained a cardinal sin of the Catholic Church. To such strictures, Brillat-Savarin responded: “When gourmandise turns into gluttony, voracity, or debauchery, it loses its name, its advantages, and all its powers, and falls to the moralist, who can preach upon it or the doctor who can cure it with prescriptions.” He therefore asked any translator of his “instructive book” to use the French “gourmandise” (§59), so avoiding the misleading implications of the English “gluttony” and also showing respect for the French development of both “*La Coquetterie* and *La Gourmandise*, those two great improvements which extreme sociability brought to our most imperious needs” (§59 note).

Hedonism

The gourmand has a sacred trust, obeying the “rule of the Creator, who, having ordered us to eat in order to live, invites us to do so with appetite, encourages us with flavor, and rewards us with pleasure” (§56). People are to enjoy

everything that the earth produces, he stated repeatedly. It is for human beings that the quail fattens, that mocha (coffee) has a sweet perfume, and that sugar benefits health. Human beings are granted dominion, and so: “Why not take advantage, at least with appropriate moderation, of the good things which Providence offers, especially if we continue to accept that they are short-lived, especially if they excite our gratitude towards the Author of all things” (§66). Based on the epidemiological research of Dr Villermet, who found that human mortality diminishes in direct proportion to the standard of living, “good living is far from being destructive to good health.” All other things being equal, “gourmands live much longer than other folk” (§68).

As well as responding to appetite, hunger, and thirst (§79), people could seek consolation in hedonism: “Humanity is incontestably, among the sentient beings that populate the globe, that which is inflicted with the most suffering.” People have unprotected bodies, poorly shaped feet, an inclination to war and destruction, and a mass of maladies such as gout, toothache, acute rheumatism, and strangury. The fear of all this pain makes people give themselves up to the “small number of pleasures which nature has allotted” (§70).

Engaging with all levels of reality, people experience full-blown “table pleasure” (*plaisir de la table*) (Meditation 14). “The pleasure of the table is the reflective sensation that arises from the various circumstances of deeds, places, things, and people that accompany the meal.” That is, on top of being blessed with a relatively intense experience of taste, human beings use their other senses and also enjoy company, not least through conversation. Brillat-Savarin carefully distinguished between the pleasure of *eating* and the more comprehensive pleasure of the *table*. Unlike eating pleasure, table pleasure is largely independent of the drive for food; it is a *reflective* pleasure known only to the human race (§72). This relates to his distinction that “Animals feed; people eat; only those with wit know how to dine [*l’homme d’esprit seul sait manger*]” (Aphorism II).

Under the influence of table pleasure, the diner's brain is refreshed, the face lights up, color heightens, eyes shine, and a "sweet warmth" spreads through the body. It is far from a mere physical pleasure, since also, morally, the diner's spirit grows more perceptive, the imagination flowers, and clever phrases fly from the lips. "Effectively, as the result of an appreciated meal, both body and soul enjoy a special well-being" (§73).

Brillat-Savarin listed twelve requirements for peak table pleasure. The maximum number of guests should be 12, so that conversation may remain "general" (everyone sharing the one thread). The room temperature should be between 13 and 16° Réaumur (around 60–68 °F). The progression of dishes should proceed from "the most substantial to the lightest" and so on. But that was for fashionable dinners, and Brillat-Savarin often preferred simplicity. So, the minimum requirements for table pleasure are passable food, good wine, amiable companions, and sufficient time. The most careful preparations and sumptuous accessories are to no avail "if the wine is bad, the guests gathered without discretion, the faces glum, and the meal consumed in haste" (§75).

English translators have rendered *plaisir de la table* mostly as the plural "pleasures of the table." Yet positive sensations, memories, and ideas and feelings of togetherness come together as a single *table pleasure*. As Roland Barthes explains, Brillat-Savarin observed that pleasure was "*over-determined*, that it must have multiple simultaneous causes." He taught the value of "composite pleasure" [*plaisir composé*] and so "composite histories" [*histoires composées*] (Barthes 1975, pp. 30, 33).

Hedonic Theory of History

Gourmandise drives the economy because, firstly, it "sustains the hopes and ambitions and performances" of fishers, hunters, horticulturists, and such. Secondly, appetites provide the "livelihood of an industrious multitude of cooks, pastry cooks, confectioners, and other preparers of

food," who, thirdly, "employ still more workers of every kind." Gourmandise becomes "the common bond which unites peoples through the reciprocal trade of goods serving daily consumption." Any industry aimed at gourmands is aimed at both the "fattest fortunes" and the "commonest daily human needs." All of this causes an inestimable "flow of capital" (§55).

As an example, following Napoleon's defeat at Waterloo in 1815, the victorious nations extracted reparations. Rather than collapse, however, the French economy prospered. "What power came to our aid? What divinity worked this miracle? Gourmandise." Before long, "the queen of cities was no more than an immense refectory. These intruders ate in the restaurants, in the cookshops, in the *cabarets*, in the taverns, in the street stalls, and even in the streets." Among the food businesses, restaurateur Véry increased his fortune, *pâtissier* Achard began his, restaurateur Beauvilliers made a third lucky one, and Madame Sullot sold 12,000 of her tiny tarts a day from tiny shop in the Palais-Royal (§57).

The relatively lengthy Meditation 27 outlines a gastronomic theory of history: "all human industry has been concentrated on augmenting the duration and intensity of table pleasure." Since throats and stomachs have limits, people threw themselves into improving the accessories. So, they ornamented goblets and vases, invented the charms of music, and sprayed exquisite perfumes. Dancers, clowns, and other entertainers amused the eyes, every sense joined in a comprehensive pleasure of the table (§74). To such ancient gratifications, his recent contemporaries contributed dishes that were so delicate that people would never have to get up from table except that other business intruded (§75). Historically, the increasing sophistication of the economy culminates in restaurants (§136).

Brillat-Savarin's history of the sciences can be understood in this context, each new science pushing the limits to human powers in catering to gourmandise. He appreciated that the sciences were freed from "the danger of regression" when they were at last captured in print (§15–17), and the sciences at last made way for gastronomy.

Gastronomy

Starting with the imperious needs of the stomach, the dutiful actions of the tongue and the exceptional god-given taste abilities, the book explains how civilization evolved to cater to gourmandise through the political economy and the sciences, until a “new science has suddenly appeared that nourishes, restores, preserves, persuades, consoles and, not satisfied with strewing armfuls of flowers in the path of individuals, contributes even more powerfully to the might and prosperity of empires” (§15). This new science is gastronomy (Meditation 3).

Brillat-Savarin defined: “*La gastronomie est la connaissance raisonnée de tout ce qui a rapport à l’homme, en tant qu’il se nourrit,*” which translates as the “systematic knowledge of everything that relates to human beings so much as they nourish themselves.” He went on: “Its purpose is to watch over the preservation of people by means of the best nourishment possible.” It rules over the entire lifespan from the cries of the newborn to the dying person’s final drop, which gives pleasure while being, sadly, too late to digest. It also looks after every social class, directing the banquets of assembled monarchs and prescribing the minutes to boil an egg (§18).

Note the “everything” in his definition, and he specified that gastronomy encompasses natural history, physics, chemistry, cookery, business, and political economy (§18). According to Barthes, “B.S. understood very well that as a subject of discourse food was a sort of grid (or topos, the classical rhetorician would have said), through which one could successfully pass all the sciences that we today call social and human.” In other words, food is a “total social fact around which a variety of metalanguages can be gathered: physiology, chemistry, geography, history, economics, sociology, and politics (today we would add the symbolic)” (1975, p. 32).

Rare in ancient Greece, the word gained currency following Joseph de Berchoux’s poem *La Gastronomie* in 1801. The revived word, Brillat-Savarin said, was not always understood, but put a merry smile on every face (§36).

Summary

Among the many contributions of the foundational text of gastronomy, *La Physiologie du goût*, Brillat-Savarin set out a hedonic theory that makes the pleasure of the table the driving force of history and so the sciences, of which the culmination has been gastronomy. Given that the scope of gastronomy is often restricted to the promotion of particular items, styles, and regions of food, the intellectual fate of Brillat-Savarin’s work remains tied to the success of the discipline in its more ambitious version.

Cross-References

- [Epicureanism and Food](#)
- [Gluttony](#)
- [Gustatory Pleasure and Food](#)

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Buddhism, Cooking, and Eating

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Synonyms

Ahimsa; Buddhism; Dharma; Mahayana; Theravada; Vegetarianism

Introduction

The story and teachings of Buddhism entail multiple points of focus on food and eating. In addition to advocating for what foods are eaten, Buddhist teachings illustrating how food is prepared and consumed offer important guidance of the application of Buddhist principles to daily life. One principle example of Buddhist writing focused on cooking and eating is the writing of the thirteenth-century Japanese monk, Dōgen, who described how food preparation was an important opportunity for practice for monastic cooks in the Zen tradition or *tenzo*. Perhaps the most significant point of ethical consequence related to eating, and a topic of much debate among Buddhist practitioners, is the question of adherence to a vegetarian diet. Historically, this debate has centered on its relationship to the first precept for both lay and monastic practitioners – “do not kill” – and the value for not harming animals.

Elaboration of Key Principles in Buddhism

Story of the Buddha

Siddhartha Gautama was born into the noble Sakya clan near the city of Benares in northern India in around 560 BC. His early life is described as one of very good fortune, luxury, and opulence (Burt 1982). Yet, the young Siddhartha was unsettled with his position, and he questioned whether worldly pleasures of wealth, power, and luxury were truly the foundations of happiness. Having been purposefully sheltered from the vexations of life (old age, illness, suffering, death) by his father, Siddhartha knew nothing of these things until he managed to escape from the palace on several occasions. Each time, he observed a different form of suffering (an old man, a sick man, and a putrefying human corpse). Having perceived the impermanence of bodily pleasures and the inevitability of death and decay, he made a final escape from the palace to go into the world and seek the path to the true happiness of enlightenment.

The story of Siddhartha's spiritual journey involves his experimentation with several types of accepted practices of the day, particularly asceticism and yoga (Conze 2003). His practice culminated with austere eating to the point of living on, depending on the version of the story, a single bean, a single sesame seed, or a single grain of rice per day, until he fainted while crossing a river, nearly drowning had it not been for the presence of his spiritual companions. There is lack of consensus as to who cared for him after he fainted (Burt 1982), but the story of The Golden Bowl describes how a young woman named Sujata fed the starving man a pudding of milk and rice that she had made and he soon regained his strength. It was this intake of food that he credited with the rejuvenation of his stamina, allowing him to sit under the Bodhi tree until his enlightenment (Conze 2003; Buddha Dharma Education Association 2012).

In the story of his life, food illustrates Siddhartha's rejection of the excesses of decadence and self-indulgence, as well as his denial of deprivation or austerity, as viable means to

enlightenment. This represents one aspect of the foundational principle of “The Middle Way,” which Siddhartha Gautama (“The Buddha”) described in his first post-enlightenment sermon (Burt 1982). In this way, eating only what the body needs – neither excess or indulgence nor denying the body adequate sustenance – becomes an opportunity for Buddhist practice.

Just as the story of Sujata marks the beginning of Siddhartha’s time as the awakened one – “The Buddha” – food also plays a role in the end of his life. According to the *Mahāyāna Mahāparinirvana Sutra* of the Pali Canon, at approximately the age of 80 years old, the Buddha ate his last meal, which was an offering made to him by a metalworker named Cunda (Yamamoto and Page 2007). There is discrepancy in earlier scriptures and later translations as to whether the Buddha consumed tainted pork or poisoned mushrooms (Burt 1982). The sutra describes the Buddha as being afflicted by “dysentery, and he suffered sharp and deadly pains” (*Mahāparinirvana Sutra*, verse.21, Yamamoto and Page 2007). Shortly after that meal the Buddha died, but before dying he asked his companion Ananda to deliver the following message to Cunda, lest he feel negatively responsible for the Buddha’s death.

It is a gain to you, friend Cunda, a blessing that the Tathagata took his last alms meal from you, and then came to his end. For, friend, face to face with the Blessed One I have heard and learned: ‘There are two offerings of food which are of equal fruition, of equal outcome, exceeding in grandeur the fruition and result of any other offerings of food. Which two? The one partaken of by the [Buddha] before becoming fully enlightened in unsurpassed, supreme Enlightenment; and the one partaken of by the [Buddha] before passing into the state of Nibbana in which no element of clinging remains. By his deed the worthy Cunda has accumulated merit which makes for long life, beauty, well being, glory, heavenly rebirth, and sovereignty.’ (*Mahāparinirvana Sutra*, verse.56, Yamamoto and Page 2007)

Buddhist Practice

After the Buddha’s death, a series of splits occurred in the community (Pāli – *Sangha*) for reasons of differing philosophy and geography;

the result being that today, there are many sectarian divisions of Buddhism practiced around the world (Lopez 2001). Scholars of Buddhism distinguish three schools, also referred to as the “Three Vehicles” of practice into which all practices fall. All schools are believed to have their origins in India. Theravāda (“The Ancient Teaching”) is the oldest and, comparatively, the most conservative school. It is also known as *Hīnayāna* or “Small Vehicle” practice as, on the surface, it is concerned mostly with self-enlightenment. This is the style most predominantly practiced throughout South East Asia and Sri Lanka. However, as with all styles of Buddhism, practitioners can be found around the world. Mahāyāna Buddhism (“Great Vehicle”) is the largest of the divisions with variant styles found in many parts of the world – Zen in Japan, Pure Land and Nichiren in China, and Tibetan lineages. In Mahāyāna, practice emphasizes universal enlightenment and altruism, as illustrated through the *bodhisattva* principle of striving to attain enlightenment to benefit all beings (Lopez 2001; Gyatso 2007). The third school, Vajrayana (“the Diamond Vehicle”), also known as *Tantric*, is associated with Mahāyāna practice and stresses ritual and a comparatively rapid path to enlightenment (Ray 2000). It also has its origins in India and Tibet, where the highest concentration of today’s practitioners are found.

The original teachings of the Buddha (Pāli – *Sutras*) are compiled into one triplex canon known as the Pali Canon (first century BCE) or *Tripitaka* (“Three Baskets”), which are central to all styles of practice and form the single text of the Theravādan school. Mahāyāna doctrine also includes more recent scriptures (Chinese Canon [83 CE] and Tibetan Canons [1411 CE]) as well as other later translations of the Buddha’s original teachings (Pali Text Society 2012).

The three parts of the Pali Canon are the *Vinaya Pitaka* (“Discipline Basket”), which addresses rules for monks and nuns; the *Sutta Pitaka* (“Discourses Basket”) contains the discourses of the Buddha and some of his disciples, and the *Abhidhamma Pitaka* (“Higher Teachings Basket”) describes concepts and states pertaining to metaphysics and psychology.

Many of the points of debate pertaining to dietary restrictions in Buddhism arise from inconsistencies and variant interpretations between earlier Pali Canon discourses (Theravāda) and later Mahāyāna scriptures (Chinese and Tibetan Canons, in addition to other Mahāyāna literature) (Gunasekara 2012; Kapleau 1981; Kahila 2012).

Basic Tenets of Buddhism

To understand how Buddhism approaches food and eating, it is important to be familiar with the most basic Buddhist teachings, which are The Four Noble Truths, the Eightfold Noble Path, and its related Precepts for practitioners.

After his enlightenment, the Buddha gave his first teaching or discourse on the nature of suffering (Pāli – *Dukkha*) in his famous “Sermon at Benares” (Burt 1982). In this teaching, the Buddha outlined the foundational tenets of Buddhism called the “Four Noble Truths,” which are the following: (1) Living involves unavoidable cycles of suffering (birth, old age, sickness, and death) (Sanskrit – *Samsāra*). (2) Suffering and remaining trapped in cycles of *Samsāra* (via reincarnation) are rooted in selfish craving, attachment, and comfort seeking (the “Three Poisons” [Pāli – *akusala-mūla*] of greed, hatred, and ignorance). (3) The only way to avoid suffering is to relinquish selfish craving and greed. (4) The way to do this is to follow the Eightfold Noble Path. This is the means to abolish suffering and free oneself from endless cycles of *Samsāra* (KHEMA 1987).

The Eightfold Path provides summary guidelines for psychological and moral orientations, as well as meditation practice. Couched within the Noble Eightfold path are the five (monastics follow many more) precepts, guidelines, or commitments for practice (Pāli – *pañca-sīlāni*) that are foundational to both Theravāda and Mahāyāna practice (Gyatso 2007). The Precepts are guidelines that facilitate practice, rather than rules that prompt rewards or sanctions.

It is the first of these precepts – the vow to abstain from taking life (“do not kill”) that has played the most significant role in Buddhist discourse about food, namely, the issue of

vegetarianism. Unlike the Abrahamic religions (Judaism and Islam), the Buddha established few dietary laws (Wijayaratna 1990). According to the *Vinaya Pitaka* of the Pali Canon, this is limited to the explicit prohibition for monastics from consuming horses, elephants, snakes, lions, and dog, which implies that other meats were allowed. Monks were also forbidden from requesting favorite foods in alms, an indication of self-indulgence:

If a monk, who is not unwell, requests and eats delicacies such as curd, fresh butter, sesame oil, honey and molasses, fish, meat, and milk, he commits a Pacittiya offense. (Vinaya Pitaka, IV 88, Wijayaratna 1990)

However, how a practitioner engages with food is one component of the application of Buddhist principles, such as nonviolence (Sanskrit – *Ahimsa*) and the relinquishment of greed and ego gratification via the Eightfold Noble Path. In this way, the Buddha provided recommendations not only for what to eat but also how a practitioner should use food to facilitate practice of the “Middle Way” and skillful means (Sanskrit – *Upaya*).

Sōtō Zen: Dōgen and Instructions for the Zen Cook

Perhaps the most extensive discourse on the use of food for Buddhist practice comes from the Mahayana tradition and the thirteenth-century monk and founder of the Sōtō Zen school of Buddhism, Dōgen. He wrote detailed instructions for food preparation and consumption for monastics in his *Tenzo Kyokun* (Instructions for the Zen Cook), which was translated and commented upon by Kosho Uchiyama Roshi as the *Jinsei Ryori no Hon* (How to Cook Your Life) in 1970 (Dōgen and Uchiyama 1983). Together these works illustrate the principles of Buddhist spiritual training; maintaining equanimity, an unbiased mind, and *Upaya* through the daily tasks and processes of food preparation carried out by monastery cooks:

A dish is not necessarily superior because you have prepared it with choice ingredients, nor is a soup inferior because you have made it with ordinary greens. When handling and selecting greens, do so wholeheartedly, with a pure mind, and without

trying to evaluate their quality, in the same way in which you would prepare a splendid feast. The many rivers which flow into the ocean become the one taste of the ocean; when they flow into the pure ocean of the dharma there are no such distinctions as delicacies or plain food, there is just one taste, and it is the buddhadharma, the world itself as it is. (p. 13)

Dōgen describes the role of the *tenzo* as being “the incomparable practice of the Buddhas” (p. 12) and an important opportunity for Zen practice. He states, “Though a person might be fortunate enough to be appointed to the office of *tenzo*, if he lacks the aspiration to walk the Way, he will return empty-handed from the mountain of goodness and the ocean of virtue” (p. 15). Dōgen describes the role of *tenzo* as being an experience that all potential monastic leaders should first undertake.

Dōgen also influenced how food is consumed in Zen practice, as he is also credited with bringing the practice of Ōryōki from Chinese monasteries to Japan, thereby introducing it to Zen practice. The practice of Ōryōki emphasizes mindful attentiveness to the act of eating through a ritualized series of movements and a specific process of eating and completing the meal that acknowledge gratitude and attention toward the food (Loori 1999). Throughout the process, practitioners are called upon to focus attentiveness to the precision of each movement, as well as noticing distractions or wandering thoughts. In this way, mindfulness and self-awareness are fostered. The name Ōryōki translates to “just enough” in reference to the practice of not using more food or dishes that are left as waste or to clean for others, thus reiterating the principle of moderation and the “Middle Way.” The use of Ōryōki as a meditation technique has been adopted by other styles of Buddhist practice (Shambala 2012).

Buddhism and Food: What to Eat

Vegetarianism

The most prominent dietary practice, and question of ethical debate, pertaining to Buddhism has to do with vegetarianism. According to the *Tripitaka*, the Buddha was not a vegetarian.

Nor did he explicitly advocate for a vegetarian diet (Gunasekara 2012; Kapleau 1981). However, the first of the precepts forbids killing and in the *Jivaka Sutra* of the *Majjhima Nikaya* (*Sutta Pitaka*) the Buddha prohibits his monks from consuming flesh from any animal that was “seen, heard, or believed” (referred to as the “Three-Fold Rule”) by the monk to have been killed specifically for his benefit (Nanamoli and Bodhi 1995; Gunasekara 2012; Wijayaratna 1990). The Buddha’s non-compulsory stance on food restrictions is illustrated in the *Khandhaka* or second book of the *Vinaya Pitaka*, via Theravādan portrayal of the story of Devadatta who was a clansman and fellow practitioner of the Buddha (Batchelor 2010; Wijayaratna 1990). The story describes how Devadatta challenged the Buddha’s leadership, including attempts at murdering him, and creating a schism among the Buddha’s followers. Devadatta insisted that the Buddha impose rules or “the Five Austerities” (Sanskrit – *Tāpasya*) for the monks’ practice. Among these austerities were the requirements that monks should only live on collected alms and never accept invitations to dine with lay people. Devadatta also insisted that monks should abstain completely from eating any flesh or fish and practice complete vegetarianism. The Buddha chose to allow the monastics to practice these austerities if they wished, but he did not impose them as mandatory (Nanamoli and Bodhi 1995; Gunasekara 2012).

The Buddha also cautioned his monks to accept alms without discrimination for a few reasons (Kahila 2012; Gunasekara 2012). First, if a monk refused alms based on dietary restrictions, lay practitioners would be prevented from gaining merit through their acts of charity. Additionally, as an application of the Buddha’s prescribed “Middle Path,” monks were counseled to eat all foods that they received as a practice of gratitude, humility, and given the Buddha’s resistance to asceticism, to maintain a healthy body to support their practice (Gyatso 2007).

Most of the emphasis on vegetarianism stems from later Mahāyāna scriptures, such as the *Lankavatara Sutra*, *Brahma Net Sutra*, or the *Shurangama Sutra* in the Chinese Canons that

take a stronger position on dietary practices than those originally attributed to the Buddha in the *Tripitaka*. For example, the *Brahma Net Sutra* states as one of the 48 Secondary Precepts:

3. On Eating Meat

A disciple of the Buddha must not deliberately eat meat. He should not eat the flesh of any sentient being. The meat-eater forfeits the seed of Great Compassion, severs the seed of the Buddha Nature and causes [animals and transcendental] beings to avoid him. Those who do so are guilty of countless offenses. Therefore, Bodhisattvas should not eat the flesh of any sentient beings whatsoever. If instead, he deliberately eats meat, he commits a secondary offense. (*Brahma Net Sutra: Moral Code of the Bodhisattvas* 2000)

Hence, Mahāyāna practitioners are more likely than Theravādan, to practice vegetarianism, though there are many exceptions, particularly of Theravādan practitioners following vegetarian diets (Kieschnick 2005).

In the Mahāyāna view, vegetarianism reflects the value of *Ahimsa* (nonviolence), which possibly also reveals an influence of Hinduism. The belief in reincarnation, which is foundational to Buddhism and Hinduism, might also play a role in the decision not to eat meat, given that, in this view, animals and humans exchange incarnations throughout the cycles of *Samsāra* (Balsys 2004).

Given the above points, it is possible that, since followers of the living Buddha were mendicants who relied on alms begging and invitations to dine in lay practitioner's homes, the debate over vegetarianism probably did not arise until monks settled in monastic dwellings, whereby, if meat was provided to them by lay practitioners, it was most likely specifically killed for the monks' consumption (Kahila 2012).

The point of debate lies in the relationship of meat consumption to indirect or proxy participation in the killing of an animal; a violation of the first precept, and this is where the debate lies to this day (Kapleau 1981). The Australian monk, Venerable Shravasti Dhammika, points out that the principles of *Ahimsa*, not killing, and not contributing directly to the suffering of other sentient beings (e.g., animals) are a fairly straightforward argument though perhaps overly simplistic (Dhamikka 2009). He illustrates the

complexity of the debate by summarizing the following arguments on the side of meat-eating:

- (1) If the Buddha had felt that a meatless diet was in accordance with the Precepts, he would have said so and in the Pali Tipitaka at least, he did not.
- (2) Unless one actually kills an animal oneself (which seldom happens today) by eating meat one is not directly responsible for the animal's death and in this sense, the non-vegetarian is no different than the vegetarian. The latter can only eat his vegetables because the farmer has ploughed the fields (thus killing many creatures) and sprayed the crop (again killing many creatures).
- (3) While the vegetarian will not eat meat he does use numerous other products that lead to animals being killed (soap, leather, serum, silk, etc.). Why abstain from one while using the others?
- (4) Good qualities like understanding, patience, generosity and honesty and bad qualities like ignorance, pride, hypocrisy, jealousy and indifference do not depend on what one eats and therefore, diet is not a significant factor in spiritual development.

The Five Pungent Spices

According to Mahāyāna texts, such as the *Shurangama Sutra*, another precept – the Third Precept – calls on the practitioner to exercise “sexual responsibility” (Khema 1987), which has significance for dietary practice, namely, in the avoidance of the “Five Pungent Spices,” which include leek, onion, garlic, and asafetida. Again, included in the 48 Secondary Precepts:

Beings who seek samadhi should refrain from eating [the] five pungent plants of this world. If these five are eaten cooked, they increase one's sexual desire; if they are eaten raw, they increase one's anger. (*Shurangama Sutra*, BTTS, 2002)

Avoidance of these spices is not, by and large, a practice of Theravādan Buddhists, as this dietary proscription is not recorded in the Pali Canon.

Summary

Many aspects of Buddhist practice reference food: from the start and end of Siddhartha Gautama's spiritual enlightenment to guidelines crafted centuries later by monks to the debate over vegetarian eating. The Pali Canon is the text that contains the original teachings of the Buddha. There are few dietary proscriptions in this text, though many

recommendations pertaining to eating have been added in later Mahayana writings. The Buddha's advisement to his disciple Ananda that "decay is inherent in all compound things. Work out your own salvation with diligence" (Burt 1982, p. 22) illustrates a foundational orientation toward prescriptions in practice (including those pertaining to food) that the decision to adhere or not adhere has no other worldly ramifications, but only limits one's own advancement toward liberation.

Cross-References

- [Buddhist Perspectives on Food and Agricultural Ethics](#)
- [Christian Ethics and Vegetarianism](#)
- [Christianity and Food](#)
- [Hinduism and Food](#)
- [Islam and Food](#)
- [Jainism and Food](#)
- [Meat: Ethical Considerations](#)

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Buddhist Perspectives on Food and Agricultural Ethics

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Synonyms

Buddhism and GM food; Buddhism and vegetarianism; Food and dukkha or "suffering"

Introduction

The variety of Buddhist traditions makes it difficult to generalize about its food and agricultural ethics. Buddhism as a missionary religion has tended to adapt to local dietary customs, rather than import food restrictions. Another factor encouraging this variety is that Buddhist traditions have often been less concerned about what we eat than how we eat it, since the *dukkha* (suffering or “dis-ease”) that it addresses is rooted in our craving – and food is the second most popular example of human craving. One persistent factor, however, has been a concern to reduce the suffering of animals, which contributed to the development of vegetarianism in East Asia. In general, Buddhism does not emphasize “being natural,” but its emphasis on intentions raises questions about the economic motivations for genetically modifying food.

Traditional Buddhist Perspectives

There are some important distinctions within Buddhism that have had important implications for food practices, especially the difference between monastics and laypeople, and the difference between Theravada (South Asian) and Mahayana (mostly East Asian) Buddhism. Monastics, following the personal example of the Buddha, are expected to live a simple life largely unconcerned about mundane matters such as food. In Theravada Buddhist societies, they eat only before noon (and usually only once). According to the *Patimokkha* rules that regulate their daily lives, “There are many fine foods such as these: ghee, butter, oil, honey, molasses, fish, meat, milk, and curds. If any *bhikkhu* who is not sick should ask for them and consume them, it is an offense entailing expiation” (*Vinaya Pitaka* IV. 88, in Oldenberg, 167). The careful wording implies that the problem is not with these foods themselves, but that desiring them and indulging in them is a distraction from what monastics should be concentrating on. There is no suggestion that lay followers should also avoid them, and the qualification – “any

bhikkhu who is not sick” – exemplifies the pragmatic Buddhist approach: there may be times when even monastics would benefit from consuming them.

The main food issue for Buddhists has been, and continues to be, whether one should be vegetarian – somewhat complicated by the (contested) fact that, according to the earliest accounts we have, the *Mahaparinibbana Sutta*, Shakyamuni Buddha died of a stomach ailment caused or aggravated by eating pork. Buddhist vegetarians have sometimes considered this fact scandalous and denied it, but it is consistent with what is known about the early Buddhist community.

According to the *Vinaya* rules established and followed by the Buddha himself, Theravada monastics are mendicants. They do not grow or normally cook their own food; they beg for it. Being dependent on what is donated to them each morning, they are not required to be vegetarian, with two important restrictions. First, ten kinds of meat are prohibited, usually translated as bear, lion, hyena, tiger, panther, elephant, horse, serpent, dog, and human flesh – but not including beef, pork, or fowl, the types of meat most commonly eaten (*Vinaya Pitaka* VI. 23, in Oldenberg, 193). Significantly, the prohibition seems to involve more concern for the social or physical consequences for the monks themselves than for the animals eaten (Kieschnick, in Sterckx 2005).

The other restriction is often followed by Buddhist laypeople as well as *bhikkhu*: not to eat meat (or fish) if you know or have reason to suspect that it was killed *for you*. “If a *bhikkhu* sees, hears or suspects that it has been killed for his sake, he may not eat it” (*Mahavagga, Vinaya Pitaka*, in Oldenberg, 220).

This would seem to be a compassionate policy, given Buddhist emphasis on not harming living beings. However, the issue of animal suffering is cited in Buddhist texts less often than the consequences for one’s own suffering: it is bad karma to cause the death of any sentient being. Even when those texts mention the importance of compassion, the main concern is often the negative effects of meat-eating on one’s own capacity to cultivate compassion (Kieschnick 2005).

Recently there has been a movement among expatriate Tibetan Buddhists (most of whom now live in the more tropical climate of India) to become more vegetarian, led by the Dalai Lama (who nevertheless sometimes eats meat for health reasons). This development is more consistent with a general Mahayana emphasis on vegetarianism, a concern especially strong in China and doctrinally supported by later Mahayana scriptures such as the *Lankavatara Sutra*, the *Surangama Sutra*, and the *Brahma's Net Sutra*. The main points these texts make (e.g., Suzuki 1932) in favor of vegetarianism are that eating meat:

- Was prohibited by the Buddha (according to the *Lankavatara*)
- Is inconsistent with the first Buddhist precept, which prohibits taking the life of any sentient being
- Produces bad breath and foul smells that inspire fear in other beings
- Inhibits compassion and causes suffering to animals
- Prevents progress in Buddhist practice and causes bad karma (e.g., you might be reborn as a lower animal)
- May be eating a former relative

In the sixth century Chinese Buddhism (unlike South Asian Theravadin Buddhism) began to emphasize vegetarianism. Chinese, Korean, and Vietnamese monastics today continue to abstain from meat and fish (often milk products and fertilized eggs too), and many devout Chinese laypeople are also vegetarian. The laity played a leading role in this transformation: under the influence of Mahayana scriptures such as the ones mentioned above, as well as popular stories about karmic retribution, laypeople came to expect monastics to uphold higher standards of purity and renunciation. By the tenth century vegetarianism had become a minimum standard to be followed by all monks and nuns in China. As in South Asia, monastics are dependent upon lay support, so the concerns of an increasing number of lay vegetarians could not be ignored (Kieschnick 2005).

The only other important and common dietary prohibition is to avoid the five “pungent odors,”

usually translated as garlic, onions, scallions, shallots, and leeks (sometimes chillies and other spices are added to this list). In addition to the often-objectionable smells associated with them – a big concern in a crowded monastic situation – the *Surangama Sutra* claims that they are stimulants to anger if eaten raw and stimulate sexual desire when cooked.

Two points should be kept in mind regarding the above dietary restrictions. First, although monastics in principle have no choice, laypeople choosing to follow them make a personal decision, in the sense that such practices are not required in order to be a Buddhist or follow the Buddhist path. Not observing them may create bad karma and make one's spiritual path more difficult to follow, but that is one's own decision. Second, as mentioned earlier, the key to Buddhist self-cultivation is less the “outer practice” of what one does than the “inner path” of how one does it. This is especially emphasized in Mahayana, which has a more relaxed attitude toward such observances. *Upaya* “skillful means” may sometimes prompt us to break precepts in some situations, because Buddhist rules, like other teachings, are pragmatic rather than absolute. A moral mistake is not an offense against God but an unskillful act that causes more trouble for ourselves. Precepts are vows I make to oneself, that I will try to live in a certain way, with the understanding that when I fall short then I will bear the karmic consequences. This encourages a flexible attitude toward food practices.

Genetically Modified Food

Some contemporary Buddhists and Buddhist organizations have become concerned about food with genetically modified ingredients. For example, according to a December 1996 press release of the Dharma Realm Buddhist Association (based in Burlingame, California), “Genetic engineering of food is not in accord with the teachings of Buddhism. Genetic engineering of food is unwarranted tampering with the natural patterns of our world at the most basic and dangerous level.”

There is, however, virtually no support for the view that “unnatural is bad” in any important traditional Buddhist text, because Buddhism has not valorized nature or “being natural” in the way that the West has often done (although an exception is addressed below). For example, Asian Buddhist attitudes toward stem cell research are usually quite positive, according to “No Buddhist Hard Line on Stem Cells,” an article in *Science & Theology News*:

While many Buddhists in the Western countries view any destruction of embryonic life as wrong regardless of the possibility that a cure for severe diseases like Alzheimer’s or critical spinal cord injuries might be found in a distant future, a considerable amount of Asian Buddhists come to a more permissive conclusion. First of all, *Buddhists are not inclined to see a man-made creation as something competing with a “good” nature*. There is a very positive attitude toward changing nature’s course if it enhances the welfare of all living beings, and more so if it allows medical advancements.

Second, *Buddhist ethics are not principles to be followed as law*. They are not designed as expressions of indisputable human rights or as a consequence of dignity inherent in every human being. Ethics are much more a matter of personal choice; principles like the one of “non-harming” should be followed as guidelines, and in extraordinary circumstances need not be applied in the strictest sense (Schlieter 2004).

Although food is not the issue addressed in this article, its implications apply to GM food as well. Buddhism generally has had a nonnormative understanding of nature, which does not appeal to “natural law” or some similar standard that must be observed. According to Lambert Schmithausen’s examination (1997) of ecological ethics in the early Buddhist tradition, the early texts emphasize the beauty of nature less than the struggle for life, the prevalence of greed and suffering, and most of all the universality of impermanence and decay. Accordingly, Asian Buddhists do not usually object to GM food as being “unnatural” – with one significant exception.

The press release of the Dharma Realm Buddhist Association (a Chinese organization) also

asserts that lack of labeling “is a de facto violation of religious freedom” because it becomes difficult to avoid GM foods, a particular problem for Buddhist vegetarians who may want to avoid nonvegetarian genes in their vegetables. There is nothing in the five basic ethical precepts of Buddhism (to avoid harming living beings, stealing, lying, improper sex, and alcohol) that implies that a scientist should not take a gene from one species and transfer it to another one, especially if such genetic modification would improve the food. For most Buddhists, however, a genetically modified turkey so enlarged for breast meat that it could not walk clearly would be unacceptable, not because such a turkey is unnatural, but because such a chicken would suffer.

Some Chinese Buddhists, however, have expressed concern about transferring animal genes into plant foods. Transferring genes between plants was less objectionable – as long as the genes of garlic, onions, scallions, shallots, and leeks were not used. The simplest explanation for the difference between these concerns brings us back to the point about cultural interaction emphasized at the beginning of this article: Theravadin Buddhists in South Asia follow the earliest teachings, which do not privilege “the natural.” Chinese Buddhism, in contrast, has been influenced by traditional Chinese values that emphasize harmony within society (Confucianism) and living naturally (Taoism).

Emphasis on Motivation

Buddhists often express concern about the *motivations* behind the introduction of genetic modifications into food, highlighting the importance of *cetana* “intentional action” in Buddhist teachings. This emphasis on motivation and intention points at what is distinctive about the Buddhist perspective, so the rest of this article will address that perspective and what it implies for genetically modified food. This involves expanding the evaluation criteria beyond the narrow issue of traditional dietary restrictions by considering broader issues about how consistent GM food is

with Buddhism's basic worldview and understanding of human motivation.

One of the ways that Buddhism explains *dukkha* "suffering" is by tracing it back to the "three poisons" (also known as the "three unwholesome roots," *akusala-mula*) of human motivation: greed, ill will, and delusion (*Numerical Discourses*, Thera and Bodhi 1999). The Buddhist doctrine of karma can be understood in this fashion: when one's actions are motivated by greed, ill will, or delusion, there are negative consequences that increase suffering. To reduce one's *dukkha*, these need to be transformed into their positive counterparts: greed into generosity, ill will into friendliness, and the delusion of a separate self into the wisdom that acknowledges one's nonduality with the world.

In order to consider the implications of this teaching for generic modification, it is necessary to highlight the Buddhist solution to delusion, which means emphasizing the "three basic facts": in addition to *dukkha*, these include *anicca* "impermanence" and *anatta* "nonself" (Thera and Bodhi 1999).

Anicca means that nothing is eternal, everything arising and passing away according to conditions, including ourselves. Socially, this implies an openness to change, including progress – if it really is progress, i.e., an improvement of previous conditions. That technologies are new is not a problem, for the important issue is their effects on our *dukkha*. Buddhists are not nostalgic for some prelapsarian age in the past when life was good because "natural" because there never was such a golden age.

The delusion that *anatta* resolves is duality: our usual sense of self as something separate from the external world that we are "in." This is the most troublesome *dukkha* of all because the groundlessness of our constructed self is usually experienced as a sense of *lack* that we are unable to resolve: we feel the need to make ourselves more real, more substantial, but can never do so because the self is a psychological and social construct having no "substance" of its own that could become real.

In contrast, the wisdom of *anatta* is realizing that nothing has any substantiality or "self-being,"

not only because there is no permanence but also because everything is interdependent on everything else, without any reality of its own. Nevertheless, that we do not need to worry about disturbing genetic "essences" does not liberate us to do whatever we want technologically. The most important criterion for Buddhism remains *dukkha*: does a genetic modification tend to reduce suffering, or increase it? Emphasis on interdependence complicates such an evaluation, and, unsurprisingly, this is where there have been the most problems, due to unexpected "side effects": for example, Bt corn pollen alleged to kill monarch butterflies, allergic reactions due to the Cry9C protein in StarLink corn, cross-pollination of native Mexican maize, genes from genetically engineered plants found in the guts of honeybees, etc.

What do these Buddhist principles imply about GM food? The traditional Buddhist approach focuses on how the three unwholesome roots of motivation – greed, ill will, and delusion – function on the individual level, but an important issue in contemporary Buddhism is whether they also operate collectively and institutionally. If so, does the law of karma still imply unwholesome results – not in some magical way, but in the sense that we reap what we sow? The issue is where the motivations behind the development and introduction of GM food fit into the karmic process, as understood by Buddhism.

For a brief period, "golden rice" genetically engineered to include beta-carotene (which our bodies convert into vitamin A) was proposed for nutritional deficiencies in some undeveloped countries, until it was realized that the amount of beta-carotene that could be added was too small to be significant. A more significant and notorious example of GM, however, was Monsanto's attempt to introduce a patented "terminator gene" into the world's main food crops. In general, genetic modifications seem designed to benefit the food industry more than the food consumer. The focus is on growing and processing food more efficiently and profitably, rather than on taste or nutrition. In a competitive industry, this may end up reducing consumer prices, yet it is not otherwise clear that GM in food has been contributing to the reduction of consumer *dukkha*.

On the other side, there is a noticeable and continuing pattern of unexpected problems, often for those who have not asked for GM food and may have little to gain from it. A few contested examples were cited earlier. Monarch butterflies feed exclusively on milkweed leaves, and in 1998 it was claimed that milkweed contamination from Bt corn pollen was killing them. Also in 1998, Arpad Pusztai, a scientist working in Britain, reported that in his experiments genetically modified potatoes were causing immune system damage to rats. In 2000 StarLink corn, with a protein indigestible to humans, was accidentally released into the human food chain, leading to 37 reports of serious allergic reactions investigated by the U.S. Food and Drug Administration. In 2001 Ignacio Chapela and David Quist, researchers from the University of California, claimed to have discovered that genes from biotech corn had contaminated native maize in the Mexican highlands (Hart 2003).

There are at least two reasons to be concerned about such incidents, in addition to the specific problems they reveal. First, they support what the Buddhist emphasis on interdependence implies: that meddling with the genome of food plants and animals is an extraordinarily complicated process with many types of subtle consequences that are very difficult to anticipate and evaluate exhaustively. As a consequence, we can expect these types of accidents to recur indefinitely. Equally disturbing has been the reaction of the food industry, which has tried to deny or minimize these incidents, and – particularly in the cases of Pusztai, and Chapela and Quist – has undertaken questionable public relations campaigns to impugn their scientific competence and personal integrity.

What do these concerns reveal about institutional motivation? We are reminded that the food industry is a food *industry*. Providing nutritious and healthy food – something more complicated than producing most other consumer products – is not the ultimate goal in this system but the means within a larger economic process in which the focus is on productivity and profitability. Given the extraordinary difficulties with testing for possible adverse effects, along with corporate pressures for short-term profitability and growth,

there are inevitable questions about whether the food industry can be trusted to place top priority on safeguarding the needs, not only of human consumers, but of the ecosystems that its modifications affect. Furthermore, given the strong corporate influence on governmental agencies – especially in the United States – there are also important questions about whether, for example, the Food and Drug Administration can be trusted to prioritize the needs of consumers and the biosphere.

In terms of the karmically significant motivations discussed earlier, the larger ethical problem here might be characterized, from a Buddhist perspective, as *institutionalized greed*.

Is there a correlative problem with *institutionalized delusion*? If there is a problematical duality between the institutional interests of food producers and individual interests of consumers, there is a larger one between the human species and the rest of the biosphere. Since the advent of the modern era, our escalating technological powers have been used to exploit the rest of the biosphere, with little concern for the consequences of our domination for other species. We continue to act as if the other beings with which we share the earth have no value or meaning except insofar as they serve human purposes. The underside of our own evolutionary success is an ecological crisis that is already seriously affecting the quality of our own lives. The nonduality between ourselves and the rest of the biosphere – a collective version of the wisdom that Buddhism emphasizes – means that these two consequences are inseparable. There are no “side effects,” only consequences we like and consequences we do not like. Since we are part of the natural world, if we make nature sick, we become sick. From a Buddhist perspective, this is a paramount example of karma.

The genetic modification of food is only a part of this larger commodification process, but a significant part, since technological modification of other plant and animal species, without a much better understanding of their genomes and how all the genomes of living creatures affect each other, seems to be an especially dangerous example of how our ambitions can outrun our

wisdom. From this perspective, the genetic engineering of food, as presently practiced, may be incompatible with basic Buddhist teachings, because it is inconsistent with the kinds of personal and collective transformation of motivations necessary if the basic problem of *dukkha* – not only human *dukkha* but that of other living beings as well – is to be addressed successfully.

This does not necessarily mean that the genetic modification of food is always something that should be avoided, which would be an “essentialist” claim inconsistent with the primary Buddhist emphasis on reducing *dukkha*. Since Buddhism does not privilege “the natural,” including the natural selection that drives the evolutionary process, there is the possibility that some genetic modifications might actually serve to reduce *dukkha*. Although it would need to be very carefully tested, there is the possibility that a vitamin A-enriched rice might someday be a benefit to humankind without being a threat to the rest of the biosphere.

Summary

Historically, the most important issue regarding food has been whether or not Buddhist emphasis on compassion implies vegetarianism. Theravadin (South Asian) Buddhists generally eat meat and fish unless they know or suspect that it was killed purposely for them. Devout Mahayana Buddhists in East Asia are usually vegetarian.

Recently the issue of genetic modification has become controversial. From a Buddhist point of view, technologies are neither good nor bad in themselves. Nor are they neutral. That is because technologies cannot be separated from the larger

social, economic, and ecological contexts within which they are devised and applied. The Buddhist understanding of karma as *cetana* implies that personal and institutional motivations are an essential part of that context. This means that any attempt at evaluating a technology such as the genetic modification of food needs to take the motivations behind those innovations into account.

Cross-References

- [Ethical Matrix and Agriculture](#)
- [Hinduism and Food](#)
- [Vegetarianism](#)

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Canada, US-EU Beef Hormone Dispute

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Synonyms

Consumer preferences; Growth-promoting hormones; Labeling; Precautionary principle; Risk assessment; Sanitary and Phytosanitary Agreement; WTO dispute panel

Introduction

Citing public anxieties about the use of hormones in livestock production in the 1980s, the European Union (EU) banned the nontherapeutic use of a number of synthetic and naturally occurring hormones in domestic beef production and subsequently banned imports of beef produced using these productivity-enhancing hormones. The US and other beef-exporting nations such as Canada argued that the import ban was not justified on scientific grounds and was instead disguised protectionism. Thus began a long-running and often acrimonious trade dispute between the EU and the USA along with Canada. The trade dispute

highlights the challenges of dealing with consumer suspicions of a technology to all intents and purposes deemed “safe,” the conflict between a precautionary principle approach to technology versus a science-based risk assessment approach, and the challenges for the international trade architecture in distinguishing between policies motivated by nefarious protectionism and genuine consumer concerns. At the heart of the ethical dilemma posed by the US-EU beef hormone dispute is the reality that the World Trade Organization (WTO) was not set up to deal with consumers’ demands for protection (who are usually expected to benefit from trade liberalization) – its primary focus traditionally has been demands for protection from domestic producers. The beef hormone dispute proved to be a challenging first test of the WTO dispute settlement mechanism.

This essay outlines the origins of the US-EU beef hormone dispute and traces the turbulent history of the dispute through various WTO rulings, responses, and outcomes. The chief arguments put forth by the EU in defense of its beef import ban and by the USA and Canada in challenging the import ban are examined. The ethical issues raised by the trade dispute and potential solutions are explored with reference to key literature on the topic. The essay concludes by discussing the implications for trade policy of the clash between a scientific rationality and a social rationality approach to new technologies.

Origins of the Beef Hormone Dispute

Growth-promoting hormones are commonly used internationally to enhance the production efficiency of livestock. The beef hormone trade dispute revolved around six hormones that were licensed for use in North America but banned in the European Union: estradiol-17 β (also called oestradiol-17), progesterone, testosterone, melengestrol acetate, trenbolone acetate, and zeranol. The first three are produced naturally in animals and humans, while the others are synthetic hormones (Kerr and Hobbs 2005). The three naturally occurring hormones are permitted for animal therapeutic purposes in the EU if used under veterinary supervision.

The EU hormone ban arose from growing public anxieties over the use of hormones in livestock production in the late 1970s and early 1980s (Roberts 1998). In the late 1970s, Italian schoolchildren began exhibiting signs of premature development which was believed to be linked to the use of illegal growth hormones in veal or poultry served in school lunches. A public furore ensued, with further investigations discovering residues of an illegal growth promotant in samples of veal-based baby food sold in Italy. These widely publicized “hormone scandals” prompted veal boycotts across a number of European countries and led to official proposals to ban the use of growth-promoting hormones in cattle production. The first European Commission Directive partially banning the use of growth hormones was passed in 1981, with a stronger ban on their use both domestically and in imported beef adopted in 1985 – subsequently annulled following a European Court of Justice challenge – and then readopted in 1988 (Roberts 1998).

Following the trade ban, exports of beef products from the USA and Canada to Europe fell precipitously, with US beef exports falling from 76,000 t in 1982 to just 4,500 t by 1990 (Kastner and Pawsey 2002). The value of lost exports from the USA and Canada has been estimated at over 100 million dollars (Roberts 1998). The USA, Canada, and other beef-exporting nations objected to the ban on imports of beef, arguing

that an overwhelming scientific consensus existed on the safety of beef produced using approved growth hormones. In addition to almost 50 years of scientific study, it was argued that the long-term use of hormones in beef production had been widespread in a number of countries for decades with no known food safety or health consequences. In the view of the USA and Canada, the absence of a scientific basis for the import ban pointed toward disguised protectionism as the true underlying motivation. Beef producers within the EU were placed at a significant competitive disadvantage vis-à-vis producers in the USA and Canada since they no longer had access to the productivity-enhancing hormones as an input to beef production. Furthermore, there were suspicions that the domestic ban on hormone use in the EU may also have been motivated by a desire to reduce the increasingly burdensome costs of the European Common Agricultural Policy (CAP) by lowering productivity and thus reducing aggregate beef supply (Roberts 1998).

For its part, the EU maintained that an appropriate level of protection was a societal value judgment and that it had the right to adopt a precautionary approach seeking a “zero risk” level if it so chose. It claimed that scientific questions still remained regarding the long-term effects of hormone use, as well as possible synergistic effects with hormones taken for medical purposes. Apparent widespread consumer opposition to the use of the technology also factored into the EU’s position, creating a political challenge for decision makers. The tendency for politicians to exercise “political precaution” when faced with public pressure to act even when the scientific evidence suggests little evidence of a problem has been recognized in other contexts (see Kerr 2009).

The WTO Dispute Settlement Mechanism

Protracted bilateral negotiations between the parties failed to resolve the dispute, and in the late 1980s, the USA and the EU entered a period

of retaliatory and counter-retaliatory trade measures. The existing mechanisms within the General Agreement on Tariffs and Trade (GATT) architecture proved unable to resolve this dispute. In 1995, however, the new World Trade Organization (WTO) came into existence, bringing with it strengthened trade rules around the use of trade restrictions for sanitary and phytosanitary reasons, as well as a new dispute settlement mechanism.

The WTO Sanitary and Phytosanitary (SPS) Agreement allows the imposition of trade barriers in instances where a country determines that imports may pose a threat to plant, animal, or human health. An SPS trade measure, however, must have a sound scientific rationale. In the cases of suspected SPS hazards, where a country claims there is insufficient information for a full risk assessment, the SPS Agreement explicitly states that precautionary trade measures should be temporary and any country invoking SPS measures should actively seek to fill in the gap in scientific information (Kerr and Hobbs 2005). The SPS Agreement defers to various international scientific bodies for a scientific consensus on acceptable levels of risk, including the Codex Alimentarius Commission in the case of food. In 1995 a Codex Committee voted narrowly in favor of standards governing the continued use of five of the six hormones (Kastner and Pawsey 2002). The USA and Canada argued that the EU beef hormone ban was in violation of the SPS Agreement given the lack of scientific evidence of a threat to health, and in 1996 both the USA and Canada applied for WTO dispute panels to adjudicate the EU hormone ban.

The WTO panel rulings followed in 1997, concurring with the USA and Canada that the EU ban on beef treated with growth-promoting hormones was inconsistent with its obligations under the SPS Agreement. The WTO Appellate Body was subsequently asked to review the dispute panels' decisions and in a subsequent ruling in January 1998 upheld the original WTO dispute panel rulings, finding that the EU had not produced scientific evidence to support the claim that the ban was justified (Roberts 1998). While the EU initially indicated that it would comply

with the ruling, a protracted period of negotiation ensued between the EU and the USA and Canada regarding the time frame for implementation, with the matter eventually being referred to a WTO arbitrator. Ultimately the period of time required for the EU to come into compliance expired in May 1999 at which point the EU indicated that it would not comply with the WTO ruling. This fraught first test of the newly established WTO dispute panel settlement mechanism threatened to undermine the credibility of the entire WTO dispute settlement architecture with repercussions that reverberated far beyond the economic significance of the loss in trade represented by the beef hormone dispute itself.

Refusal to comply with a dispute panel ruling, while expected to be rare, had nevertheless been allowed for by the framers of the WTO. A country that chooses not to comply can either offer compensation to the affected party (or parties) or accept retaliation against alternative products up to the value of the trade affected by the "illegal" trade measure. As Kerr and Hobbs (2005) indicate, countries rarely choose the compensation option because it is set to the gross value of the trade loss, while retaliation only results in a net value of trade loss since the goods retaliated against can find alternative markets. The EU opted for retaliation. Consequently the USA and Canada imposed 100 % ad valorem tariffs on a range of agricultural commodities concentrated on politically influential countries in the EU: primarily against exports from France, Germany, Italy, and Denmark (the latter being a large livestock exporter). Kerr and Hobbs (2005) detail the initial retaliatory product list, while Johnson and Hanrahan (2010) chart the changes in these product lists over time. Among others the affected products included meat of bovine animals, meat of swine, Roquefort cheese, onions, cucumbers, tomatoes, truffles, mustard, soups, hams, chocolate, jams, yarn, oats, sausages, and certain juices.

Retaliation is widely regarded as counterproductive to the fundamental purpose of the WTO since it means putting in place additional trade barriers. Retaliation, while imposing costs on the EU, could do little to ease the economic burden on the affected beef industries in the USA and

Canada. The result is a loss in economic welfare: consumers in the USA and Canada pay higher prices for a range of food products, while producers in innocent industries in the EU suffer from the imposition of tariffs on their exports and lost market share. To further increase the pressure on the EU to review its position on the hormone ban, the USA threatened to employ a so-called carousel strategy whereby the list of retaliatory products is frequently changed. Intermittently and randomly changing the imposition of retaliatory tariffs across different products is a more effective retaliatory strategy because it introduces greater levels of instability for exporters in the affected country and should increase internal political pressure to comply with the WTO ruling (see Kerr and Hobbs 2005, for a more detailed discussion of the carousel strategy). For its part, the EU appeared to take the threat of carousel seriously and has attempted to have the practice outlawed as a WTO retaliatory measure.

Over the following years, the trade dispute remained unresolved, with the EU maintaining its import ban on beef produced using growth hormones and the USA and Canada maintaining their retaliatory tariffs. The EU continued to commission research studies in an effort to garner scientific support for its hormone ban. In 2003, based on a risk assessment report suggesting that estradiol-17 β may be carcinogenic, the EU issued a new directive permanently banning estradiol-17 β and provisionally banning the other five hormones while further studies were undertaken. Claiming that this now placed it in compliance with its WTO obligations, in 2004, the EU requested WTO consultations to have the USA remove its retaliatory trade measures. In 2005 the EU initiated new WTO dispute settlement proceedings against the USA and Canada regarding their continued retaliatory trade sanctions. A March 2008 WTO panel ruling found all three parties to be at fault: the EU for still failing to present sufficient scientific evidence to justify the import ban and the USA and Canada for procedural violations in maintaining their trade sanctions. The WTO Appellate Body subsequently heard appeals by all three parties to the

earlier dispute panel ruling and in October 2008 issued a ruling allowing for continued trade sanctions against the EU but also allowing the EU to continue its ban on beef imports treated with growth hormones. This apparent mixed ruling did little to resolve the escalating dispute between the parties, and following US announcements in late 2008 and early 2009 signaling an increase in retaliatory tariffs on a wider range of products, the EU prepared to file a new WTO challenge against the USA and Canada regarding their use of retaliatory measures (Johnson and Hanrahan 2010).

Bilateral negotiations continued, and in May 2009, the USA and the EU signed a memorandum of understanding (MOU) outlining an agreement to resolve this 20-year trade dispute through a series of phased-in measures allowing expanded market access into the EU at zero duty for beef produced without growth-promoting hormones (so-called high-quality beef), balanced by a phased reduction in the removal of the US retaliatory import duties. Canada and the EU developed a similar MOU. The amounts of the US and Canadian (and third country) beef allowed into the EU by this resolution of the trade dispute are remarkably small: phased-in duty-free access for 48,200 t of non-hormone-treated beef (Council of the European Union 2012). In return the USA and Canada suspended their retaliatory import duties. Nevertheless, these agreements appear to have drawn to a close a protracted and bitter trade dispute that ranged over two decades and at times threatened the credibility of the entire WTO dispute settlement mechanism. The ultimate outcome appears to have been a reluctant acknowledgement by the USA and Canada that the EU was not going to lift its ban on hormone-treated beef regardless of the weight of scientific evidence to the contrary and that further retaliatory trade measures would only serve to escalate trade tensions at a time when closer trade ties were being contemplated (an EU-Canada Free Trade Agreement is currently under negotiation; an EU-US trade and investment pact is being contemplated) (Viju and Kerr 2011; ICTSD 2012).

Issues Raised by the Dispute

Embedded in the beef hormone dispute are a number of controversial, ethical, social, and policy dilemmas: a social rationality approach to policy decisions – including emphasis on consumers’ “right-to-know” and the use of the precautionary principle as a decision tool – versus a scientific rationality approach to policy decisions; challenges in distinguishing between genuine public concerns versus nefarious protectionism disguised as public interest; foregone benefits, the loss in economic welfare from trade barriers and retaliatory measures; and whether labeling of beef would have been a viable solution.

At its heart, the beef hormone dispute reflected a fundamentally different approach to policy decisions at the technology-safety interface in the EU relative to the USA and Canada. This difference is also manifest in other technology contexts, most notably the regulation of genetically modified foods. While risk analysis plays a central role in both policy processes, science is rarely definitive: one cannot “prove” that something is 100 % safe. A *scientific rationality* underpins the US and Canadian approach to new technologies, while the EU has tended to adopt a *social rationality* stance (see Isaac (2002) and Isaac and Hobbs (2002), for a detailed discussion of scientific versus social rationality in a policy context).

Underlying scientific rationality as the arbiter of policy decisions is a basic belief in technological progress, a consideration of both recognized and hypothetical risks, a focus primarily on safety and health considerations in risk assessments, an innocent-until-proven-guilty approach to the burden of proof, an acceptance of minimum risk tolerance levels, a strictly scientific interpretation of the precautionary principle, and the use of mandatory labeling confined to circumstances where hazards may exist (Isaac 2002). In contrast, technological precaution lies at the heart of a social rationality stance, with consideration not only of recognized and hypothetical risks but also of speculative risks, the burden of proof requirements resemble a guilty-until-proven-innocent

approach, risk tolerance levels favor zero risk, there is a social interpretation of the precautionary principle, and mandatory labeling is utilized more broadly based on consumers’ right-to-know (Isaac 2002). These divergent regulatory trajectories set the scene for different regulatory decisions on the approval of new technologies and processes (or the removal from the market of existing technologies and processes as new information emerges). Asymmetric and asynchronous approvals pose a significant challenge in international markets, ultimately leading to trade disputes.

The beef hormone dispute highlighted the challenges in dealing with trade barriers put in place due to apparent consumer concerns about a product or a technology. The challenges are twofold: first, distinguishing between genuine consumer concerns and nefarious protectionism, and second, even given genuine consumer anxiety, how should the trade policy architecture respond if the balance of scientific evidence suggests little to no risk? One might expect differences in quality perceptions across countries for cultural, historical, and social reasons (Bureau et al. 1998). A number of studies have examined European consumer preferences for beef produced with and without the use of growth-promoting hormones, as well as the extent to which these preferences differ across different countries (see, e.g., Lusk et al. 2003; Alfnès 2004; Tonsor et al. 2005). Using stated preference techniques, these studies find that consumers tend to discount hormone-treated beef and express a preference for hormone-free beef. The strength of preferences, however, varies among consumers and often across countries. For example, Lusk et al. (2003) found that French consumers were willing to pay relatively more for hormone-free beef than consumers in the UK, Germany, and the USA, and although consumers in the latter three countries did exhibit a positive willingness-to-pay (WTP) for hormone-free beef, there was no statistical difference between them. Within-country preferences also differed: heterogeneity in consumer attitudes toward hormone-treated vs. hormone-free beef was found to be stronger in the USA and the UK, while consumers

in Germany and France tended to exhibit more homogenous preferences (Lusk et al. 2003). In a separate study, Tonsor et al. (2005) find that consumers from the UK, France, and Germany exhibit distinctly different preferences toward hormone-free beef.

Hormone-treated beef is a credence attribute, meaning that its presence cannot be detected either before purchase or after consumption. In the absence of labeling, credence attributes create quality uncertainty in markets. Consumers who regard hormone-treated beef as lower quality, and who are unable to distinguish between hormone-treated and hormone-free beef, will reduce their demand for beef given quality uncertainty. The loss in welfare due to an adverse quality effect must be balanced against the potential gain in welfare from a technology that enhances productivity and lowers costs (a similar argument pertains to genetically modified food; see Gaisford et al. 2001, Chap. 4). Bureau et al. (1998) show that trade liberalization in the presence of information asymmetry can be welfare reducing in the absence of labeling. To avoid these welfare losses, labeling is frequently proposed as a solution to information asymmetry. One of the potential solutions to the EU-US/Canada beef hormone dispute, therefore, would have been to allow production and importation of hormone-treated beef within the EU and to identify through labeling either hormone-free or hormone-treated beef.

While it sounds like a simple solution, in reality labeling raises some thorny policy questions. Should labeling be mandatory or voluntary? Should hormone-free beef be labeled or should labeling be used for hormone-treated beef? A voluntary hormone-free label should be welfare enhancing if the benefits (removal of quality uncertainty) outweigh the costs of implementing and enforcing the label. If the segregation and labeling costs are prohibitive, however, or if there is widespread cheating (mislabeling of hormone-treated beef as hormone free to capture a market premium), then a voluntary hormone-free label would fail to resolve the quality uncertainty in the market. On the other hand, requiring mandatory labeling of hormone-treated beef

introduces further distortions into the market. Since consumers are heterogeneous in their attitudes toward the use of hormones in beef, not all consumers benefit from the additional information, and there are questions over the signal sent by the label. Under WTO rules countries are permitted to introduce mandatory labeling requirements only if foreign products are treated no less favorably than domestic products (Roberts 1998). Labeling for health or safety reasons must have a scientific basis. If requiring the labeling of hormone-treated beef implied a health risk where none existed, then it may have done little to assist consumers in making informed choices and would have discriminated against beef imports from countries where use of productivity-enhancing hormones was standard practice. Whether some consumers have a “right-to-know” regardless of the potential economic costs to other groups in society remains a controversial issue and is apparent in other dilemmas such as animal welfare and genetically modified organisms.

Summary

The beef hormone dispute persisted for more than two decades and proved difficult to resolve despite the existence of the WTO SPS Agreement and the WTO dispute settlement mechanism. At its heart lay divergent approaches to agricultural technologies and the use and interpretation of science-based risk assessments as an arbiter of policy decisions. The balance of evidence suggested little scientific support for a ban on imports of hormone-treated beef on the basis of health risk. This finding was upheld through numerous WTO processes. Yet some European consumers express a clear preference for hormone-free beef. Retaliatory trade measures, meant to force compliance with WTO rulings, introduce further trade distortions in the long run. The ultimate significance of the beef hormone dispute stretches well beyond the economic losses from forgone beef trade and represents a potentially problematic precedent for the international trade policy environment.

Cross-References

- Food and Agricultural Trade and National Sovereignty
- Food Boycotts
- Food Labeling
- Food Legislation and Regulation: EU, UN, WTO and Private Regulation
- Food Risks
- Free Trade and Protectionism in Food and Agriculture
- The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement
- WTO Dispute Settlement and Food and Agricultural Trade

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Cannibalism

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Synonyms

Anthropophagy; Eating humans

Introduction

Cannibalism, or anthropophagy, is the consumption of the flesh of one human by another. The word “cannibalism” itself comes from the Spanish “Canibales” – a name for the Carib tribe in the West Indies thought to engage in ritualistic cannibalism. The term “cannibalism” can also be used more broadly to mean the consumption of

members of one's own species. The Greek-based term "anthropophagy" quite literally means "eating humans," regardless of who (or what) is doing the eating. Historically, a great variety of arguments have been offered against cannibalism, and virtually none in its favor. Nevertheless, reflection on cannibalism raises many very difficult conceptual issues, and few arguments against it are without serious problems.

To assess the arguments against cannibalism, three kinds of cannibalism will be distinguished. The relevance of the natural law tradition to cannibalistic activity will then be discussed. Following this, the relationship between respect for human beings and cannibalism will be explored, as well as the relevance of disgust to morally assessing acts of cannibalism. Finally, cannibalism will be assessed from the point of view of three traditional moral theories (rights-based deontology, utilitarianism, and virtue ethics).

Varieties of Cannibalism

In assessing the morality of cannibalism, three different kinds of cannibalism should be distinguished.

First, cannibalism is sometimes used as part of religious or cultural rituals. The cultural practice of anthropophagy can be called ritualistic cannibalism (or "learned cannibalism"). There have been many reports of groups of people around the world engaging in such ritualistic practice. The aims of such cannibalism vary. Rituals may involve the consumption of one's ancestors as a way of showing respect to them, or it may involve other motivations: the desire for revenge, to crush one's enemy, to eliminate internal or external threats, to magically stave off negative forces, or simply to feast. The indigenous population of Easter Island and Papua New Guinea, to cite two familiar examples, is known to have engaged in various kinds of ritualistic cannibalism. The extent of anthropophagic ritual and practice today is not certain, but the practice undoubtedly continues in some parts of the world.

Cannibalism, when used to prevent starvation and not as a part of a cultural practice, can be

called emergency cannibalism (or survival cannibalism). The famous Donner Party of 1846 as well as the Uruguayan rugby team that crashed in the Andes Mountains in Chile in 1972 both engaged in this form of cannibalism. There are also countless accounts of emergency cannibalism as a result of shipwreck. The aim of emergency anthropophagy is, by definition, survival.

A third kind of cannibalism can be called fetish cannibalism. This form of cannibalism is "fetishistic" because it is related to a fetish, often though not always sexual in nature, on the part of the person who engages in cannibalism. In such cases, cannibalism is practiced as a means of fulfilling the desire to consume human flesh. Jeffrey Dahmer is perhaps the most famous case of such cannibalism. Armin Meiwes, who was tried and convicted in German courts in 2002, likewise participated in fetish cannibalism when he killed and consumed Bernd-Jurgen Brandes, who had answered an advertisement Meiwes posted on the Internet seeking a volunteer who wanted to be killed and eaten.

Arguments from Natural Law

Discussions of natural law in the modern era (1600–1800) made frequent use of the figure of the cannibal. Discussion of cannibalism itself was widespread in the nineteenth century, largely due to the stories of travelers who had visited places where cannibalism was alleged to occur (Avramescu 2009). Herman Melville's *Moby Dick* provides one literary example of the much discussed figure of the cannibal. Interestingly, however, Melville presents the cannibal (the character Queequeg) as both honorable and worthy of our respect – *not* as a moral monster. In a similar vein, in what is perhaps the most famous essay on cannibalism, Michel de Montaigne (1993) acknowledges the immorality of cannibalism, but also insists that the practices of European nations (involving, e.g., torture) are far worse. While cannibalism may well be barbarous, Montaigne argues, it is no more barbarous than the actions of the so-called "civilized" world. Indeed, Montaigne suggests that it is *less* barbarous.

Many historical reports of cannibalism are now widely regarded as unreliable. Allegations of cannibalism in centuries past were sometimes made to justify the oppression of indigenous peoples or to secure funding to “civilize the savages.” It is difficult to know the exact extent to which allegations of cannibalism among indigenous peoples reflected such motivations. Certainly, though, the amount of cannibalism alleged to exist in the world was highly exaggerated throughout the nineteenth century and into the twentieth.

The central argument used against cannibalism in all its forms in the modern period relied on the concept of natural law. According to natural law theory, certain kinds of practices violate the order of the world – an order that is variously conceived as coming from some higher being (God) or as stemming from things like human nature. According to some of the standard arguments, the consumption of members of one’s own species among human beings violates this natural order and is therefore immoral. In the modern period, the relationship between cannibalism and natural law is discussed by thinkers as diverse as Hugo Grotius (2009), Samuel Pufendorf (1991), John Locke (1997), Michel de Montaigne (1993), and Thomas Malthus (1999), to name only a few.

Arguments from natural law, however, face significant objections. First, it is very difficult to determine (1) whether or not anything like “natural law” actually exists and (2) what the content of this law actually is. Indeed, cannibalism has sometimes been taken to be evidence against the existence of natural law (Avramescu 2009). Moreover, appeals to natural law frequently articulate one’s point of view rather than providing a justification for it. This can be seen when one’s only reason for saying that something is wrong is that the thing is “unnatural.” Leaving aside how we are to know what things are and are not natural (a thorny issue), it is often contended that claims about what ought to be the case do not follow from facts about what is the case. This is typically called the “is/ought” problem and can be traced back to David Hume. One cannot claim that there shouldn’t be cannibalism (an “ought” claim) based on the claim that cannibalism is unnatural (an “is” claim).

One can even argue, however, that cannibalism *is not* unnatural. On one view, anything that natural biological organisms do is itself natural. If this is correct, then cannibalism is as natural as many other cultural practices – marriage, funeral rites, festivals, and so on. Some anthropologists have even argued that cannibalism was common among our evolutionary ancestors.

Thus, the appeal to “unnaturalness” faces two central objections: (1) something may well be morally permissible even if unnatural (this is an implication of the “is/ought” distinction), and (2) cannibalism may not be unnatural.

Appeals to natural law sometimes involve appeals, not to the natural order, but to the will of God. If cannibalism violates the will of God, one standard argument goes, it violates natural law. The difficulties with this view are fairly straightforward: (1) it is impossible to prove that any particular act either is or is not the will of God (there are many possible religious traditions to appeal to, and no definitive argument that one is superior to another), and (2) it is possible, in response to this line of argument, to simply deny the existence of God.

Respect and Cannibalism

Despite arguments against cannibalism based on the doctrine of natural law within religious traditions, many of these very same religious traditions involve at least symbolic cannibalism. The Eucharist, for example, involves the consumption of (a symbol of) the flesh and blood of Christ. One is eating the flesh of another (partial) human, at least symbolically, in communion.

The roots of this practice are shared by more obviously cannibalistic traditions. Cannibalism involves literally incorporating the human being who is eaten. This is sometimes described as a means by which one pays respect to the deceased, allowing him to live on (symbolically) within the bodies of those who survive him. In this respect, ritualized cannibalism has sometimes been a means by which one honors the dead rather than a means by which to

denigrate or disrespect the dead. Similarly, the Eucharist involves the internalization of Christ's flesh as a means to symbolically make Christ a part of oneself.

In the case of ritualistic cannibalism, then, it is simply not clear that there is anything intrinsically disrespectful in *all* anthropophagic cultural activities. If some forms of ritualistic cannibalism are not inherently disrespectful, it follows that cannibalism itself is not inherently disrespectful (i.e., there is at least one kind of cannibalism that is consistent with maintaining respect for the cannibalized).

In the case of emergency cannibalism, it can be argued that no disrespect is intended (though this does not guarantee that disrespect is not present). In emergency cannibalism, after all, one only consumes human flesh to avoid starvation. Nevertheless, one can certainly imagine some cases of emergency cannibalism that involve disrespecting those eaten. This indicates that the circumstances of the cannibalism will be the determining factor in deciding whether or not respect for persons has been violated.

In the case of fetish cannibalism, disrespecting the person cannibalized is much more common. In most cases of this kind of anthropophagy, a person is murdered and then eaten. All cases of murder (though not necessarily all cases of killing) involve disrespecting the person murdered (one doesn't acknowledge the person's desire and right to live). Nevertheless, there is at least one case in which fetishistic cannibalism was contingent on the consent of the cannibalized. In the 2002 case of Armin Meiwes, Meiwes actually released one potential victim of cannibalization when the voluntary victim revoked consent (Wisniewski 2007). He also went to great lengths to document the consent of Bernd-Jurgen Brandes, utilizing videotaping as well as written consent prior to actually killing and eating him. If respect for persons involves requiring their consent to whatever one intends to do to them (an arguable, but nevertheless plausible, account of what respect involves), then fetish cannibalism is at least in principle consistent with respect for persons (even if in practice it is usually not).

Consent and Cannibalism

Some argue that consent to cannibalism mitigates any wrongdoing involved in it. Provided it is possible to consent to cannibalism, then, consent transforms an otherwise immoral act into a permissible one. One response to this argument is to claim that consent cannot be given, as only someone who is irrational would agree to be eaten. This reply, however, is circular. Fetishes are by definition irrational. It does not follow from this that one cannot consent to participate in a fetish. If one insists all cases of fetish cannibalism are illegitimate, one has simply presupposed that it is impossible to consent to cannibalism. Of course, this is the very question which is at issue in moral debates about anthropophagy (is cannibalism ever permissible?). If one begins with the assumption that cannibalism cannot be the object of consent, one cannot then claim that this assumption proves the impermissibility of cannibalism. More argument is needed (Wisniewski 2004, 2007).

Another objection that can be raised against the view that consensual cannibalism is acceptable goes as follows: any moral doctrine which concludes that cannibalism is moral must be mistaken. If an emphasis on consent has this implication, then there must be something wrong with the doctrine that consent can transform an immoral action into a moral one. If consenting can justify cannibalism, the objection runs, then it can justify *anything*. This by itself might be taken to indicate that consent cannot be the only measure of the moral permissibility of an action. Of course, this line of objection also takes for granted the immorality of cannibalism rather than establishing it.

Arguments from Disgust

The most common immediate reaction to cannibalism is to claim that the practice is disgusting. The moral relevance of an appeal to disgust, however, is hotly contested. While some philosophers argue that disgust *can be* morally relevant, few argue that it is always so. This means that any appeal to disgust must also rely on additional

arguments if it is to make the case that disgust *in regard to cannibalism* demonstrates the immorality of that practice. Given that picking one's nose is disgusting, after all, hardly entails that it is immoral. Even if we all accept that eating another human being is disgusting, then, we have not yet shown that it is also immoral, let alone that it is immoral *because* it is disgusting.

Rights-Based Arguments

One argument against cannibalism states simply that cannibalism violates a duty we owe to other persons. This is sometimes captured by an appeal to the rights of other human beings. Specifying which right is violated by cannibalism, however, is a difficult task. If one claims that we have a right not to be eaten, one has simply asserted the conclusion in advance of providing evidence for it. To say that humans have a right to not be eaten is equivalent to saying that cannibalism is wrong (one cannot *conclude* that cannibalism is wrong simply by asserting it in alternative language).

To make a case against cannibalism based on human rights, then, one must appeal to a right that is not equivalent to the right not to be cannibalized and then show that cannibalism violates this right. There are several difficulties that must be overcome to make such a case.

Murder is not cannibalism. One might accept the claim that all persons have a right to life and thus conclude that any killing for the purpose of cannibalism violates this right to life while also maintaining that cannibalism itself does not violate this right. In other words, to kill in order to cannibalize is indeed a violation of the right to life; to cannibalize one who is already dead, however, does not violate this right.

One theoretical difficulty with the appeal to rights goes as follows: some have argued that only *living subjects* can have rights. On this view, the dead possess no rights, as the dead, strictly speaking, *do not exist*. On this view, traceable to Epicurus and Lucretius, death is simply nonexistence. One must exist to have rights. Therefore, the dead cannot be said to have rights.

There are two plausible responses to this line of argument. First, one can argue that the dead do, in fact, have rights (or, put alternatively, that the dead can still make demands on the living). Second, one can argue that the living have rights that *involve* the dead, even if the dead themselves do not have rights.

The claim that the dead have rights is widely enshrined in western law. We protect the wishes of the deceased by carrying out their wills; we utilize laws to govern the exhumation of human remains, presumably because we collectively regard the dead as having a right to "rest in peace." Of course, the fact that such rights are enshrined in law does not entail that they are justified. Nevertheless, such laws provide some evidence for the view that many *regard* the deceased as entitled to certain kinds of respect.

The claim that persons have obligations *regarding* the dead, even if the dead have no rights, is sometimes discussed in terms of indirect duties. Because a person has property rights, for example, I have a duty to that person to refrain from destroying his or her property. In this way, I have an indirect duty *to the property* because I have a direct duty to the person who owns this property. Analogously, one might think I have indirect duties to the dead because I have direct duties to the living. Thus, desecrating or disrespecting corpses, on this view, would amount to violating a duty I have to living human beings – perhaps the family of the deceased, who do not want their deceased loved ones interfered with, or perhaps even to society at large.

The question still remains, however, as to which right in particular is violated by cases of cannibalism. An appeal to the right to be treated with respect fails for reasons discussed above (see Respect and Cannibalism). After all, there are cases in which respect is shown *by cannibalizing a person*. Nevertheless, one might acknowledge that the means through which one shows respect differ across different cultures. On this view, then, showing respect will be an absolute obligation (there is a universal right to it), even though the *means by which* one shows respect will differ across cultures. The conclusion here

must be substantially weaker – namely, that it is wrong to cannibalize only in those cases where cannibalism represents disrespect for the dead. This conclusion, of course, is compatible with the claim that cannibalism is not universally wrong.

One might similarly argue that cannibalism violates a central principle of deontology, the ethics of duty. In one of its most famous formulations, duty requires that we treat human beings “as ends and never merely as means” (Kant 1999). To eat another human being, on this view, involves treating that person as a means (food) to a particular end (nourishment) and hence cannot be defended.

Two substantial problems can be raised against this deontological argument, however. First, one might argue that the right to be treated as an end (and not a mere means) does not extend beyond the grave. That is, one might argue that we only have a duty to respect the *living*. If this is correct, the above argument fails in the case of cannibalism, despite the fact that the duty holds among the living. More persuasively, one can point to ritualistic cannibalism as an example of respecting the dead (at least in those cases where it is used for this purpose). This seems to indicate that respect for persons, alive or dead, is compatible with at least some kinds of cannibalism and hence that cannibalism does not necessarily involve the absence of respectful treatment.

An appeal to universal rights not to be cannibalized has some unexpected consequences. In a strict case of emergency cannibalism, for example, an absolute and universal right against cannibalism entails that starving to death is morally required. Many people find this result counterintuitive. An emergency situation, by its very nature, is exceptional. Moreover, one might argue that certain otherwise immoral actions are permitted when these actions are necessary for life preservation. These concessions entail, however, that the prohibition against cannibalism cannot be absolute. Once we grant that there are some conditions under which cannibalism is acceptable, we grant that the range of permissible cases may be wider than we initially suspected.

Utilitarian Arguments

Utilitarianism is the view that actions are right or wrong in virtue of the consequences they produce, where we measure the consequences of an action in terms of some predefined good (pleasure, happiness, interests, preferences, etc.; see Mill 2002). Utilitarian arguments can also be given against cannibalism. Before considering these arguments, one should distinguish between those arguments that aim to show it would be immoral to legalize cannibalism (a policy question) and those arguments for the view that any individual act of cannibalism is immoral. Utilitarian consideration can arguably establish the first claim; they fall substantially short of the second.

On the policy side of the issue, one might argue that allowing (or encouraging) cannibalism will shape the way individuals within a society understand their fellow human beings. If we come to see one another as a source of food, this argument goes, we will have a fundamentally diminished view of other persons, and the consequences of this will be both far-reaching and dire. Because a healthy society must cultivate and maintain mutual respect among its citizens, accepting cannibalism when it occurs violates utilitarian principles. Ultimately, accepting cannibalism will diminish the well-being of every member of the society that practices it. Further, one might argue that a society in which the dead are not permitted to “rest in peace” would create anxiety *among the living* regarding what may befall their mortal remains. An increase in this anxiety, it might be argued, would thus produce more pain than pleasure (and hence should be rejected on utilitarian grounds).

Of course, the utilitarian must consider both short-term and long-term consequences. Given that there have been cannibalistic societies where the above argument does not seem to hold, one can respond to the above argument by pointing out that there is no necessary connection between anthropophagy and viewing persons as having diminished worth. After a few generations, the shock of cannibalism may no longer cause the kind of adverse reactions we currently

associate with it. Nevertheless, this hardly entails that we have any reason whatsoever to pursue cannibalism at the level of social policy. As a policy question, then, utilitarian considerations seem to indicate that nothing speaks in favor of allowing cannibalistic practices.

The same arguments cannot be made, however, when applied to individual cases. In fact, utilitarian considerations would seem to justify cannibalism in emergency situations. In such a case, the initial revulsion one faces is outweighed by the desire to avoid death and starvation. Moreover, even if we maintain that the dead person cannibalized has a postmortem interest in not being eaten, this interest would seem to be outweighed by the need to save lives. (This argument in favor of emergency cannibalism presumes that the person cannibalized is already dead. The view that we should kill someone in order to eat them, even in emergency situations, is a much more controversial matter.)

Evolution and Cannibalism

A roughly utilitarian argument is sometimes made from the point of view of evolution. If humans eat one another, the argument goes, the species as a whole will not benefit. There is some evidence that human consumption of human flesh increases the likelihood of Creutzfeldt-Jakob syndrome, a disease which attacks the central nervous system and which results from a buildup of prion proteins. Prions are spontaneously generated in humans even absent any cannibalism, though the consumption of human flesh containing prions increases the likelihood that one will acquire the disease.

Virtue Ethics and Cannibalism

A virtue ethics aims to identify and cultivate particular virtues within individual human beings. Virtues are dispositions, or states of character, that are conducive to human excellence and flourishing (Aristotle 1980). To argue against the consumption of human beings from within a tradition of virtue ethics, one would need to

show that those traits that lead to anthropophagy are themselves not consistent with, or at least not conducive to, the virtuous life. However, simply asserting that cannibalism is not virtuous is not an argument, as it presupposes the very thing it attempts to establish. To prevent arguing circularly, one must establish some specific trait or virtue that is violated by the practice. For example, one might argue that engaging in cannibalism makes it easier to view a person as a thing and that viewing persons in such a way is not part of the virtuous life. Such arguments, however, face the same obstacles we find in other cases: there have been societies that routinely engaged in ritualistic cannibalism, and some forms of ritualistic cannibalism do not seem to involve treating the cannibalized as a mere thing. Indeed, in at least some ritualistic cannibalism, the body of the cannibalized is regarded with a kind of reverence. While it is certainly possible that these cultures were engaging in practices incompatible with virtue, more argument is required to establish this. To insist that these cultural practices are illegitimate without providing such an argument may well be ethnocentric.

Summary

There are arguments against eating humans from virtually every major ethical tradition as well as from the majority of religious traditions. These arguments, however, rarely (if ever) cover every kind of cannibalism, and all face serious objections. The absence of arguments establishing a universal prohibition of cannibalism is not equivalent to the claim that cannibalism is morally permissible. It may be permissible in certain cases, but such cases will have to be assessed individually.

Cross-References

- ▶ [Food Ethics and Policies](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Systemic Ethics to Support Wellbeing](#)
- ▶ [You Are What You Eat](#)

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Carbon Farming

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Carbon farming is a term used to describe agricultural activity that is undertaken with an express desire to improve the levels of carbon in the atmosphere. Some approaches to carbon farming focus on reducing the output of carbon from agricultural activities. The term is also used to refer to agricultural activities conducted with the express intention of capturing carbon dioxide from the atmosphere in order to mitigate against climate change. Carbon is captured in the cells of living plants. At this stage, it can either be turned into another manufactured product, such as bio-fuel or biomass. This can be used by other

processes or, in the case of charcoal, can be “sequestered” and plowed into the ground locking up the captured carbon. A range of land management, agricultural, and agroforestry techniques can be deployed with the intention of managing carbon.

The Carbon Cycle in Agriculture

Within the carbon cycle, there are a great many transactions taking place that exchange carbon between natural pools. As plants grow, they take carbon dioxide from the atmosphere and fix the carbon creating organic (carbon containing) cell matter. Thus, carbon is extracted from the atmosphere to the biosphere. Some of this carbon may find its way back into the atmosphere. If fuel from plants, wood, biofuel, or biomass is burned, the captured carbon in the cells of the plants will be released into the atmosphere as carbon dioxide. When animals or humans eat carbon containing plant matter and digest the food, it provides energy – the humans and animals producing carbon dioxide through the process of respiration. Furthermore, excreted products may return to the pedosphere – the soil. There are other ways that plant matter can return to the pedosphere. Biomass that is not utilized as a product may die back and return to the soil. One approach to carbon farming is that a crop is grown specifically with the intention of returning the carbon it absorbs through growth, into the pedosphere – sinking carbon from the atmosphere.

It is also important to consider that modern industrialized agriculture be also reliant on external inputs; some of which are carbon intensive. Agricultural equipment is often fossil fuel-powered transportation and logistics of agricultural goods also generate carbon. In the United States, agriculture is responsible for 7 % of total US greenhouse gas emissions. Furthermore, the variety of chemicals and pesticides used in some agricultural practices all require energy and hence carbon to manufacture. When assessing the carbon impact of agricultural activities, these external inputs need to be factored into the carbon accounting.

It is helpful to consider the relative proportions of carbon in the biosphere (575 Gt), the atmosphere (780 Gt), and the pedosphere (2,700 Gt). Agricultural practices can modify the content of carbon in the pedosphere – either liberating it or sequestering additional carbon. As such, agriculture has an important role to play in managing global carbon levels.

Other Greenhouse Gases

In addition to carbon, agricultural processes also result in the release of significant quantities of other greenhouse gases which contribute to climate change. When accounting for the activity of different greenhouse gases, a measure is used known as “carbon equivalence.” This accounts for the fact that some gases have a much greater global warming potential than carbon dioxide. This is a measure of the effect these gases have on “radiative forcing” over a given time period, usually considered as 100 years. Of significance is nitrogen oxide and methane. Methane is 25 times more active as a greenhouse gas than nitrous oxide. Nitrous oxide is 298 times more active than carbon dioxide. Nitrous oxide is created as the result of soil and manure management processes. Methane also results from manure management processes and fermentation processes. As these gases also contribute to climate change effects, they can be considered as an extension of carbon management.

Climate Change and Carbon

In order to avoid climate change, there is a need to decarbonize our society and reduce the levels of global greenhouse gas emissions, particularly carbon dioxide, substantially. In the Intergovernmental Panel on Climate Change’s (IPCC) Fifth Report, it is believed with a 95 % level of certainty that human sources of carbon emission were the “dominant” force responsible for climate change since the 1950s. The report, which represents a synthesis of the most up-to-date data on climate change, presents a list of evidence that the air, oceans, and land are all unequivocally in the process of

undergoing a change, with further rises in greenhouse gas levels contributing to increased warming and changes in all aspects of the climate system.

What is so concerning about climate change is that the present changes are unprecedented on time scales from “decades to millennia.” The tangible effects are warming of the land, sea, and air, the loss of ice from ice caps and glaciers, and an increasing in global average mean sea levels. Low-lying land is threatened by increases of sea level, which by 2081–2100, are projected to be in the range of 26–82 cm.

In order to reduce carbon emissions, we need to decrease the amount of nonrenewable fossil fuels that are burned. They release large quantities of carbon dioxide, which has been stored underground for millions of years.

This will involve significant technological and societal change. Fossil fuels, because of their energy density and versatility, are ubiquitous. So much of our society is dependent and reliant on the stable configuration of fossil fuels, the infrastructures used to process and distribute them, the technologies used to utilize them, and the institutions and companies which support their production, distribution, and use. Achieving a transition away from this configuration, to a low carbon economy, is no small feat.

There are many voices, however, who counter that we are unable to reduce the rate at which we emit carbon dioxide quickly enough to avoid some of the worst effects of climate change. Those who believe we are unable to make this transition quickly enough assert that other means will be required to reduce atmospheric levels of carbon, in order to avoid some of the worst effects of climate change.

It is argued that in order to reduce atmospheric concentrations of carbon dioxide further, we should invest in measures to “capture” carbon dioxide from the atmosphere or industrial processes and sequester it underground. Some approaches to this problem entail significant technological and engineering input and deep geological storage. Carbon farming methods, by contrast, have the potential to be cheaper, storing carbon in the upper layers of soil.

Climate Engineering

Climate engineering is the process of deliberately intervening in the Earth's climate system on a large scale through the application of geoengineering techniques with the express intention of reducing the effects of climate change. There are two distinct approaches to climate engineering. One set of approaches focuses on reducing the levels of carbon dioxide in the atmosphere, while other methods focus on managing the levels of solar radiation reaching the Earth, to mitigate against higher levels of carbon dioxide in the atmosphere. Carbon farming methods fit in to the former series of approaches.

This is not seen as an alternative to emissions reduction but as a complimentary approach. Mitigation is seen as the primary key to addressing climate change (reducing carbon emissions), and there is also increasing acceptance that there may need to be a degree of adaptation to climate change. Geoengineering approaches like carbon farming are seen as a third and final approach.

Carbon Farming Methods

There are a number of methods which can be deployed in order to increase the soil carbon pool. These include restoration of the soil, regeneration of woodlands, no-till farming, crops which provide cover for the soil, management of soil nutrients, and the application of manures and sludges to ground. All of these approaches aim to conserve the quantity of carbon locked up in the pedosphere.

There are a number of specific approaches to carbon farming, which have received significant attention:

No-Till Farming

In traditional farming methods, the soil is tilled between crops. This is to say that the soil is mechanically agitated – either by humans, draft animal power, or mechanical means. Soil microbial activity increases rapidly as a result of the exposure to air, and the inversion of different soil layers. This microbial activity leads to the decomposition of organic matter and the release of carbon dioxide into the atmosphere. It has been

estimated that 78 billion metric tonnes of carbon emissions has resulted from the practice of tillage. That industrial agricultural practices have depleted the uppermost layers of cropland soils presents an opportunity – as the depleted nature of these soils makes them receptive to use as a carbon sink. In addition to preventing emissions of carbon, no-till farming also reduces emissions of nitrogen oxide, another greenhouse gas.

In place of the mechanical agitation of soil, no-till farming uses organic residues that result from previous crop cycles left on the surface of the soil, and methods of sowing and fertilization that can be carried out without disturbance to the soil.

This biomass becomes incorporated with the soil, improving its carbon content. There are other corollary benefits to no-till farming. It helps to combat soil erosion and also ensures that water and nutrients are retained in the soil.

Biochar

Biochar refers to the use of charcoal as an agent for soil improvement. The charcoal is produced from the pyrolysis of biomass, which has been grown specifically for the purpose. Burying this charcoal in the soil helps to sequester carbon emissions, with the objective that the process has a negative carbon balance. There are corollary agricultural benefits to this approach – the improved soil has the potential to be more fertile, productive, and resistant to disease. Early European settlers to the Amazon basin noted the incorporation of charcoal into the soils that they found and called this soil *terra preta de Indio*. This soil had charcoal, bone, and manure added to improve its fertility. Fragments of pottery and other human artifacts have led archaeologists to the conclusion that this soil was the result of human activity. It is unproven whether *terra preta* was deliberately created; however, it has been found to be more fertile than unimproved soil.

Desert-Based Carbon Farming

In order to address the concerns of those who feel that carbon farming methods could compete with or potentially compromise agricultural activities for food production, there is a significant body of

knowledge to suggest that carbon farming efforts should be directed to land which cannot be used for other agricultural purposes.

It is estimated that a hectare of the plant *Jatropha* could capture 25 tonnes of carbon dioxide per annum when grown in desert or marginal conditions. There would also be other derivative benefits to growing *Jatropha* in the desert. Potentially, desert areas could become more habitable. Furthermore, the plants seeds can be harvested for biofuel production.

However, one of the barriers to this plan is the availability of desalination plants. Water, additionally, is a precious commodity, and production of clean water from sea water is an energy intensive activity in itself. Some have advocated an industrial ecology approach to this problem – using biomass grown as a result of desert afforestation projects, to provide the power for desalination in a self-sustaining circular process.

Reforestation/Afforestation

Reforestation is the process of restoring forests that have been destroyed, while afforestation is the process of establishing a new forest in a place where there has not been one before. As the trees grow, they absorb carbon dioxide from the atmosphere. However, this is a reversible process, as if they are later burnt, that carbon is released again.

Manure Management

Animal wastes result in the emissions of greenhouse gases. They also result in nuisance odors. Both of these problems can be brought under control by better management of animal wastes. Anaerobic digesters can be used to capture the gases produced by manure as it is digested. This gas, rather than entering the atmosphere, can be used to generate energy, which can be fed into the grid. The carbon dioxide that results from burning the gas has a diminished global warming potential compared to the methane and nitrous oxide captured from the digestate.

Economics of Carbon Farming

Climate change will result in real and tangible changes to the environments in which people will live. There are financial costs attached to the

process of mitigating against and adapting to climate change. There are various markets, internationally, on which carbon can be traded. In those legislatures where carbon emissions reductions are mandated, carbon trading activity is often used as an alternative for those who find it impossible or uneconomical to meet their commitments. A ceiling is established for carbon emissions, which producers cannot exceed. Those who fail to reduce their carbon emissions are able to purchase “carbon credits” from projects that seek to capture carbon. Equally, projects in the developing world that seek to reduce carbon levels may be financed through carbon credits.

There is the potential for those engaged in carbon farming activity to realize revenues through the sale of “carbon rights” to the carbon sequestered in their project.

There is much criticism and debate as to whether carbon trading constitutes a fair, equitable, and efficient way of reducing carbon emissions. In particular, there are wide and varied concerns about deficiencies in the design of carbon trading, their propensity to be manipulated and gamed, and the potential lack of equity. Others advocate a “gate tax” on carbon emitting fuels as a more efficient way of meeting the aim of reducing carbon emissions. That said, emissions trading schemes do have the potential to create revenue streams for carbon farming projects.

Agricultural Access to Carbon Markets

There is an economic value to carbon mitigation. Markets have been established on which carbon can be traded between those who can offer the means to reduce carbon emissions or remove carbon from the atmosphere – and those companies and industries with a need to reduce carbon emissions, but who cannot meet their obligations. The discourse on carbon markets is vast; there are many challenges in designing effective systems for carbon to be accounted for and traded.

One of the relevant issues to those engaged in activities of carbon farming is how to access the markets for carbon. Here, initiatives like the Carbon Farming Initiative act as the bridge

between those who are able to sequester carbon through agricultural initiatives.

Another issue is that carbon markets value only carbon; they do not place a value on other environmental services. As we have already noted, there are concerns about methods of carbon farming for which economic maximization is the main goal with environmental conservation being treated as a secondary priority.

Concerns About Carbon Farming

While carbon farming is a potential solution to reducing atmospheric concentrations of carbon dioxide, there are also a number of concerns that wide-scale adoption of this practice could have other, unintended consequences. Another parallel debate, which we could consider at the same time, is the rush to production of biofuels as a carbon-reduction measure. Many of the consequences of both measures are similar.

If landowners simply seek to maximize profits from carbon farming, there is a concern that large monocultures will be created that will undermine ecosystem biodiversity. Carbon farming schemes that simply incentivize carbon sequestration without adequate land stewardship guarantees are likely to result in carbon farmers seeking simply to maximize profit, inevitably resulting in unsustainable agricultural practices.

Furthermore, there is concern that carbon farming could compete with food crops for land, leading to an increase in the prices of food, which could adversely affect many of those in poverty or close to the poverty line.

Some have advocated that carbon farming could be carried out on marginal land. However, while this land might not be wholly suitable for commercial agriculture, there are still a great many of the world's poor who are dependent on marginal land for their subsistence – using it to graze animals and carry out small-scale agriculture.

That said, there are also measures that can address these concerns while also yielding environmental benefits. Agroforestry is an approach, which combines agriculture and forestry, and has

potential to be used in the context of carbon farming. Here, the integration of trees with more traditional cropping systems can yield resilience to problems associated with soil erosion.

Other approaches suggest that carbon farming should be done in areas of land that are wholly unsuitable for agricultural purposes, eliminating concerns that this would then compete with food and other crops for land. It has been suggested that *Jatropha* could be grown as a carbon crop in dry coastal areas.

Benefits from Best Practice Carbon Farming

If there is an adequate framework of incentives and regulation, it is possible for best practice carbon farming to yield a plethora of positive outcomes: above and beyond the fixation of carbon.

Carbon farming practices have the potential to result in the restoration of ecosystem services. Best practice schemes may also promote carbon farming in concert with a number of other goals. Soil erosion can be prevented through the binding effect of plant root structures. The accumulation of organic matter or charcoal forming *terra preta* can also act as a soil restorative. Pollination and the bee population can be encouraged with the selection of suitable plants.

Carbon Farming Initiatives

There are a number of initiatives globally that seek to promote the practice of carbon farming.

One of the most notable carbon farming initiatives is the CFI, a scheme which allows for Australian Carbon Credit Units (ACCUs) to be earned from agricultural and forestry carbon farming projects. This scheme is administered in Australia by the “Clean Energy Regulator.” It provides for farming businesses to earn ACCUs through both schemes to reduce carbon emissions through sequestering carbon in soil – but equally, through avoidance of other greenhouse gases such as methane and nitrous oxide.

The scheme allows farmers to earn carbon credits if they follow a series of “approved methodologies.” These methodologies are in place to

provide a robust assurance that the stated carbon aims will be achieved through the agricultural practice. There is an additional guarantee that these methodologies are robust, as a result of external scrutiny from another department, the DOIC – the Domestic Offsets Integrity Committee.

Summary

With the latest climate science emerging from the IPCC's Fifth Report, the anthropogenic origins of climate change are undisputed. The measures required to reduce carbon emissions worldwide in an equitable manner are tough. Carbon-reduction measures of the magnitude required will require substantial changes in lifestyles, the way we configure our societies, and the technologies we use to deliver the goods and services that we use.

It is for this reason that measures such as carbon farming, which can help mitigate against carbon emissions but have relatively small impact on many peoples everyday lives, are seen as seductive in their simplicity.

Undeniably, the twin pressures of resource scarcity and climate change will shape agricultural processes and practices in the years to come. Carbon farming potentially has consequential benefits when integrated with other agricultural practices – not only for the atmosphere but also for soil quality and the biosphere.

That said, there are also substantial risks involved. Providing subsidy and incentive mechanisms for carbon farming, without appropriate consideration of regulation, has the potential to lead to unforeseen impacts. We can see many parallels in the biofuels debate, where misguided subsidies have caused multifarious environmental and social problems. Incentives based on targets, without effective oversight, have the potential to lead to environmental destruction. Furthermore, there are also risks with the loss of productive agricultural land which could otherwise be used for food production. Carbon farming

has the potential to encounter the same problems that biofuels have created in reference to food versus fuel.

That said, as the consensus regarding climate change becomes increasingly solid and immutable, the need for practical solutions will become increasingly urgent. Carbon farming has a role to play in carbon reduction if well implemented.

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Carnism

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Synonyms

A kind of speciesism; Ideology of meat; Melanie Joy's view on food ethics; The opposite of veganism

Introduction

Carnism refers to the ideology conditioning people to consume certain animal products. It is essentially the opposite of veganism. The term was coined by social psychologist Melanie Joy (2001). She has fully developed the concept in further papers and in her book *Why We Love Dogs, Eat Pigs, and Wear Cows: An Introduction to Carnism* (Joy 2010). As the title of Joy's book suggest, people's relation to animals depends crucially on the species to which they belong: "We love dogs and eat cows not because dogs and cows are fundamentally different – cows, like dogs, have feelings, preferences, and consciousness – but because our perception of them is different. And, consequently, our perception of their meat is different as well" (Joy 2010, p. 12).

A Descriptive Concept with a Normative Import

The primary goal of the concept of carnism is to describe a psychological fact: the perception of animal products as food is highly cultural. Indeed, different cultures categorize species differently: contrary to occidental habits, some Koreans regularly eat dogs, while in India, cattle who till soil and produce milk are perceived as inedible. In this basic sense, carnism is the generic name, which gathers all of the different ways people attribute edibility. Of course there is

a gap between real edibility and perceived edibility: human beings are omnivores – they can eat the flesh of almost all animals (including human flesh). But they do not. In fact, the eaten species appear to be very few when compared with all the species living on Earth. Westerners, for instance, eat – on a regular basis – only a dozen species (mainly herbivores) among the millions of species of mammals, birds, fish, reptiles, and amphibians on the planet.

While recalling the gap between perceived and real edibility, the concept of carnism also suggests that there is nothing inevitable about Koreans eating dogs, Indians not eating cows, or Westerners eating pigs but not dogs. Here begins the normative use of carnism. Indeed, being largely unaware of the inherent cultural influence on perceived edibility prevents people from changing their food habits. This is why Joy considers that carnism is an exemplification of an ideology, i.e., a "shared set of beliefs, as well as the practices that reflect these beliefs" (Joy 2010, p. 29).

In this sense, veganism is also an ideology. Ethical vegans, for instance, believe that it is unethical to consume animal products (usually for animal welfare/rights or environmental concerns) and follow the particular practice associated with these beliefs: in a restaurant they will chose the veggie burger instead of the beef burger. So, they chose not to eat meat. Joy formulated the idea of the concept of carnism when she noticed that there was no word to name the opposite ideology: people who choose to consume animal products and believe that it is the right thing to do. The best candidate, "omnivore," was not an option because it denotes a biological disposition but not a set of beliefs. Moreover, vegans are not different from omnivores in the biological sense, so Joy thought a neologism was needed. She coined "carnism" from the Latin radical "carn" meaning "flesh" or "of the flesh" (carnism includes the consumption of eggs/dairy).

If veganism and carnism are both ideologies, they are, however, opposed in important ways. People who endorse veganism do so knowingly; people who endorse carnism are usually unaware

of doing so. Indeed, an ideology is not always visible – the ideology of patriarchy is a prominent example. For thousands of years, men and women believed that masculinity was somehow “better” than femininity. It followed from this that men had more social power than women. It was an invisible ideology and one that still exists. A great achievement of the feminist movement is having brought attention to the existence of patriarchy and making its effects visible. Prior to the efforts of the feminist movement, patriarchy’s existence in society was the status quo, rarely questioned and almost never challenged. The same can be said for carnism: this ideology is so entrenched, it is so pervasively widespread in human societies, that it is largely ignored.

Social norms favor and reinforce the consumption of animal products and this is the mainstream way of life. By contrast, vegetarians and vegans are sometimes stereotyped as hippies or people with eating disorders, and they often trigger defensive reactions: “they are called hypocrites if they wear leather, purists or extremists if they don’t” (Joy 2010, p. 105). Consuming animal products is also valued because it is supposedly “natural” (which is a naturalistic fallacy because the fact that humans are omnivores is not a justification to any normative claim) and necessary for good health (despite overwhelming evidence to the contrary). As in the case of patriarchy, all of these justifications concur to present carnism as normal, natural, and necessary. It appears to be an inevitable system and not a challengeable ideology.

For Joy, there is another important opposition between carnism and veganism. It is a normative one. Carnism – like patriarchy – is a violent and oppressive ideology; veganism is not. Indeed, this has been the basis of the animal rights movement for the last 40 years. Even if there are differing views in animal ethics, the fact that animal agriculture and slaughtering are violent practices is usually not controversy. “Contemporary carnism is organized around extensive violence. This level of violence is necessary in order to slaughter enough animals for the meat industry to maintain its current profit margin. The violence of carnism is such that most people are unwilling

to witness it, and those who do can become seriously distraught” (Joy 2010, p. 32).

Hence, it could be said that carnism is a descriptive concept with a normative import. By naming a psychological fact – the perception of meat and animal products depends on a pervasive ideology – the concept of carnism makes people aware of it and allows them to challenge their perceptions and therefore move away from the violence in their lives that had before seemed inevitable. To say otherwise, showing that edibility depends on culture sheds light on an additional point: perception of edibility is morally arbitrary. Pigs deserve no more than dogs to be eaten. (For a similar view stressing the analogy between puppies and pigs, see Norcross 2004.)

Thus, the concept of carnism allows to change perspective. Beside the question “Why are some people vegan?” appears this new one, “Why some people are not?”

How Carnism Works: Explaining the Moral Inconsistency

The title of Melanie Joy’s book exposes a kind of inconsistency: people care for dogs and empathize with them while ignoring the suffering of pigs and cows. Putting aside some psychiatric disorders like psychopathy, empathy is a widespread human faculty, and there is neurological evidence that people feel empathy toward animals (Filippi et al. 2011). So, the question is not why people empathize with dogs, but, rather, why they don’t express empathy toward pigs and cows. In a certain sense, understanding how carnism “works” consists of understanding this lack of empathy toward certain animals.

Omission is probably the central explanation: “The ten billion animals that are killed every year for meat and the virulent consequences of contemporary animal agricultural practices remain conspicuously absent from public discourse” (Joy 2010, p. 102). But this omission does not mean that people are completely ignorant of the reality of factory farming and violence toward animals. “Common to all violent ideologies is this

phenomenon of knowing without knowing. And it's the essence of carnism" (Joy 2010, p. 70).

According to Joy, there are several psychological mechanisms, which she identifies as psychic numbing (Slovic 2007) or "primary defenses" of carnism (the secondary defenses are justifications, like those described in part 4). They come in several ways. Objectification consists of viewing animals as things: for instance, in calling a chicken a broiler or steers beef. Deindividuation consists of viewing animals as abstraction. Finally, dichotomization allows people to put animals in categories like pets and farmed animal or cute and ugly.

However, all those interested in moral inconsistencies do not arrive at the same conclusions as Joy. Studying the animal–human interactions (or "anthrozoology"), the psychologist Hal Herzog considers that contrasting attitudes toward animals reflect merely different moral intuitions that may be triggered by different moral heuristics (Herzog and Burghardt 2005). They are not anomalies or hypocrisies, nor are they caused by an invisible ideology or a lack of empathy. Rather, they are part of human nature and somewhat inevitable. They are an "unavoidable result of the perennial tug of war between the rational part of us and the yahoo within" (Herzog 2010, p. 239). Herzog even acknowledges these inconsistencies in his own behaviors: "The yahoo [My intuition] tells me that the exquisite taste of slow-cooked pit barbecue somehow justifies the death of the hog whose loin I am going to slather with a pepper-based dry rub" (Herzog 2010, pp. 255–256).

Working from Herzog's theory that empathy is not the default attitude toward animals, the question of why people love pets must then be addressed. A possible explanation comes from the "cute response" which could trigger parental instincts (Sherpell 2002). Indeed, pets often share features with human infants: large foreheads and craniums, big eyes, bulging chicks, and soft contours. Animals that are eaten, on the other hand, often lack this cute factor. Another interesting explanation of inconsistent empathy responses could derive from disgust (Ruby and Heine 2012) or food taboo (Fessler and Navarrete 2003).

However, recent experimental studies tend to confirm Joy's view. For instance, it has been shown that categorizing an animal as "food" may diminish their perceived capacity to suffer, which in turn dampens moral concern (Bratanova et al. 2011). When people are asked to eat dried beef instead of dried nuts, they show less moral concern for cows and animals in general (Loughnan et al. 2010). This can be analyzed in terms of cognitive dissonance. Indeed, people do care for animal but they also enjoy their meat. One way to reduce this dissonance is to deny that animals suffer and are sentient. Thus, in an insightful study, Brock Bastian and his colleagues showed that people attribute less mental capacity to a cow (or a sheep) when the animal was described as being bred for meat consumption as opposed to having been bred for a different purpose (Bastian et al. 2012).

Finally, a link between racism, on the one hand, and speciesism or carnism, on the other, has been experimentally established. For instance, children's human–animal divide beliefs predicted greater racial prejudice, an effect explained by heightened racial dehumanization (Costello and Hodson 2012). The study of people's relationship with animals, especially the ones chosen to like and to eat, is still fairly new. But it appears to be a fascinating and blossoming field, which will surely also be improved by the new understanding of the psychology of vegans and vegetarians (Ruby 2012).

Origin and Debates

The name "carnism" is a neologism, but the ideas behind the word are not brand new. As early as the first century BC, the Greek essayist Plutarch tried to shift the perspective on vegetarianism in his "De esu carnium" (On Eating Meat): "Can you really ask what reason Pythagoras had for abstaining from flesh? For my part I rather wonder both by what accident and in what state of soul or mind the first man who did so, touched his mouth to gore and brought his lips to the flesh of a dead creature, he who set forth tables of dead, stale bodies and ventured to call food and

nourishment the parts that had a little before bellowed and cried, moved and lived” (Plutarch 1957, p. 541).

So, for Plutarch, what is really surprising is not why some people do not eat flesh but why so many do. He also sheds light on many inconsistencies and false beliefs surrounding animals used for food; for him, eating flesh is no longer a necessity and is not natural for human beings. Indeed, in a remote past, our ancestors may have had no choice but to eat flesh, but the progress of agriculture now makes it superfluous. People also think that they are naturally designed to eat meat. But this is false, replies Plutarch in this oft-cited excerpt: “If you declare that you are naturally designed for such a diet, then first kill for yourself what you want to eat. Do it, however, only through your own resources, unaided by cleaver or cudgel or any kind of axe” (Plutarch 1957, p. 553). Of course, Plutarch could not use the modern concept of ideology. But his identification of false beliefs and his attempt to understand their origin and the ways in which people endorse them surely makes him one of the main precursors of the concept of carnism.

More recently, many authors in the field of animal ethics have raised similar concerns. Already in the 1975 preface of his work *Animal Liberation*, Peter Singer noticed the importance of mental habits, which slow down the moral progress for animals. “Habit. This is the final barrier that the Animal Liberation movement faces. Habits not only of diets but also of thoughts and language must be challenged and altered” (Singer 2009, p. 13).

Singer is well known for having brought the term “speciesism,” a concept close to carnism and coined by the psychologist Richard D. Ryder, to the fore. Speciesism – analogous with racism or sexism – means an assignment of moral considerability to individuals solely on the basis of their species. For Singer, this is the basis of a discrimination which is morally arbitrary – just like discriminations based on race or sex are morally arbitrary. (Singer, following the preference utilitarianism, considers that interests of individuals should be the only basis for moral discrimination.)

How then are speciesism and carnism to be distinguished? First, speciesism is broader than carnism. For instance, you can be vegan and consider that no animals deserve to be exploited for food or leather but still morally value the life of a horse more than that of a cow because of their belonging to a hierarchically lower-ranked species. In this case, you are probably not a carnist but, in a sense, you are still a speciesist.

Theoretically, it is possible to be speciesist in according more value to a given species than to the human one, but, most of the time, it means to place humans at the top of the hierarchy and use this first place to justify using other animals for food and to continue exploiting them. So a carnist is a speciesist who focuses his/her attention on certain species (like pigs or cows), assigns them less value than to other species (like humans or dogs), and acts accordingly (eats pigs and wears cows). Carnism is a kind of applied speciesism – and much more easy to identify. Joy puts the distinction this way: “Carnism is the ideology in which it’s considered appropriate to eat some of the animals on the lower rungs of the speciesist hierarchy. Carnism is a “sub-ideology” of speciesism, just as anti-Semitism, for instance, is a sub-ideology of racism” (“[Carnism Frequently Asked Questions](#)”).

But it seems that there is also a more subtle or connotative difference between the two concepts. Carnism describes an ideology: it is something entrenched and embodied which affects the way people perceive animals and food in practice. Speciesism refers to a normative theory: it is a justification of certain value assignments. So, carnism can be interpreted more as a psychological concept and speciesism as a philosophical one. It also seems possible to consider the two concepts as the two sides of the same coin: the descriptive and the normative. In the latter sense, one could perceive and behave as a carnist but think and conceptualize as a speciesist.

Some have criticized the concept of carnism because it could be confusing, etymologically and ethically. Indeed, even if Joy defines carnism explicitly as the opposite ideology to veganism, the Latin radical “carn” draws attention to flesh.

But people who do not eat flesh are vegetarian, not vegan. However, for Joy, people who believe that consuming animal products (like milk or leather) but not meat is okay are – at least to a certain degree – carnists. It is also true that to illustrate carnism, Joy examines food questions (including milk and eggs) or animal product consumption (like leather), but no other forms of animal exploitation such as animal experiments or animals used in entertainment. Ethical vegans, therefore, can reject the concept of carnism on the basis that it is misleading because it is not the exact negative of their view – for which they still have no name.

This kind of critique comes mainly from the abolitionist approach in animal ethics. Indeed, this approach claims that all animal exploitation should be abolished (focusing especially on the current acceptance of animals being considered property) and recognizes some basic rights for animals. It is classically opposed to the welfarist approach, the focus of which is on animal welfare rather than rights. Now, some abolitionists tend to consider carnism as a welfarist tool or concept. For instance, the leading abolitionist advocate Gary Francione denounces what he calls the “invisibility” position, that is to say, the “claim that the ideology that supports animal exploitation is ‘invisible’” (Francione 2012). He reproaches this position to “relieve us from moral responsibility for our conduct, claiming that if we participate in animal exploitation, it’s because we are being ‘victimized’ by the ‘invisible’ ideology” (Francione 2012).

It should also be noticed that Francione talks about “moral schizophrenia” to qualify the fact that people can condemn dog fighting while eating meat or that hunters can rescue a deer but kill the same one a month later when the hunting season is opened. Thus, moral schizophrenia points out that “we do not think clearly about our moral obligations to animals” (Francione 2007). Francione appears to criticize less the descriptive dimension of carnism than its normative import. It is not clear, however, why reasoning in ideological terms rather than in terms of moral schizophrenia should lead to welfarist rather than abolitionist positions.

Neocarnism: A New Wave of Justifications

Neocarnism refers to a new wave of pro-meat and anti-vegan arguments (Joy 2011). Thanks to the ease of accessing information on the Internet and the growing public awareness of the way consumed animals are treated, it is less easy to deny the harm that is caused to them. The first defense of the carnistic ideology, invisibility, therefore leaves room to justifications as secondary defenses. The neocarnistic arguments allow conscientious consumers, who begin to question their carnistic habits, to refrain from abandoning altogether their omnivore practice and to find reasons to feel good about maintaining it.

Joy identifies, among others, three neocarnistic discourses aimed at responding to animal welfare/rights and environmental and human health arguments. The first discourse holds that veganism is too extreme and that people would be better off consuming “humane” or “happy” meat. In this sense, this discourse tries to conciliate compassion toward animals with carnistic practices. A second line of defense, “ecocarnism,” addresses environmental concerns by praising small-scale farms producing local and “sustainable” meat. Joy notices that it is also argued “that people’s aversion to killing animals is a modern aberration; veganism is seen as a contemporary movement of upper-middleclass urbanites and suburbanites who have become ‘soft’ and disconnected from nature” (Joy 2011). The third discourse stresses (against a wealth of strong evidence) that consuming animal products is a necessity for health reasons and that this overrides any moral reasons not to consume animal products. In the end, these discourses remain carnistic, because they do not truly challenge the cultural perception of animal products as food – they simply provide new justifications.

This is why Joy also describes neocarnism as a backlash against veganism; neocarnistic arguments “are signs of society’s willingness to examine the ethics of eating meat, eggs, and dairy, and they reflect people’s genuine concern for animals (and the environment and health).

But they also reflect the resistance of the dominant, meat-eating culture to truly embracing a vegan ethic” (Joy 2011).

Summary: Carnism and Moral Perception

To conclude, it should be recalled that carnism does not refer to a clear-cut and monolithic ideology. American carnism is not the same as the French or Chinese manifestations of this ideology. Moreover, if carnism and veganism are opposite ideologies, they also stand on a continuum with neocarnism and vegetarianism between the two ends. Therefore, it is possible to be more or less carnist. Or, in a slightly different way, it can also be said that there are some prototypical and atypical instances of carnistic practices and beliefs. In this regard, the fact that the etymology (pointing to flesh) does not extensively define the concept reflects merely this kind of radial structure.

Carnism has been presented as a descriptive concept with a normative import. Naming and describing an ideology allows people to contest it. Thus, from a metaethical perspective, the concept of carnism could be interpreted as a tool for moral knowledge. So, how does this work? If moral knowledge is defined as the set of morally relevant beliefs about a situation, mastering the concept of carnism may surely improve moral knowledge because it makes people aware of many false beliefs (for instance, that eating meat would be natural, normal, and necessary). This is why a descriptive concept, like carnism, can possess a normative import: by improving moral knowledge.

More precisely, and from a moral psychological perspective, it may be said that a large part of this improvement operates through moral perception. This step of cognitive moral process, often overshadowed by the next step of moral judgment, is still crucial, as explains Lawrence Blum:

An agent may reason well in moral situations, uphold the strictest standards of impartiality for testing her maxims and moral principles, and be adept at deliberation. Yet unless she perceives

moral situations as moral situations, and unless she perceives their moral character accurately, her moral principles and skill at deliberation will be for naught and may even lead her astray. In fact one of the most important moral differences between people is between those who miss and those who see various moral features of situations confronting them (Blum 1991, p. 701).

Now, carnism as ideology may succinctly explain this kind of difference in moral perception of animals. For instance, seeing a cow as something rather than as someone could carry important moral significance. Further to this, considering carnism leads people to question their moral perception and to pay attention to moral psychology. This is certainly an interesting aspects of this concept, which is less a philosophical one (like speciesism) than a moral psychological one.

Finally, and from a normative theory perspective, the concept of carnism could be related to virtue ethics. Of course, deontologists and consequentialists may be interested by questions of moral knowledge, but by focusing their attention on the agent (rather than on the action or on the consequences of the action), virtue ethicists seem more concerned with understanding, promoting, and discouraging certain kinds of moral perceptions. To that extent, Joy’s work may be interpreted as an insightful and useful contribution to a neglected area of animal ethics.

Cross-References

- [Cannibalism](#)
- [Meat: Ethical Considerations](#)
- [Peter Singer and Food](#)
- [Plant-Based Diets and Scientific Value Judgments](#)
- [Vegetarianism](#)

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Centre for Animal Welfare and Ethics

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History of the Institute/Organization

In the 1980s, Australia was experiencing criticism over a number of high profile animal welfare issues, most notably concerning the export of livestock to the Middle East. The cattlemen of Queensland suggested that the University of Queensland might host a Chair in Animal Welfare. In 1989 a UQ Senate Select Committee on Animal Welfare made a recommendation that a Chair in Animal Welfare be established at the University of Queensland. After fund-raising and preparation by the University’s Development Office and the School of Veterinary Science, Clive Phillips was appointed to this position in 2003, from the University of Cambridge in the United Kingdom. The funds raised from federal and Queensland state governments, the Australian Veterinary Association, and some local shire councils in the Gatton area were sufficient to support not only the Foundation Chair for a period of five years but also the establishment of a Centre for Animal Welfare and Ethics in 2005. Although the Chair principally addresses animal welfare issues, the steering committee recommended, on the advice of Dr Hugh Wirth (WSPA and RSPCA Australia President), to include animal ethics in the remit of the center.

The Mission of the Centre for Animal Welfare and Ethics (CAWE) is therefore to improve animal welfare, and ethical issues concerned with animal welfare, through research, education, and collaboration that recognizes the cultural diversity of human-animal interaction. CAWE develops innovative practices, guidelines, and management strategies to protect animals, enhance their health, and ensure their welfare.

Major Areas

The primary objective of the center is to study the welfare of animals and ethical issues concerned with their management in Queensland, Australia, and overseas through scientific evaluation of animal management practices. Other objectives are, first, to demonstrate leadership on animal welfare and ethical issues and ensure that staff, undergraduate, and postgraduate students at the University of Queensland are aware of new developments in the field; second, to improve the level of understanding of animal welfare by the general public and in the university community by contributing to courses in animal welfare and ethics; and, third, to encourage animal welfare issues to be included in the broader context of animal husbandry, environmental, and human behavior research.

The center is supported by an Advisory Committee, currently chaired by Dr Mandy Patterson of RSPCA Queensland. The committee provides a review of activities to ensure animal welfare priorities established by the range of stakeholders are considered appropriately. The feedback and direction provided by committee members ensures that CAWE facilitates outcomes in line with its mission and values. The committee also promotes effective communication between the center and key stakeholders, facilitates networking with relevant stakeholders, and provides advice to the center.

Backed by rigorous research, CAWE has built a reputation for striving for improvements in animal welfare in Australia and overseas.

Major Activities

The center is active in animal welfare issues in a variety of animal industries. Government representatives, livestock producers, and other members of primary industries, scientists, veterinarians, and other individuals working in the animal industries are collaborating with CAWE scientists. Recognizing that funders can bias animal welfare research (Van der Schott and Phillips 2013), CAWE has gained a reputation for the independence of its research, providing results which are unaffected by external organizations, media, or public opinion.

The Chair and others within the center have built effective networks with key stakeholders, including local, state, and federal governments, leaders in the primary and intensive farming industries, professional associations such as the Australian Veterinary Association and its state branches, existing animal welfare institutions, and organizations researching improvements to the welfare of animals.

The CAWE has a number of values on which it bases its research activities. First, the principal research activities of the center have animal welfare and/or ethics as the primary focus. Second, the research does not cause animals to suffer unnecessarily. Third, open access to the research is advocated, particularly if the research is funded by public money. Finally, release of the research to the media is carefully controlled, in an attempt to ensure that an unbiased, accurate account of the work is portrayed.

The research and activities performed by the CAWE are, in part, dependent on funding opportunities, but priorities for the CAWE are within the following strategic actions: evaluating current animal husbandry and industry practices; conducting objective scientific research to develop, improve, or recommend alternative management strategies to benefit the welfare of animals; monitoring and analyzing attitudes to animal welfare nationally and internationally which will or could impact on issues such as trade and live export; undertaking objective

research for animal industry or advocacy groups; enhancing the focus of animal welfare and ethics in undergraduate teaching; and dissemination of information and promotional activities. Dissemination is achieved by regular newsletters to all animal welfare stakeholders; the establishment and regular maintenance of a specific website; hosting seminars and conferences, which include public and industry forums; and publishing of significant outcomes in appropriate journals and publications and reports to the Advisory Committee and sponsors of specific projects.

Clive Phillips as Director has led the center from 2005 to present. He has developed an innovative journal (animals: <http://www.mdpi.com/journal/animals>) with free online access, edits a series of books on animal welfare (published by Springer), and has published several books on animal welfare (e.g., Phillips 2009; Phillips and Phillips 2012). He was assisted by a Manager, Dr Nicky Cross, in the early years, but now the center functions mainly as a loose-knit, virtual center, hosting researchers from all parts of the globe. The Deputy Director is Dr Andrew Tribe. Andrew has been Senior Lecturer in Animal Behavior and Management at UQ since 1998; prior to this he was Director of the University's Veterinary Science Farm and Senior Veterinarian at the Royal Melbourne Zoological Gardens. Other Queensland staff that have worked with CAWE include Carol Petherick, John Gaughan, Peter Murray, Allan Lisle, Steve Johnston, Melanie Latter, Deborah Walsh, and Mandy Patterson, as well as a large number of interstate and overseas collaborators. Sabbatical visitors have included Serdar Izmirli and Ramazan Col from Turkey and Javid Aldavood and Ali Ramon from Iran.

At any one time, there are about 12 Ph.D., 2 Masters, and 2 Honors students studying topics that include a range of animal species in farm, companion, and zoo settings, as well as ethics and attitudes of the public toward animals. Student achievements include K. Descovich (2009) UQ Bryan Medal for best thesis, S. Sinclair (2009) Eureka Prize for Scientific Research that contributes to animal protection, and C. Tiplady (2012) 3 min Thesis winner and People's Choice Award for UQ Faculty of Science.

Funding for research has been provided by a range of organizations and individuals, including RSPCA Australia, Voiceless, Humane Slaughter Association, Australian Research Council, Morris Animal Foundation, and livestock industry bodies. Two annual scholarships, the Humane Society International/Roz Dixon Memorial Scholarship and the Ted Eadie Memorial Scholarship, are organized by the center.

Landmark Contributions

Staff at CAWE identified the accumulation of ammonia as a welfare issue for cattle and sheep being exported on ships (Phillips et al. 2012), with the cooperation of the industry. Current research is examining the effects of ship motion on balance and stress levels in sheep. Also in relation to livestock, CAWE has detected visual lateralization in the response of cattle to people that indicates a fight/flight response (Robins and Phillips 2010). This acknowledges the frequently stressful nature of human-animal interactions.

CAWE's research with captive wild animals has often revealed that enclosures are too small and insufficiently stimulating, with the animals developing abnormal behavior as a result (Phillips et al. 2011b). Methods of alleviating this are sought. Students at the center have found that zoo keepers' personalities influence their interaction with the animals, facilitating recruitment of the most suitable individuals for this job (Phillips and Peck 2007).

Researchers at the center have identified lameness as a major issue for racehorses (Doughty et al. 2009) and aged (McGowan et al. 2010) horses. Studies with companion animals in domestic violence situations are underway, which have initially identified dogs as being more at risk than cats (Tiplady et al. 2011).

Attitudes to animals around the world are frequently studied by researchers at CAWE, leading to identification of populations and individuals having most concern about animal welfare (e.g., Phillips et al. 2012b). A connection between gender differences in concern for animals and gender empowerment of respondents has been detected.



Countries with low levels of gender empowerment do not exhibit the classical increase in concern for animals in women that has commonly observed in western studies (Phillips et al. 2011a). Similarly the identification of differences in stakeholders' concerns for welfare issues in livestock farming is new. Those directly connected with rangeland animals rate long-term issues such as nutrition as very important; others focus more on short-term painful procedures (Phillips et al. 2009).

The research at the Centre for Animal Welfare and Ethics is helping to provide the scientific information that can change animals' lives for the better. The questions about whether we should be changing animals' lives are also being addressed (e.g., Tiplady et al. 2012). The welfare of animals in current management systems is evaluated, and novel viable systems that could improve the animals' welfare are constantly being sought.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Industrialized Slaughter and Animal Welfare](#)

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Child Nutrition Guidelines and Gender

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Synonyms

Advice; Best interests principle; Child nutrition; Clinical guidelines

Introduction

In recent years there has been a proliferation of guidelines related to child health. Prominent among these are guidelines on child nutrition. Guidelines cover a large range of questions relating to child nutrition, from duration of breast-feeding and supplementary feeding in infancy to weaning, establishing healthy eating in toddlers, and meeting the nutritional needs of children at various stages of development.

Guidelines are used in professions such as medicine as a means of communicating evidence-based statements about best practice and encouraging quality improvement and reduction of unwarranted variation in practice. There is significant debate about the authority of professional guidelines, and in particular questions are raised about the conditions under which divergence from guidelines is permissible. Many child nutrition guidelines are ultimately intended to influence parental, rather than professional practice. The practices that child health nutrition guidelines address occur within the private sphere and relate to feeding practices that may carry deep cultural and familial significance. The status and authority of guidelines directed at families is even less certain than in the case of clinical guidelines. Child nutrition guidelines can be viewed not simply as pieces of advice that parents may act upon according to their own judgment but as assertions of best practice against which parental practice is evaluated. Child nutrition guidelines can inform parental assessments of their own practice and those of others, and as such they become instruments for attributions of praise, blame, and the moral emotions of pride and guilt. The feelings of guilt and shame that many women who do not breast-feed for the recommended period report illustrate the power that guidelines have to set effective parenting standards.

The standard-setting dimension of guidelines raises a number of ethical issues including concerns about the normative status of guidelines, resourcing in support of adherence and industry influence and the integrity of guidelines. This entry will introduce clinical guidelines, describe

the relevant differences between clinical guidelines and those that target parental practice, and address each of the ethical issues indicated above.

Clinical Guidelines

Clinical guidelines have become an increasingly common feature of the medical practice landscape since the 1980s. The Institute of Medicine (a division of the National Academy of Sciences that provides independent advice to decision-makers and the public about matters relating to health) offers the following definition:

Clinical practice guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options. Rather than dictating a one-size-fits-all approach to patient care, clinical practice guidelines offer an evaluation of the quality of the relevant scientific literature and an assessment of the likely benefits and harms of a particular treatment. This information enables healthcare providers to proceed accordingly, selecting the best care for a unique patient based on his or her preferences. (IOM 2011, p. 1)

The rise of clinical guidelines is a response to a number of developments. Scientific research has increased in quantity and availability, but it is difficult for clinicians to keep abreast of emerging research and to assess its implications for practice. Alongside this, there is strong demand for improved quality of care and reduction of unwarranted variation in quality and availability of care provision. Guidelines encapsulate the existing evidence about a defined question and draw recommendations for clinical practice out of that evidence. In this way, they make evidence accessible to clinicians and support greater consistency of care, not by eliminating variation but by providing an evidence-based standard against which decisions about patient care can be reached. The idea is that variation in care will not reflect inaccessibility or misinterpretation of relevant evidence, but will instead reflect professional and patient discretion in individual circumstances.

Clinical guidelines have excited controversy on a number of grounds. They have been

identified as a means of rationing care and limiting the over-treatment associated with defensive medicine. They have also been seen as a means by which sub-specialities may attempt to claim clinical territory. A large industry in guideline generation has emerged, with guidelines being issued by a wide variety of professional bodies, scientific institutes, employers, and other organizations. In some areas of practice, they have multiplied at an astonishing rate. Some have been found to contain conflicting or misleading statements. The development process has undergone considerable scrutiny. There is also debate about the use of guidelines as evidence in court proceedings for medical negligence or malpractice. A guideline may be used as a “sword” by which to inculcate clinicians if they fail to adhere or as a “shield” to exculpate a clinician whose practice complied with a guideline. The matter of how courts should regard guidelines has been discussed in medicolegal literature (Tingle and Foster 2002).

The Status of Clinical Guidelines

The IOM’s definition makes clear that guidelines are intended to permit variation, in deference to professional expertise and in recognition of the need for discretion to which variation in clinical circumstances gives rise. Guidelines are not rules that must in all instances be followed. But neither are they wholly optional. Guidelines occupy an uncomfortable middle-ground between rules and advice.

When a rule is issued by a legitimate authority acting within its sphere of authority, the rule creates an obligation in those to whom it applies. The rule-maker is entitled to demand compliance and to hold violators to account, possibly reprimanding or imposing punishment for noncompliance.

In contrast, advice, as classically construed, can be characterized as the supply of nonenforceable reasons for action. In giving advice, an advisor implicitly acknowledges that the advisee is entitled to act according to his or her own judgment in this matter and that the advisor is not in a position of control. Unlike rule-makers, advisors cannot legitimately enforce compliance with their advice nor hold advisees to

account. Advisees can reject advice without owing an explanation to their advisors.

The claim to professional consideration that guidelines assert is greater than the claim associated with advice. Arguably, clinicians are obliged to keep up-to-date with guidelines issued by relevant authoritative sources (such as professional bodies and employers), to consider them and to employ them in clinical deliberations. Professionals may be held to account for nonadherence, in the sense that they must be willing to justify divergences. Clinical guidelines issued by authoritative sources command a greater attention than advisors are permitted to demand for their recommendations. But, unlike rules, they do not command “obedience.” Failure to adhere with a guideline would only constitute grounds for reprimand or disciplinary action if the relevant professional was unable to justify nonadherence and an adverse outcome had resulted.

Clinical guidelines vary in the authority of their contents and their provenance, and their claim to professional consideration varies correspondingly. The authority of a given guideline in a given clinical circumstance will often be a matter of debate, but it is clear that medical professionals are not free to disregard clinical guidelines entirely. Professional status and the privileges associated with it are earned and maintained through demonstrated satisfaction of professional requirements. The trust that the public places in professionals is parasitic upon public trust in the regulation and maintenance of standards by professional bodies such as medical colleges, councils, and licensing boards and employers. This entitles these bodies to set standards governing practice and to identify and foster given goals and values within the profession. Professional bodies are entitled to impose rules upon their members, discipline violations, and strip unsuitable individuals of their professional status. Guidelines, even when issuing from authoritative sources, are not the same as rules, but they can be the subject of rules: the United Kingdom’s General Medical Council’s *Good Medical Practice* guide stipulates that “You must be familiar with guidelines and developments that affect your work” (GMC 2013, p. 6).

Guidelines for Child Nutrition

Child nutrition guidelines occupy more uncertain territory still with respect to their authority. Some child nutrition guidelines are directed primarily at professionals, because they relate to clinical matters (such as perioperative fasting, food allergy, or nutritional support of a seriously ill child). Many others are intended to inform parental, rather than professional, practice. Some such guidelines comprise technical assessments of evidence to inform professional advice to parents; others consist of simplified summaries of evidence and include recommendations aimed directly at parents. Many health-related governmental agencies issue child nutrition guidelines, although, tellingly, some prefer term such as “advice,” “tips,” or “recommendations” to “guideline.” The focus here is on those guidelines that are intended to inform parental practice.

Similar factors informing the increase in clinical guidelines apply in the context of child nutrition. Scientific evidence about nutritional risk and protective factors is increasingly available but its implications for child nourishment are not easily discernible by parents. Guidelines provide a means of gathering together evidence and distilling it into practical recommendations. Child health guidelines share with clinical guidelines the aim of reducing unwarranted variation in practice. Some parental practices reflect a lack of information and understanding of child nutrition; guidelines can help to eliminate variation that reflects a lack of understanding, rather than considered parental choices.

Like clinical guidelines, child nutrition guidelines are not a set of rules. As such they accommodate and acknowledge parental discretion. But, as with clinical guidelines, child health guidelines are aimed at persons who are not free of duties with respect to the matters they address. The duties that underpin parenting have implications for the status of guidelines.

The assumption of care for a child carries both moral and legal duties. There is a great deal of controversy about what duties parents have and about how, and if, they should be enforced. The Best Interests Principle, contained in Article 3 of

the United Nations’ Convention of the Rights of the Child and enshrined for use by courts and child protection agencies in many jurisdictions, including England and the United States, is too demanding and contestable to apply in any literal way to all familial activities and parental practices. This is so even if the focus is on the content of the moral duty, rather than its enforcement. Parents are morally permitted to make decisions that fail to optimize a child’s interests in order to serve a legitimate end, as long as that child’s interests are served “well enough.” The claim that parents have a moral duty to protect and promote their children’s interests to a “minimally adequate” level is tenable (Archard 2004). However, what counts as “minimally adequate” is contestable. As child nutrition is shown to have potentially profound implications for health and functioning throughout life, child nutrition practices could be drawn into the orbit of parental duty. But whether parents have a duty to attend to child nutrition guidelines is less clear.

If guidelines encapsulated parental duty, there would, by extension, be a duty to attend to them. But it is not clear that child nutrition guidelines are intended to, or do, follow the contours of parental duty. Guidelines could be statements of best practice, as discernible by reference to scientific evidence. If parents are not duty-bound to adopt best practice, attendance to them may be purely discretionary. However, clinical guidelines are often regarded as statements of best practice, but attendance to them is not purely discretionary: clinicians must keep up-to-date with relevant guidelines and be willing to defend divergences. Might parents also have a duty to refer to guidelines, to reflect on them, and to be willing to defend divergences, even if this is not a duty that the state should, or would attempt to, enforce?

Clinical guidelines are subject to a duty of attendance rather than one of compliance. This duty is imposed by professional bodies (including employers). If child nutrition guidelines are subject to a duty of attendance, rather than one of compliance, where does this duty stem from?

Here there is a relevant difference between child nutrition guidelines and clinical guidelines.

Clinical practice is governed by both professional bodies and employers, and their authority to set standards governing clinical practice is established. Parents do not become parents through admittance to a professional organization, membership of which entails acceptance of its authority. Arguably, parental duties arise from undertakings to one's child, rather than to an authorizing body. If parents have a duty to attend to guidelines, it must be either because their duty to their child entails this or because it has been imposed by an authorized third party.

The state has the authority to impose duties on parents. States are widely acknowledged as having a role as protector of vulnerable members of society, including children. This is often referred to as *parens patriae*: a Latin term meaning "parent of the nation." This role entails the state's right to assume control where necessary to ensure that children receive adequate care. The state is empowered to pass laws that constrain parental choice, on the grounds of the interests of the child. Laws requiring use of child safety restraints in motor cars and prohibiting physical chastisement of children (as in New Zealand) and smoking in cars containing children (as in Australia and some states in the United States, such as Arkansas, Oregon, and Maine) exemplify the exercise of this power.

Currently child nutrition guidelines do not have formal legal standing and are unlikely to receive it, unless there was a clear case that failure to adhere to a given guideline was associated with a demonstrable and serious harm to children.

Unlike clinical guidelines, child nutrition guidelines are not made the subject of an explicit duty by an external, authorizing body. The inherent contestability of parental duties means that whether there is a moral duty to attend to guidelines, or to comply with a specific guideline, is also contestable. As it currently stands, child health guidelines are more akin to pieces of advice, subject to parental evaluation and discretion, than they are to rules. But that does not prevent them from exerting significant moral and social force on parents and particularly upon mothers.

The Normative Status of Child Nutrition Guidelines

Although a noncontroversial account of parental duties eludes philosophers and states, parents typically want to do a good job and look for sources of support and information to this end. While the status of child nutrition guidelines and the relationship between them and parental duties are unclear, they still exert a palpable force upon many parents and upon social understandings of good parenting.

Advice is directed at parents from myriad sources, particularly during pregnancy and the early years of parenthood. It is common for parents to exchange and discuss information relating to their children, and standards, norms, and expectations can be set not only through direct advice-giving but also when information from a third-party source is relayed ("my midwife says," "have you read the latest advice about fructose?...") and when parents relate their own practices to other parents (Fuligni and Brooks-Gunn 2002). Ideas about parenting are not only relayed in conversation but established through experience from childhood onward (Mechling 1975).

Mothers do the bulk of the heavy work when it comes to sourcing, fielding, assessing, sharing, and acting upon advice about child health (Kukla 2006). While role sharing is now more common and although power and resourcing does not always accompany responsibility, women are still more likely to be assigned primary responsibility for children's diets. Of course, the women who oversee these aspects of childcare are not always, or only, mothers: grandmothers, mothers-in-law, aunties, and other senior female figures have significant influence in many social contexts (Richards et al. 2013).

Motherhood is a normatively charged identity category, associated with powerful and deeply rooted ideals. The controversy surrounding philosophical accounts of parental duties has not produced widespread unwillingness to judge parents. Rather, multiple, sometimes conflicting ideals circulate, facilitating moral maternal evaluation and self-evaluation.

In societies where scientific knowledge carries a credibility premium, child nutrition guidelines have special force to set effective parenting standards. They offer the promise that adherence represents best practice, as identified through an objective and rigorous process of scientific discovery and evaluation. Health-care professionals and childcare workers use child nutrition guidelines to advise mothers, affirming their practice when it adheres to guidelines and encouraging change when it diverges. The fact that a practice is recommended in guidelines can be cited in defense when others question or criticize maternal practice, for instance, for diverging from tradition. Mothers may feel guilt, self-blame, and a sense of failure when they fail to fulfill guidelines or may feel the need to rationalize the failure, perhaps emphasizing the changeability of advice as a sign of its unreliability. Women's sense of their own performance as mothers, and of their standing in the eyes of others, can be powerfully affected by the advice that circulates around them. The standing of child nutrition guidelines as definitive statements of best practice elevates them above other sources of advice for many parents: they are standards worthy of adoption, and mothers may be evaluated upon that basis.

The promulgation of the message that "breast is best" illustrates the prominence and power of child nutrition guidelines. Numerous studies report that this message has achieved wide recognition and influences feeding intentions and women's feelings of pride if breast-feeding goes well, and guilt and shame if they elect not to breast-feed or do not continue to feed for the recommended time frame. But guilt and shame can also accompany breast-feeding, given societal expectations of modesty and associations between breasts and sexuality (Taylor and Wallace 2012).

Despite the social mores women navigate, the evidence in favor of breast-feeding is presented as definitive: breast-feeding offers babies the best possible start in life, and mothers are judged on their willingness and ability to give their children the best possible start in life (without infringing upon the expectations of others).

Some women report feeling pressured to breast-feed (Hoddinott and Pill 2000) and use of

terms such as "successful breast-feeders" compounds the normative force of these guidelines (Burns et al. 2010). Breast-feeding guidelines also apply in antenatal care and midwifery. Hospitals, health providers, and professional bodies may adopt policies and guidelines that require clinicians to promote breast-feeding and reduce women's access to support with bottle-feeding. Some midwives report "breaking rules" in order to support mothers who choose to or require bottle-feeding (Furber and Thomson 2006).

While guidelines formally preserve parental choice with respect to child nutrition, they can exert significant pressure, influencing parental perceptions of available choices and attributions of praise and blame. Moreover the reasons that child nutrition guidelines are not adhered to are not necessarily reducible to parental choice (Kukla 2006).

Supporting Adherence to Child Nutrition Guidelines

The purpose of child nutrition guidelines is to enable mothers to make evidence-based decisions that affect their child's health. The thought is that knowledge enables: if mothers know what is best for children, they are better placed to secure it.

This thought can be challenged. While knowing what is best, and what is bad, for children, can help parents, it can only do so if what is best is within their power to secure. The costs of adherence may be prohibitive. Guidelines may advocate an unaffordable or inaccessible diet; other commitments may compete for time and energy; guideline adherence may provoke intrafamilial or intracultural conflict; co-parents may prevent adherence; social considerations (such as social disapproval of breast-feeding) or past history may increase the difficulty of adherence, to the point of effective impossibility.

It could be argued that the non-compulsory nature of guidelines offers sufficient recognition of legitimate obstacles to universal adherence to guidelines. But guidelines also effectively set best practice standards. Nonadherence can stigmatize, potentially increasing inequalities when

ability to adhere varies across social and economic groups (Goldberg 2012). If adherence to guidelines is not a straightforward matter of “parental choice” and child health is a goal worth pursuing, a social commitment beyond dissemination of recommendations may be required.

Industry Influence and the Integrity of Guidelines

The potency of child nutrition guidelines derives from their grounding in scientific evidence. The idea is that while parents have their own beliefs about what is best for their children, these beliefs are based on unreliable sources such as subjective assessments and inherited wisdom and may not be borne out by well-constructed, objective testing. Determining what is good for children requires more than guesswork; guidelines offer recommendations grounded in more reliable evidence than that standardly available to parents through experience, reasoning, and domestic experiments alone. Guidelines prepared for parental use are largely stripped of the scientific evidence base that renders them so influential. Parents are asked to trust in the integrity of the research underwriting them and the organizations preparing them.

The professed objectivity of guidelines and the implicit claim that their purpose is to assist parents to make the best possible nutritional decisions for their children are crucial components of their integrity. The involvement of vested interest groups, such as food manufacturers, would limit their trustworthiness: the possibility that the interests of these groups influenced the guidelines could not be discounted.

Links between industrial interests and nutrition guidelines have been documented. Some advisory organizations (such as the Academy of Nutrition and Dietetics) receive funding from industry (Nestle 2001). Industry lobbies committees and government agencies that prepare and issue guidelines (Nestle 2002). Furthermore, much of the research that guidelines draw upon receives industry funding. Several studies have shown a link between research findings and funding (Lesser et al. 2007). Commercial

attempts to influence child nutrition advice are not new: the new infant food companies courted dieticians’ favor in the 1920s (Bentley 2005). Industrial influences compromise the perception of child nutrition guidelines as trustworthy and worthy of parental attention.

Summary

While parental duties with respect to child nutrition guidelines are disputed, they provide a measure by which mothers, as primary carers, can be evaluated, both by themselves and by others. This raises ethical questions about guidelines’ suitability as measures of maternal success. In particular, the support that mothers receive to adhere to guidelines and the trustworthiness of guidelines are matters that require attention.

Cross-References

- [Feeding Children](#)
- [Infant Feeding](#)
- [Marketing, Food Policy, Diet, and Health](#)
- [Pregnancy and Food](#)

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Chinese Agriculture

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Synonyms

Agricultural history; Agriculture and environment; Chinese agronomy; Crop systems; Cultivation; Farming

Introduction

Chinese agriculture is one of the oldest agricultural systems and one of the most influential, having contributed cultivars, techniques, and land management systems to neighboring peoples. Chinese agriculturalists have proven incredibly resilient. Adopting foreign cultivars and technology, such as wheat, the plow, and tea, they modified and expanded existing methodologies to transform an extensive, dryland agriculture into a multifaceted agricultural system including wet- and dryland crops, tree plantations, floating fields, and inland aquaculture. In doing so, Chinese farmers, historical and contemporary, have also had to grapple with significant ethical, social, and environment challenges. Long-term erosion, siltation, and flooding have been compounded, since the beginning of the twentieth century, by the social, economic, and environmental aspects of industrialization, intensified rural poverty, and the relative weakness of local administration. Today the ethical relevance of Chinese agriculture reflects a highly populated but changing rural-industrial society and is informed by technical, political, environmental, and social concerns associated with cultivation, including issues of land ownership and tenure, shifting agrarian policies, environmental degradation, and labor out-migration and gender inequalities, among other issues.

Chinese Agriculture: An Historical Overview

Chinese agriculture began around the seventh millennium BCE in what is now northern China. Utilizing loess soils and mineral-rich windblown and glacial deposits, early farmers cultivated millet, wheat, barley, and soybeans (Ho 1969). In this phase, Chinese farmers faced important practical and environmental limitations. First and foremost, farmers struggled to retain soil water content, sometimes cultivating in shallow, man-made pits to preserve moisture. Second, staying warm during cold winters, coupled with gradual population growth, meant increasing

consumption of forest resources. The results were land clearance, deforestation, and erosion. The region's rich soil thereby slipped into the Yellow River leading to rising water levels within the riverbed. This in turn required expensive, large-scale intervention in the forms of dredging and enlarged, reinforced embankments.

During the Han dynasty (206 BCE–220 CE), many of the major themes and crises of Chinese agriculture and ecology emerged: land agglomeration and the crisis of land access, the question of acceptable tax levels, flood damage and the necessity of government intervention, regional food scarcity requiring substantial infrastructure for distribution of food aid, farmer poverty, and agrarian protest. In these instances, the government was forced to reduce and sometimes suspend taxes while at the same time open granaries, issue loans, or provide seed, tools, and funds. In extreme instances, government land was loaned to farmers for cultivation (Hsu 1980).

With the building of the Grand Canal, a man-made waterway connecting the Yangzi and Yellow river valleys, during the Sui (589–618 CE) and Tang (618–908 CE) dynasties, the Chinese state successfully connected northern and southern Chinese agricultural zones. In doing so, the dryland dominated north and wetland dominated south could exchange their products more readily. This enabled the collection of government tax grain as well as allowed for greater levels of market exchange. The Grand Canal should not be understated. Through it, the state could facilitate grain transfers, generally shifting southern rice surpluses toward northern grain scarcity.

Tang dynasty territorial expansion incorporated a greater swath of agricultural lands in the south, allowing migration and the enlargement of extensive agricultural methods. Initially, draft animal use increased, as did that of plows and harnesses. New seed drills were introduced which permitted the sowing of seeds simultaneously with an application of dung. Animal and human manure had become commodities by this time. Under this extensive agricultural regime, farmers multi-cropped, harvesting three crops in 2 years. They constructed framed or floating fields,

mounds of earth suspended over wooden frames and mounted within rivers and lakes, which allowed for greater food production without adding season-long labor requirements. To facilitate the development of southern lands, local elites financed and maintained drainage and irrigation projects. The state, in an effort to reform agriculture, provided loans at lower rates of interest and replaced *corvée* with tax payment. The state attempted to rectify tax rolls to increase tax revenues but did not address land centralization and tenure. Although tax rates remained low, somewhere around 10 %, tenants continued to pay 50 % of their yields in rent, even more if they rented oxen and plows (Chao 1986).

During the following dynasty, the Song (960–1279 CE), the introduction of a new rice variety, Champa rice, reconfigured grain availability by drastically expanding China's rice production. Champa rice is known for being a drought- and flood-tolerant, insect- and blight-resistant strain which grows well on marginal soils. Because of its ability to grow on dry- or wetland, as well as its maturation in 100 days, roughly half the time needed for short and medium grain rice varieties, Champa rice made a significant contribution in alleviating famine and scarcity (Ho 1956).

Outside of grain production, Champa rice contributed to Chinese agriculture by emphasizing the importance of grain selection. Agriculturalists increasingly sought to find, and produce, varieties which matured in shorter periods, or which possessed specific traits. Farmers thereby produced or discovered in the eleventh and twelfth centuries varieties which matured in as little as 60 days. These varieties had lower yields but performed well on marginal soils enabling farmers to expand cultivable acreage. By the eighteenth century, there were 3,525 documented rice varieties (Deng 1993).

In the Yuan (1279–1368 CE) and Ming (1368–1644 CE) dynasties, techniques for digging ponds improved, increasing the supply of water and land productivity. Better pond technology facilitated double cropping of wet- and dryland crops through improved water management. At the same time, in other parts of China, the

adoption of more efficient crop rotations corresponded with a gradual decrease in farm sizes. The preference of landlords to divide large land holdings into plots workable by family units reconfigured the countryside into small fields rather than large tracts. Small fields, farmed intensively, discouraged animal-powered farm equipment and rewarded labor investment (Elvin 1982).

The application of labor-intensive agricultural methods, steady rates of land reclamation, the gradual improvement of agricultural implements and techniques, the importation of New World crops, and the continuing spread of best-practice agriculture collectively continued to fuel the growth of population and the economy. China's population had been around 100 million in the mid-seventeenth century. Around 1900, it neared 400 million. The quadrupling of population in a 250-year period was enabled on the one hand by a doubling in rice production between 1000 CE and 1850 CE and on the other by the introduction and dissemination of crops such as maize, sweet potato, and peanuts. Where rice accounted for 70 % of China's national food output in the early seventeenth century, in the 1930s it was 36 %. American food plants by then accounted for 20 % of China's gross output (Ho 1959).

The cultivation of New World crops was in complement, rather than in competition, with China's dominant grains. Because sweet potato and maize grew on soils less ideal for rice, wheat, or millet and could be cultivated on sloping lands where terracing was uneconomical, these crops allowed for an expansion in cultivated acreage and food supply without decreasing other grain production. However, the cultivation of these alternative soils, with the goal of short-term profits, facilitated practices which can best be described as deficit farming. At first farmers and landlords negotiated leases for lands which had not been in demand, leaving landlords feeling they were getting something for nothing. Cultivators then cleared and farmed the land without concern for soil preservation; the remaining soil was then susceptible to erosion. Over time, these practices contributed to China's agricultural

expansion, population increase, and environmental degradation, especially in the mountains and along their connected waterways (Averill 1983).

Chinese Agriculture: Today

The commune system (1958–1978), through which farms and farmers were collectivized, ended through a series of reforms in the late 1970s and early 1980s. Under these reforms, China has experienced renewed agricultural growth rivaling advanced industrial economies. From the late 1970s to today, Chinese agriculture has seen an exponential rise in terms of the quantity and value of its goods. Yet while agriculture was a leading sector during reform, today it is increasingly marginalized. Moreover, it continues to face challenges of historical origin. Farmers retain land holdings too small to enable them to access the financial resources of credit and insurance markets. Without these, agriculturalists do not have the funds needed to improve their agricultural productivity (Song and Chen 2006). Chinese farmers are also threatened by the weakness of their legal rights to property. Because of ambiguities pertaining to land ownership and land tenure following the end of the commune system, farmers have been unable to assert, directly or through rural collectives, the rights of landowners. Rights of land tenure, the ability to buy, sell, and profit from one's land, are not effectively outlined. The result is that, since the 1990s, there is a growing trend toward landlessness resulting from the encroachment of government eminent domain, private land enclosure, and land sales, as conducted by local officials (Hong 2006).

Agrarian Reform and WTO Membership

Under the commune system, local leaders decided what was cultivated. Farmers, on the other hand, possessed autonomy over crop selection generally only in regard to small plots near their homes. Local leaders made their decisions based upon plans given to them by higher-level

officials. According to these plans, rural leaders were required to meet specific quotas in specific commodities. This system intended to create agricultural surpluses which could be shifted throughout the country, especially to areas of need, while keeping agricultural commodity prices low and facilitating industrial transition (Lohmar et al. 2009). However, such organization and state policy, without strong oversight, created a potential for overreporting which contributed to one of the largest famines of the twentieth century under the Great Leap Forward (Perkins 1991).

In 1978, a series of national reforms began which included significant alterations to Chinese agriculture. Under the Household Responsibility System, villages allocated collectively owned land to households through leases. In this system, farmers paid quotas of designated crops and in turn received fixed payments. Farmers were permitted to determine which crops to plant after allocating sufficient space to the crops demanded in payment of the lease. This enabled farmers to cash crop, focus on livestock, and sell surpluses directly to the market. The result was an initial step in reinvigorating the rural economy, as it directly resuscitated rural markets. Farmers benefited from this transition, and in response to early success, land and labor practices shifted to meet market demands. The overarching result was growth in farm family incomes, increases in cash crop and livestock production, new demands for marketing, and a gradual escalation in nonagricultural income among rural households (Lohmar et al. 2009).

With the integration of the Chinese economy into the World Trade Organization (WTO) in 2001, state-owned trading enterprise dominance over agricultural products eased through lowering tariffs and trade barriers on agricultural products. At the same time, China's inclusion in the WTO came with member-approved subsidies. China originally sought a subsidy equivalent to 10 % of the value of national agricultural production. However, WTO members, in line with the restriction for industrialized countries, wanted China's subsidy to remain at 5 %. The approved rate rests at eight and a half percent, a figure

which reflects the government's overall ability to intervene in the market (Dang 2006; Lu 2006).

WTO membership has encouraged significant alterations in agrarian state policy as well as in production. The government's tenth Five-Year Plan (2001–2005) emphasized that agriculture should be given priority in national economic development to ensure sustained and steady growth in farmer income. Starting in 2003, the government gradually began to reduce taxes on special agricultural products. In March 2004, a plan was announced to gradually remove taxes on all agricultural products. The removal of taxes on farmers for their agricultural commodities indicates a profound shift in production and state view. It reflects the necessity of state support to maintain a balance between farmer income and consumer prices. It also conveys the decreasing importance of agricultural production in terms of gross domestic product. That China can now afford to allow agriculture to go untaxed indicates a new stage in China's agricultural history. Yet even with the reduction of state taxes on agricultural production, farmers are not tax free. Local fees and levies remain in place. They vary by locale, as they remain at the discretion of local officials. Such fees are intended to finance medical care, schools, town- and village-level administration, as well as public facilities. Even with the reduction and removal of state taxes on agricultural production, local dues and local fees remain the larger concern as they can become a greater burden (Lu 2006).

Production, Producers, and Agricultural Improvement

Since reform, Chinese agriculture has experienced nearly three decades of increasing yields. In 2005, agriculture accounted for roughly 12.5 % of China's annual GDP. Although this figure is small, it reflects a 336 % increase in output since 1978 (Dang 2006). In terms of grain production (rice, wheat, and maize), 247 million metric tons of grain were produced in 1978. By 2008 the figure was 470 million metric tons. This increase reflects intensive

land-use cultivation and has occurred without substantial mechanization. Especially notable growth has been occurring in maize production, which is utilized in China's livestock and industrial sectors. Growth has not been even across all agricultural sectors. Livestock and fishery production had increased substantially, from 15 % and 1 % of overall agricultural output in 1978 to 33.7 % and 10.2 % in 2005. These changes reflect the growing availability of animal proteins, particularly pork and eggs, at the cost of grain production. Today, China is the world's largest rice-producing country and is a net exporter of rice. It is also a net exporter of vegetables, fruits, and aquatic products. In most years, China is a net importer of wheat and soybeans as well as cotton, palm, and soybean oils (Dang 2006; Lohmar et al. 2009; Sonntag et al. 2005).

According to the 2007 agricultural census, there were 200 million farm households on an estimated 122 million hectares (494 million acres), averaging 1.5 acres per household. Reflecting the land tenure of the Imperial Period, these small holdings remain divided into small plots unevenly dispersed. Intensive practices, high levels of fertilizer application, double- or triple-cropped fields, and extensive irrigation characterize these farms. On this scale, Chinese agriculture is able to make use of capital-intensive chemical inputs, such as fertilizers, pesticides, and herbicides, but mechanization remains limited. As land and water limitations increasingly make themselves apparent, it is unclear whether production can continue to increase within the current structures of land holding and family labor practices (Lohmar et al. 2009).

In 2005, 745 million or more than half of China's 1.3 billion people were living in rural areas. Two-thirds were employed in agriculture, animal husbandry, and fishing (Dang 2006). In terms of rural labor, scholars note two trends which indicate significant social and cultural challenges: rural out-migration and gender inequalities. Rising urban-rural income disparity is a leading factor behind emigration. Reduced accessibility to education, urban-biased investment, and insufficient rural credit contribute by

intensifying an urban-rural divide, which remains in cities' favor (Lu 2006). There is also a perceivable male-female wage gap. In terms of work itself, women are being left to tend fields, are given inferior access to off-farm employment, and earn less for on-farm work (Rozelle et al. 2006). Although China has one of the highest female labor force participation rates in the world, with about 84 % of women (ages 15-60) in the labor force, and women comprise about 45 % of the entire labor force, women tend to work at lower levels. Some scholars argue that discrimination against women has increased in the reform period in terms of recruitment, layoffs, and required early retirement. Others are more positive, seeing greater inclusion of women in labor and greater opportunities post-reform (MacPhail and Dong 2006).

Potentially related to changing labor availability, several trends are emerging in land use within the current system. Cropped acreage is decreasing while land assigned to pasture and grassland is increasing. A growing demand for meat is in part responsible, as the price of animal products has increased correspondingly (Dang 2006). Yet the requirements of animal husbandry are also a factor. Livestock management requires less labor than intensive grain production, allowing farm families to diversify their approach to the developing market economy.

In terms of state support, the decreasing value of agriculture to overall national wealth has put pressure on research and development as well as extension services, the local, regional, and national offices that research and disseminate information intended to improve agricultural production. Increasing funding to the extension service has grown progressively difficult to rationalize. In part, there are structural reasons underlying this funding problem. The extension service remains overstaffed with little coordination between the central and substations, allowing for redundancy in research. Many employees spend only a fraction of their time on extension work, instead pursuing topics of little interest to farmers. For these reasons, recent changes to the extension service have made

raising funds to support agricultural research institutes the responsibility of the institutes themselves. The matter is further complicated because of a lack of private institutes and private funding. Because extension services are a public endeavor, their status is central to discussions of ongoing agricultural improvement (Sonntag et al. 2005).

Connected to the issue of the extension service is that of farmer associations. As of 1995 there were around 100,000 farmer associations yet participation was quite low. Even with government initiatives to promote them, especially through a revision in 2002 to the Agricultural Law which provided a legal basis for their development and sanctioned them as legitimate providers of services to members, current estimates place 2–3 % of households as participating. This can be explained through their location. Despite the high number of active societies, only 7 % of villages have functioning associations, and many are congregated in regions which specialize on high-value crops and livestock (Sonntag et al. 2005). Thus what these figures indicate is a potential for infrastructural development. Farmer association and extension work, if extended to more villages and farmers, may facilitate future gains.

Summary

Associated with millennia of agricultural production, but especially the previous three decades of industrialization, specific environmental challenges have developed in China. Today Chinese agriculture approaches the upper limit of its ability to supply greater quantities of food and faces an assortment of grassland degradation, soil erosion and nutrient loss, atmospheric contamination, air and water pollution, and solid waste disposal issues. As China's population continues to rise, increased pressure will be placed on the reclamation of marginal soils, furthering these processes and outcomes while intensifying trends toward salinization and desertification. Addressing these challenges will require significant alterations and reforms to existing policies

and practices. Many scholars agree that comprehensive land reform is necessary, to emphasize farmer tenure, to declare firm property lines, to allocate water access, and to institute overall water safety and control mechanisms. To conserve soil and prevent erosion, recommendations include the wide-scale adoption of hedgerows into annual and perennial cropping systems, the utilization of rotational grazing, and diversified crop rotations as well as conservation tillage systems, including the conversion of fragile land to grassland or forest. To lower water and soil contamination, fertilizer and pesticide applications should be reduced through pest management strategies and optimized fertilizer applications. Improvements in forest management and replanting programs, and continuing reform of the extension service, require increased support to strengthen their services to farmers throughout China rather than specific regions (Dang 2006; Lohmar et al. 2009; Sonntag et al. 2005; Qu and Li 1994).

A survey of Chinese agriculture and its history reveals a narrative of farmers and farming which has successfully adapted to a variety of natural and human-centered challenges, supplying its own people, its region, and the world with highly valued and essential agricultural commodities. While there are many things to learn about the interactions between farming and the environment, Chinese agriculture poses potential lessons for contemporary farming practices. Perhaps the greatest are the value of adaptation and the latent benefits of labor-intensive practices. These appear to be integral parts of what very well may be an alternative model of agricultural improvement.

Cross-References

- [Climate Change, Ethics, and Food Production](#)
- [Economy of Agriculture and Food](#)
- [Population Growth](#)
- [Trade and Development in the Food and Agricultural Sectors](#)
- [Water, Food, and Agriculture](#)

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Chocolate: Ethical Dimensions

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Introduction

All you need is love. But a little chocolate now and then doesn't hurt.

Lucy Van Pelt

Like many human foods that require some processing, it is hard to know what was the mental process that led some Native Americans in what is now called Central America to convert the seeds inside a cacao pod to a desirable drink some 3,500 years ago. Somehow it happened, and chocolate became a thread that can be followed through the rise and fall of empires, the expansion and decline of corporations, and the shifts in dominant food regimes from nation-states to corporate producers to food activists. Like many desirable substances, chocolate has been the focus of ethical and moral questions for at least the past millennium. At different points in time and at different places, chocolate has implicated all of the ethical issues of justice and rights, autonomy and consent, care and harm, and sovereignty and egalitarianism. This entry will provide an overview of the various ethical issues that over time have been implicated in the production and exchange and consumption of chocolate.

In order to establish a foundation so that the subsequent sections will be more comprehensible, the first section will provide a brief background of the biophysical and social processes that have combined over time to create the chocolate value system. The second section will describe the ethical issues that are implicated in the social relationships between the production and the consumption of chocolate. While the third section describes ethical aspects of the social relations of production including manufacturing, the fourth section outlines ethical aspects of the ecological relations of production.

Ethical issues in the social and economic relations of exchange are the topic of the fifth section, while ethical dimensions of the modes of consumption are the focus of the sixth section. After a brief discussion of appropriation and substitution in the seventh section, the eighth section concludes the entry with a discussion of ethical activism along the value chain.

Background

*Well, folks, it looks like we're up chocolate creek
without a popsicle stick.*

The Gingerbread Man

Chocolate comes from the small tropical tree *Theobroma cacao* L. of which there are three varieties – Criollo, Forastero, and Trinitario; “theobroma” comes from the Greek word for “food of the gods,” and “cacao” comes from the name for the plant (“kakaw” or “kagaw” or “cacahuatl”) in several Mesoamerican languages. The fruit of the tree is a pod containing a sweet pulp surrounding 30–50 seeds or beans. It was domesticated in the Amazonian basin of north-eastern Peru, probably accidentally and probably for the pulp surrounding the seed that was either consumed directly or fermented (Clement et al. 2010).

The pods are harvested during a large portion or all of the year manually using a curved knife on a long pole. The pods are opened, and the cocoa seeds and pulp are removed and kept in piles for several days, during which the pulp ferments and runs off. Next the wet beans are fermented for several days and then dried for several more days, either in the sun or with artificial heat, after which the beans are polished with dry clay and shipped to one of the countries where chocolate is produced (Federation of Cocoa Commerce n.d.).

In a factory the beans are roasted, cracked, and deshelled to produce the small pieces called nibs, which are then ground into a thick paste (“chocolate liquor” or “cocoa paste”). The process splits into two tracks at this point. First, the liquor can be separated into cocoa powder and cocoa butter. Second, sugar and cocoa butter can be added to

the liquor; the mixture is then refined, conched, and tempered to make chocolate.

Currently chocolate is used as an ingredient in industrial food manufacturing, for home cooking, and for ready-to-eat products. For the first 25 years of the Hershey Company, its products (powdered cocoa, chocolate syrup, chocolate chips) were solely for industrial consumption. Whereas the National Cookbook of 1856 in Philadelphia uses chocolate only to make a hot drink, in 1861 in England Mrs. Beeton’s Book of Household Management included a recipe for chocolate soufflé, and the Century Cookbook of 1899 in New York uses chocolate to make puddings, fillings and frostings, as well as hot drinks.

In 1842, Whitman’s was the first chocolate candy company in the USA. During the last 5 years of the nineteenth century, the Hershey Company was the first firm in the USA to develop milk chocolate, which was sold first in a milk chocolate bar and then as the iconic Hershey Kiss in 1907. In 1923 after 3 years of research, the Mars Company began selling the Milky Way candy bar. Nestle entered the chocolate sector with the acquisition of Peter, Cailler, Kohler Swiss Chocolate Company in 1925.

Currently cocoa beans are produced commercially in more than 20 tropical countries, with Cote d’Ivoire, Indonesia, and Ghana accounting for approximately two-thirds of total production volume and value (FAO 2013). Currently most beans are exported to firms in the North to be roasted and ground; two of the top three grinders globally, Cargill and ADM, are commodity traders; only one, Barry Callebaut, is a chocolate firm. Wikipedia currently lists 59 identified companies that process ground cocoa into chocolate, among which Cadbury (as of February 2010 part of Mondelez International), Barry Callebaut, Hershey, Lindt, Mars, and Nestle are the largest. Thus cocoa beans go from farmers to small traders to wholesalers to exporters, or from farmers’ cooperatives to the exporters, and thence to the grinders. The processed chocolate then goes to food manufacturers, including some who make ready-to-eat chocolate items, and most of the processors also produce chocolate items for retail trade. While

the cocoa/chocolate value system is dominated by a few large firms that both process cocoa beans and manufacture ready-to-eat items, there does not appear to be any cartel controlling production and trade. None of the major companies appears to have vertically integrated either upstream into farm production or downstream into retail sales.

The Social Relationships Linking Production and Consumption

It's everybody's non-pollutionary, anti-institutionary, pro-confectionery factory of fun!
Willy Wonka and the Chocolate Factory

For almost all of its existence, chocolate has been implicated in imperial relations, beginning with Mesoamerican empires and then subsequently with European empires and neo-imperialist structures. As noted in the previous section, the tree was first domesticated in northeastern Peru and then spread northward into Central America. The earliest remnants of human consumption date from about 3,500 years before the present time and were found in sites in what is now Honduras associated with Paleo-Indian cultures during the Archaic, pre-Olmec period. These remnants indicate that the technique of roasting and grinding the seeds and mixing the powder with the pulp and hot water and whipping the liquid into a frothy drink had been developed. This and subsequent archeological findings suggest that chocolate was always consumed as a beverage.

After the Olmec culture, the Mayans used chocolate for ceremonial purposes; there is some evidence that its consumption may have been restricted to the religious and political upper class. Finally, for the Aztecs, chocolate was associated with Xochiquetzal, the goddess of fertility. (Ixcacao was the original Mayan goddess of fertility, but was supplanted by Ix Chel; the Aztecs keep the connection between fertility and chocolate, but change the name of the goddess to Xochiquetzal.) Cacao was produced in various parts of the empire and transported to the imperial centers; in some cases the tribute required from other areas of the empire was

paid in cacao. Chocolate was viewed as a luxury good throughout the empire.

The first record of the dry mixture of ground cacao seeds and cacao pulp being shipped to Europe is from 1585, over 60 years after Cortes arrived in Mexico. Initially units of the Spanish army enslaved native Mesoamericans to produce cacao for export; it was marketed as an expensive luxury good. Subsequently Spanish landholders began importing slaves from Africa to grow cacao on plantations. After the countries of Latin America won their independence from Spain and Portugal in the early 1800s, the *forastero* variety of *Theobroma cacao* was taken from the area of its origin in western Amazonia to West Africa, where Ghana and Cote d'Ivoire are currently two of the three main producing countries in the world (Ryan 2011). While today this translocation of a valuable species might be regarded as a violation of biosecurity and food sovereignty, it was a common practice among the imperial powers in the 1800s and 1900s (Hecht and Cockburn 1991).

The popularity and price of chocolate led firms to develop new techniques for processing the cacao. In the 1700s it was discovered that the cocoa butter could be squeezed out of the cacao, leaving a hard durable chocolate, and in the 1800s solid chocolate was being produced in many European countries. In 1879 Rodolphe Lindt invented the conching process in which the chocolate paste is repeatedly spread over a surface and then scraped back off the surface continually for many hours to produce a softer chocolate with a less acidic, mild, rich taste.

During the 1800s and 1900s, the chocolate industry proceeded upon somewhat parallel tracks in Europe and North America, with ethical issues perceived to some extent on both sides of the Atlantic. In 1879 the Cadbury Brothers established the town of Bourneville and located their manufacturing operations there. As noted in the previous section, the development of milk chocolate by Milton Hershey at the end of the nineteenth century led the company to shift its emphasis from goods for industrial food production to consumer goods. Although writers at the time saw ethical issues with company towns

(the compound exploitation of the workers through low wages, poor working conditions, environmental pollution, high rents, and high prices at the company store and the pervasive discipline of the workers through a company police force and a company supported faith-based organization; cf. Porteous 1970), Hershey decided to build a new town in rural southeastern Pennsylvania proximate to the Chesapeake and Delaware Bays where the imported cacao beans and sugar would arrive (Craft 2009). Before World War I Hershey relied on beet sugar from Europe, but the disruption caused by the war led the firm to build a sugar plantation and production facilities in Cuba (<http://www.thehersheycompany.com/about-hershey/our-story/hersheys-history.aspx>). Again although many writers today would emphasize the ethical issues of land control and food sovereignty inherent in such a venture, it was a common practice by industrial firms at the time (Hecht and Cockburn 1991).

Finally, this section considers the ethical aspects of the organization of the chocolate industry. One of the ways in which developing countries with high reliance on exported commodities try to secure a fair price for their commodities is by gaining countervailing power in the international market against the large-scale buyers of the commodity through forming marketing boards at the national level and a cartel among the marketing nations. Most of the marketing countries established marketing boards after independence in the 1950s and 1960s, and like many commodities, an effort was made to form a cartel of cacao-exporting countries. Although negotiations began in 1963, it was not until 1972 that an agreement was reached under the auspices of the United Nations Conference on Trade and Development (UNCTAD) establishing a system of buffer stocks and export quotas (LeClair 2000, p. 64). Neither this agreement nor three subsequent agreements were successful in stabilizing the market price at the level desired by the exporting countries. The nation with the largest production, Cote d'Ivoire, refused to participate, and new producers such as Malaysia entered the market in the 1980s. The marketing boards themselves were victims of the World

Bank and International Monetary Fund policies of structural adjustment in the 1980s and 1990s. As a result of the failure of the cartel and the forced abolition of the marketing boards, the real price of cacao beans at New York fell from \$1,613.70 per metric tonne in 1974 to \$589.75 in 1996.

While the cocoa-exporting countries have not been successful in using their market concentration to obtain better prices from processors, the processors have perhaps been more successful in using their market power to obtain higher prices from consumers. The chocolate industry is highly diffuse globally; most of the large firms are active in many countries. Worldwide, the five largest firms in the industry (Ferrero, Hershey, Mars, Mondelez (Mondelez International is the name of the US-based multinational corporation comprising what were formerly the chocolate and confectionery holdings of the Kraft Corporation, including Cadbury and Toblerone.), Nestle) control slightly more than half of the market (IBISWorld 2013). As a result, despite the distressed global economy and rising sugar and cocoa prices, profit as a share of total revenue is expected to rise to 8.6 % for the industry as a whole. Much of the recent increase in concentration has come through mergers and acquisitions (e.g., Hershey bought Reese, Mars bought Wrigley) that have impacts on employment and community well-being that raise ethical issues. One way in which firms in Europe and the USA have been able to use their political power is to obtain favorable government policies on sugar production and importation (USDA ERS 2012).

The Social Relations of Production and Manufacturing

The previous two sections have noted that during much of its history, various aspects of the cacao production system have been ethically problematic. However, during the past three decades, much of the ethical focus has been on the social and economic relations of production and manufacturing and of marketing and exchange.

With the exception of Brazil and Ecuador, cacao is grown on the farms of smallholders having generally between 1 and 3 acres (Franzen and Mulder 2007); in Brazil the average cocoa farm is 20 ha. Despite the relatively small scale of African and Asian cocoa farms and despite the fact that cacao pods are harvested year-round, a large amount of labor is required for the harvesting and on-farm processing (dehusking and fermentation). For example, the average farm in Cote d'Ivoire produces approximately 4 kg of intermediate product per day (ICCO n.d.) As noted in the previous section, cocoa farmers have had to deal with gradually falling prices for their crop, and because labor is their main cost, they have had to reduce the cost of labor as much as possible. To do this they have chosen to rely on child labor and to maintain those children and other laborers in conditions that have been labeled as slavery. While the ethical issues with slavery may be clear to all, the International Labor Organization (2004) indicates that the forms of child labor that raise the most ethical issues include cases where children working in cocoa are not enrolled in school, where work makes them leave school prematurely, or where they have to combine school attendance with long hours and/or heavy work that interferes with their learning.

Berlan (2013) argues that labor in cocoa production needs to be analyzed using a broad understanding of the degrees and forms of labor coercion rather than a simple dichotomization of free and unfree labor. Her analysis of her fieldwork in Ghana shows that the range of choices children have is significantly constrained by their family situation, so that while they may not be working against their will, their ability to exercise agency was very limited. She also argues that it is important to distinguish between local labor and trafficked labor and to be very careful about the accuracy of information about the latter. While both child trafficking and children working in hazardous activities are illegal, Berlan focuses on the latter, noting that the involvement of children in hazardous activities probably applies equally to local child workers and trafficked child workers. Berlan notes the difficulty of

distinguishing between (acceptable) child work and (unacceptable) child labor. While the concepts of apprenticeship to learn a trade, and unpaid family labor, may be widely used, they do not clearly distinguish between child work and child labor.

Concerns about de facto slavery in cocoa production were not a new thing in the late twentieth century; in the middle and later 1800s articles in *The New York Times* expressed concern about the use of slaves in cocoa production in the Caribbean and Latin America. In the early 1900s, Cadbury shifted its sourcing from the Portuguese western African islands to what was then the Gold Coast Colony because of allegations that Portuguese growers in the islands were using slaves from the Portuguese colony of Angola on their cocoa plantations (Satre 2005). Shortly thereafter the topic pretty much disappears from the pages of *The New York Times* until the 1980s, where it continues sporadically up to the present time. A series of articles in the *Milwaukee Journal* (Raghavan and Chatterjee 2001) and a BBC broadcast also in 2001 increased attention to slavery in cocoa production (Wikipedia 2013). While Off (2006) documents the conditions of "enslavement" under which Malian boys work on cocoa farms in Cote d'Ivoire, Berlan (2013) did not find slave labor in the community she studied in Ghana. As noted above, Berlan (2013) argues that while de jure slave labor may be readily identifiable, de facto slave labor is much less clear and more nuanced.

The social and economic relations of production occur both in the cocoa fields and in the chocolate factories. Both in Western Europe and in the USA, labor in chocolate factories participated in the unionization movements of the late 1800s and early 1900s. Although an effort by the Congress of Industrial Organizations to organize the Hershey Chocolate Corporation workers against the paternalism of the company town ended in failure after the company broke a sit-down strike in 1937, the Bakery and Confectionery Workers' International Union of America, affiliated with the American Federation of Labor, was more successful in 1939.

Labor maintained an improving socioeconomic status until the rise of neoliberalism in the 1980s. During the past 30 years, mergers and acquisitions have resulted in decreasing employment in production facilities in North America and Europe. At the same time increasing globalization of marketing has led firms to open new plants in Latin America, Africa, and Asia. In 2002 some of the trustees of the Hershey Trust that owned the Hershey Chocolate Corporation voted to sell the corporation to the Wm. Wrigley Corporation; however the proposal provoked tremendous community and regional opposition, and the Pennsylvania attorney general was able to remove the trustees from office, so the sale did not take place. Most recently, the Hershey Corporation faced strong criticism for bringing foreign students to work on educational internships in its factories but then paying them very little to do line jobs that entailed no training or education.

The Ecological Relations of Production

The cocoa value chain involves not only social relations of production with other social actors but also ecological relations of production with elements and aspects of the biophysical environment. Although Morbey (1995) argues that cocoa is a crop that has the potential to protect the environment, most of the literature emphasizes the ways in which cocoa production extracts value from the biophysical environment in unsustainable, unregenerative ways and in doing so degrades the ecological functioning of the agroecosystem. Ekanade (1991,1992) describes the ways in which and the extent to which cocoa production in Nigeria degrades the fertility and health of the soil and the health of the forest land cover. Not only have the biotic and edaphic components of the agroecosystem in the Nigerian Cocoa Belt been almost totally degraded, but in many areas of the belt, cocoa production is being abandoned.

In a life cycle assessment of cocoa grown in Ghana, Afrane and Ntiamoah (2011) found that freshwater aquatic ecotoxicity was the most significant negative impact on the biophysical

environment from pesticide use and that “the production and use of fertilizers and pesticides account for almost all the environmental burdens in the cocoa production stage.” Cocoa farming also contributes to rainforest and old growth forest deforestation (England 1993). By clearing land into these forests, farmers decrease the biodiversity and interactions between the organisms that naturally live in this area (Bentley et al. 2004). Many wildlife habitats are destroyed and the plant species diversity is drastically reduced (cited in http://en.wikipedia.org/wiki/Environmental_effects_of_cocoa_production). The extent of deforestation has increased as the production of cocoa has shifted from shade-grown to sun-grown techniques; sun-grown techniques are more productive per hectare, but produce a lower-quality cocoa. And as chocolate manufacturers have substituted palm kernel oil for cocoa butter, the deforestation caused by environmentally damaging palm oil production has been an issue (<http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/ADM-Cocoa-UK-commits-to-100-segregated-certified-palm-oil-in-Europe>).

Ecological relations of production occur both with respect to productive activities on the farm and with respect to processing and manufacturing activities in factories. The literature did not identify any environmental issues with processing and manufacturing activities, perhaps because these take place largely in Europe and North America where environmental impacts from manufacturing are legally regulated.

The Social and Economic Relations of Exchange

Another one of the loci in the chocolate value system where ethical issues occur is in the linkages between sellers (suppliers) and buyers (intermediate and/or final consumers). These linkages occur between farm producers and middlepersons, between middlepersons and exporters, between exporters and processors, between processors and manufacturers, between

manufacturers and wholesale and retail distributors, and between retailers and final consumers.

Perhaps the greatest amount to attention concerning the ethics of chocolate has been paid to the equity of the exchange between farmers and first buyers. During the 1980s, alternative trading organizations gradually shifted the composition of their merchandise from handicrafts to agricultural goods – initially coffee and tea and subsequently cocoa and other foodstuffs (Wikipedia 2013). But to expand the market beyond the ATO's own outlets, some way of communicating to the buyer the alternativeness of the merchandise was needed; to meet this need, fair trade labels were developed (Renard 2003). During the 1990s fair trade labeling organizations proliferated in Europe and North America, but in 2002 the Fairtrade Labeling Organization International (FLO) attempted to unify the multiple organizations under one process and one label. Although effective for about 10 years, within the past couple years, divisive conflict has occurred within the FLO.

In general, fair trade arrangements are negotiated directly with a growers' cooperative, guarantee a minimum price that will cover production costs, and include both a long-term contract and community investment, all in order to avert environmentally degrading production practices, unremunerative economic transactions, and unethical labor practices (Khamis 2012). One exemplar, Divine Chocolate Ltd. was formed in 1997 as a joint venture between a Ghanaian cocoa growers' cooperative, a fair trade supply chain management company, and a cosmetics retailer (Davies 2010); not only the cocoa but also the sugar in their chocolate is fair trade, and the company manufacturing their chocolate is fair trade compliant. As another example, after the addition of an emphasis on fair trade to its original organic identity, sales of Green and Black's chocolate in the UK grew significantly. But, as Khamis (2012) points out, the increase in sales has been accompanied by a de-emphasis of the ecologically and socioeconomically ethical aspects of the chocolate, and the manufacturer has not made any effort to make ethical consumption more available to lower-income consumers;

while the chocolate value chain has been made equitable for some farmers, the value chain itself has not been transformed to rectify basic structural inequities.

While there were concerns that Green and Black's ethical approach might be diluted when the firm was acquired by Cadbury, in fact 4 years later Cadbury committed its main product line to fair trade, in effect tripling fair trade chocolate sales in the UK (Boyle 2009). This commitment appears to have endured through the acquisition of Cadbury by Kraft late in 2009 and the spin-off of Kraft's confectionery lines into Mondelez in 2012. Holmyard (2007) noted that many retailers were adding fair trade items to their own brand lines but also questioned the extent to which these additions were impacting the ethical issues to which fair trade is directed. In fact, many of the own-brand fair trade items were being supplied by the Divine Chocolate Company (formerly the Day Chocolate Company), but this led critics to question the ethical value of selling a fair trade item in a store that was not itself committed to the social, economic, and environmental principles of fair trade (Davies 2010). These questions were intensified when the Divine management proposed selling their products at Royal Dutch Shell stations and McDonald's outlets.

As noted above, the cocoa-exporting countries were never successful in forming a cartel to provide power in the international market for raw cocoa to countervail the oligopsonistic power (the ability to set prices significantly lower than those that would occur in a truly competitive market) of the cocoa processors. Although cocoa producers enjoyed a brief rise in prices in the mid-1970s, by 1982 prices had returned to their historical lows where they remained until 2008, illustrating the market power of the processors (<http://www.tradingeconomics.com/commodity/cocoa>). In addition, Khamis (2012) suggests that speculative buying on the cocoa futures markets leads to wide fluctuations in prices that destabilize the marketing arrangements of the producing countries. At the downstream end of the value chain, the large manufacturers were accused of using their

oligopolistic power to fix retail prices for their products in Canada in 2007 (Johnston 2013).

Finally, the social and economic relations of exchange concern the marketing of chocolate to final consumers. This will be discussed in greater detail in the next section, but here one particular ethical issue merits mention – the marketing of chocolate to children. Based on the premise that chocolate is an unhealthy product, Davies (2010) questions the ethical appropriateness of advertising chocolate directly to children, even if, as was the case with Divine products, the chocolate was ethically produced and was accompanied by educational material concerning the means and relations of production. In 2007, Mars was the first food company to voluntarily cease advertising to children younger than 12 years of age (<http://www.mars.com/global/about-mars/history.aspx>).

Modes of Consumption

What you see before you, my friend, is the result of a lifetime of chocolate.
Katharine Hepburn

In contrast to modes of production, which have ethical implications because of their impacts on the well-being of workers and the biophysical environment, modes of consumption refer to the ways in which the organization and performance of consumption have ethical implications because of their impacts on the well-being of all consumers and the biophysical environment. At the heart of the analysis of modes of consumption of chocolate is the question: what is the social meaning of chocolate? In brief, over its history chocolate has gone from being an elite luxury item to a treat affordable by middle class consumers, to an item of mass consumption, and finally back to an element of foodie aesthetics. Whereas 100 years ago Hershey was Fordist chocolate, a couple decades later Mars was Sloanist chocolate, and now Ghirardelli and Godiva are foodie chocolate (Medeiros 2000).

During its recent history, much of the contestation concerning chocolate has focused on its health impacts. Articles in *The New York Times*

100 years ago claimed that eating chocolate was harmful to human health and chocolate was banned from US Army rations during World War I (*New York Times*, 15 December 1913, 29 December 1914). Over the years, chocolate has been implicated in acne, obesity, and diabetes. Perhaps to counter the negative discourse, in 1923 Mars introduced the Milky Way; the “milk” in the Milky Way was malted milk, then perhaps more than now seen as a healthful ingredient. More recently, scientific studies have supported the beneficial impacts of chocolate consumption on cognitive function, hypertension, and insulin resistance (Desideri et al. 2012). The debate about the positive and negative human health impacts of chocolate has been the focus of two recent major edited volumes (Paoletti et al. 2012; Watson et al. 2013); together the two books comprise 52 chapters that cover the relationships of chocolate to almost every aspect of human physical and mental health and well-being. Just to illustrate the tremendous richness and diversity of the debates, one chapter questions the relationship between chocolate and acne, and another argues that consumption of chocolate helps prevent diabetes. As further evidence of the complexity, the Hershey Company is currently facing a class action lawsuit for making an antioxidant health claim that was not approved by the US Food and Drug Administration (<http://www.confectionerynews.com/Manufacturers/District-court-will-not-dismiss-Hershey-antioxidant-labeling-suit>).

To a significant extent, the shift in the medical perspective on chocolate has been linked to a shift in the formulation of chocolate items. Concerns about the impacts of chocolate on acne, obesity, and diabetes were based on formulations of chocolate that included significant amounts of sugar and milk to balance the bitterness and acidity of the cocoa. The current emphasis on the health benefits of chocolate consumption is based on formulations of “dark chocolate” that are as much as 87 % cocoa and thus have a higher prevalence of the beneficial flavanols (Gray 2012). At the same time, the increasing popularity of very dark chocolate has been linked to the upscaling of chocolate consumption. Although Hershey had marketed

a “Not So Sweet” bar in 1934, it was not popular and was discontinued in 1937 (<http://www.thehersheycompany.com/about-hershey/our-story/hersheys-history.aspx>). But by the 1980s, dark chocolate (70 % and above) was portrayed in the pages of The New York Times as desired by more sophisticated, gourmet tastes. As Woerle (2012) notes, the desire to be consuming the elite quality chocolate becomes entwined with the wish to be consuming ethically produced chocolate.

Ultimately chocolate is, at least in part, what consumers want it to be. In the previous sections, the ethical dilemmas with chocolate being a sweet for children were noted. Chocolate has always been seen as an energy food; in the 1900s Hershey marketed chocolate tablets for energy, and more recently Mars introduced a chocolate energy bar. Currently however chocolate has yielded the energy mantle to specialized energy drinks, and it is those products that are dealing with the ethical issues associated with rapid, powerful, and enduring elevated human energy levels. Throughout its history there have been claims that chocolate has aphrodisiac effects (Afoakwa 2008), and Davies (2010) criticizes Divine Chocolate for participating in sexually themed Valentine’s Day competitions. One website urges men to think of chocolate as a sweet treat, an arousing flavor, and an alluring scent for seducing women (http://www.askmen.com/scent/scent_300/332b_seduce-her-with-chocolate.html). And finally, in contrast to the view of chocolate as a gourmet delicacy, chocolate is increasingly portrayed as convenient. Although pieces of chocolate covered with a hard shell had been developed in Europe and were issued to soldiers in the Spanish Civil War, their popularity was greatly increased when Mars began using the slogan “melts in your mouth, not in your hand” for its M&M products in 1954 (<http://en.wikipedia.org/wiki/M%26M%27s>). Both Mondelez (formerly Cadbury/Kraft) and Nestle have recently developed a “non-melting chocolate” to increase their sales in markets with hot climates (<http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/Nestle-s-answer-to-non-melting-chocolate>).

Appropriation and Substitution

Life is like a box of chocolates. You never know what you’re gonna get.

Mrs. Gump

In 1987 Goodman et al. proposed that industrial capitalism tends to restructure the agrifood system by appropriating non-capitalist production, by bringing processing and marketing functions into the ambit of the capitalist agrifood system, and then by substituting industrialized synthetic forms of those materials and processes for the traditional authentic originals. Hopefully the second section of this entry provided at least a rough sense of the ways in which artisanal chocolate was appropriated from artisanal producers first by the native Latin American empires and subsequently by the European colonial empire and then in the late 1800s appropriated from European and North American craftspeople by the emerging industrial confectionary firms. In this section then we turn briefly to a discussion of the ethical issues entailed in the tendency of industrial capitalism toward substitution.

Many nations have established standards of identity for cacao, chocolate liquor, and different intermediate and final chocolate products. In the USA, the Food and Drug Administration sets standards for the purity of cacao nibs, the percentage of cacao fat and dairy fat in chocolate liquor, and, for example, the percentages of chocolate liquor and milk solids and carbohydrate sweeteners in milk chocolate (<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=163.130>). Within the boundaries set by these standards, chocolate companies attempt to identify ways to produce products that will be acceptable to their customers at the lowest possible monetary cost, subject to other constraints, e.g., health. For example, “the historical uncertainty in the cocoa butter supply and the volatility in cocoa butter prices forced confectioners to seek other alternatives” such as palm kernel oil (Wang et al. 2010, p. 1137). And even though both the USA and the EU have policies on sugar that benefit confectionary companies,

chocolate companies are substituting high-fructose corn syrup for sugar.

The question is whether these substitutions implicate an ethical issue. The companies conduct very sophisticated sensorial testing to determine whether a significant percentage of users will notice any organoleptic difference caused by the substitution. And the substituted ingredients are clearly listed on the label. So the substitution would seem to pass the ethical tests of transparency, aesthetics, and harmlessness, albeit not prior informed consent. Indeed the companies justify some of the reductions in fat content as efforts to reduce the calories in chocolate to improve its healthfulness. Perhaps the lingering ethical issue is the distribution of the net income attributable to the substitution between the company and the buyer.

When less expensive ingredients are substituted and the substitution is not included on the label, it is considered to be counterfeiting and fraud and thus a violation of generally accepting ethical norms (<http://www.nytimes.com/2013/06/27/business/food-fraud-more-widespread-than-suspected.html?pagewanted=2&r=0>). Less clear-cut may be the issue of artificial chocolate flavoring. Research and development in food chemistry has now produced an artificial chocolate flavor that is not readily distinguishable from cocoa or natural chocolate flavor in many uses. Currently US FDA regulations permit the product made with this artificial flavoring to be labeled “chocolate artificially flavored” and require that the list of ingredients include “artificial flavors” (<http://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicy-GuidanceManual/ucm074446.htm>). Also less clear-cut is the increased use in chocolate of what in the past were waste products from the chocolate production process. For example, Barry Callebaut has developed a process to grind cocoa shells into a powder fit for use as a cocoa replacer, fat bloom inhibitor, and ingredient in other foods (<http://www.confectionerynews.com/Ingredients/Cocoa-shell-powder-has-numerous-uses-in-chocolate-and-foods-says-Barry-Callebaut>). While the repurposing of what had been waste into a food ingredient

may be an ecological improvement, it raises the question of the extent to which consumers should be publicly consulted about changes in the composition of a traditional and iconic food like chocolate.

Ethical Activism Along the Value Chain

Nobody knows the truffles I've seen.
George Lang

While preceding sections have considered the various ethical dimensions of chocolate, in this section the focus is on applied ethics – the various forms of social activism that have sought to give prominence to those ethical issues. As noted above, the development of fair trade marketing arrangements for cocoa began in the early 1990s, at least in part in response to falling cocoa prices on the world market and to a perception that earlier development efforts had led smallholders to become dependent on the production of one or more commodities for export. The fair trade movement sought both to develop suppliers whose relations of production and exchange could be accurately characterized as “fair” and to develop marketing arrangements where the “fairness” identity could be maintained and thus a price premium could be realized. In the late 1990s, various human rights, children’s rights, and labor rights groups in the USA began publicizing and campaigning against slavery and child labor in cocoa production along with other economic activities. Various international environmental groups (e.g., Rainforest Alliance) have publicized the ecological issues associated with full sun cocoa and unsustainable palm oil.

Although it is generally agreed that these activist efforts have had impacts, there is less agreement on the substance and extent of those impacts. As noted above, Berlan (2013) argues that in many cases the local understanding of children’s involvement in cocoa production is very different from northern and western understandings of “slavery” and “child labor.” She (Berlan 2008) also suggests that only a small

percentage of the cocoa that is certified for fair trade is actually traded through fair trade channels. Nevertheless the activism has certainly stimulated a response, in at least some cases a significant response, from the corporations involved with chocolate. In 2012 Hershey announced that by 2020 it would use only fair trade certified cocoa and that it would accelerate its efforts to eliminate child labor in its supply chain (https://en.wikipedia.org/wiki/The_Hershey_Company). ADM Cocoa UK has committed to 100 % certified palm oil for its European operations, and Mars had committed to 100 % sustainable supply of cocoa by 2020 and zero environmental impact by 2040 (<http://www.foodnavigator.com/Product-Categories/Chocolate-and-confectionery-ingredients/ADM-Cocoa-UK-commits-to-100-segregated-certified-palm-oil-in-Europe>; <http://www.mars.com/global/about-mars/history.aspx>). To avoid mandatory federal certification and labeling of chocolate as “slavery-free,” in 2001 the corporations engaged in the importation and production of chocolate committed to a voluntary protocol to end child labor by 2005; 10 years later the terms of the protocol had still not been fulfilled (<http://topdocumentaryfilms.com/dark-side-chocolate/>).

In some ways ethical activism concerning chocolate has been made easier by the fact that two occasions of peak chocolate consumption are Valentine’s Day and Halloween; it is easy to argue that candy given to children on Halloween should not have been made with child labor and the candy given to one’s romantic partner should not have been bought for an unfair price. But those morally principled stances themselves entail ethical issues. Berlan (2013) questions the appropriateness of using commercial transactions to impose northern and western understandings of children’s rights on other cultures and suggests that many of the corporations involved with the production and manufacturing of chocolate have done more than fair trade arrangements to improve the well-being of cocoa-producing communities. Indeed, for several years, the International Cocoa Organization has been urging its members to pay more attention to raising the income levels of poor cocoa farmers. In contrast

to concerns about the inappropriate imposition of western standards, in 2007 “the Roundtable for a Sustainable Cocoa Economy (RSCE) met for the first time to start a dialogue of sustainability across the gamut of cocoa production – farmers, co-operatives, traders, exporters, processors, chocolate manufacturers, wholesalers, government representatives, NGOs, financial institutions and donor agencies.” (Khamis 2011).

Conclusion

La impericia al batirlo puede ocasionar de un chocolate de excelente calidad se convierta en detestable...

Como Agua Para Chocolate

This article has identified (1) some of the ethical issues entailed in the production and marketing of chocolate, (2) the various efforts to address those issues, and (3) ethical concerns about those activist efforts. Certainly some ethical issues that could have been covered have not. Perhaps most notable among these are the issues concerning gender and chocolate; in apology for their omission, I can only say that they are covered by Austin (2005) and Robertson (2009). With that apology, in conclusion I will briefly highlight four emerging issues concerning chocolate.

First, like all contemporary crops and agriculture, cocoa production will be significantly affected by anthropogenic climate change. Currently *Theobroma* species grow largely in the tropics spanning 20° on either side of the equator. The extent to which *Theobroma* will be able to thrive farther away from the equator will depend on the ways in which both temperature and precipitation regimes change in the subtropical regions (<http://thechronicle.com.gh/ghana%E2%80%99s-cocoa-production-to-decline-in-20-years/>).

Second, while cocoa production has been the proximate cause of significant environmental change, in the years ahead, it itself will be significantly affected by various forms of global environmental change. Already deforestation in Cote d’Ivoire is threatening both the human rights and the land rights of cocoa producers (<http://planetark.org/wen/69108>).

Third, the trade-off between shifting production to developing countries and decreasing employment in the North presents an ethical dilemma. On the one hand, developing countries rightfully expect to develop economically by doing themselves more of the processing of the raw commodities they produce. On the other hand, the well-being of whole communities in the North such as Hershey, Pennsylvania, depends on employment in chocolate processing and manufacturing. For example, Barry Callebaut has opened its second factory in Mexico, costing \$48 million, to supply chocolate to Grupo Bimbo, the domestic market, and Central America (<http://www.foodnavigator-usa.com/Suppliers2/Barry-Callebaut-opens-48m-factory-in-Mexico>).

The final emerging ethical dimension of chocolate concerns local and artisanal production both in the North and in the South. While Hershey, Mondelez, and Mars dominate the chocolate candy shelves of the supermarkets, there are 15 small-scale chocolate makers in the USA, and all large- and medium-sized cities have at least one or two small-scale shops where intermediate chocolate is reformulated to a desired level of sweetness or bitterness and then made into various sorts of candy specialties. These artisans are using their craft and their creativity to produce chocolate items that participate in the ethic of local and regional alternative food systems.

How these artisanal producers will fare in the years ahead and how small-scale cacao growers in Africa will fare in the years ahead remain to be seen. Hopefully this entry has given the reader some reason to believe that as their fates unwind, at least some of the consumers and manufacturers and dealers in the chocolate value chain will be thinking about the ethical dimensions of their relationships with chocolate.

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Christian Ethics and Vegetarianism

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Synonyms

Bible; Christianity; Jesus; Meat; Religion;
Veganism; Vegetarianism

Introduction

The relationship between Christianity and vegetarianism is complex and long-standing. On the one hand, vegetarianism has never been a significant part of Christian theology or practice, especially in the West, and most Christians today think of their dietary choices as nonethical decisions that are largely irrelevant to their faith. To the extent they address the issue at all, Christians typically defend meat consumption by noting that God gave humans “dominion” over the rest of creation (Gen 1:28), that he created humans but not animals in “his image” (Gen 1:27), and that humans have souls while animals do not. In other words, man is understood to be morally superior to the rest of creation in a way that gives him permission to eat nonhuman animals more or less as he chooses. Historically, this point of view has been supported by most Christian theologians and ethicists, including leading thinkers such as Augustine and Thomas Aquinas. For Augustine, eating animals is not sinful because God put them on earth for human use. “To refrain from the killing of animals,” he writes, “is the height of superstition” (Augustine 1966, p. 120). Influenced by both Augustine and Aristotle, Aquinas agrees that there is nothing wrong with eating animals, since they are man’s natural inferiors, owing to their lack of reason. The “order of nature,” he writes in several places, condones human consumption of animal flesh.

On the other hand, there is both biblical support and historical precedent for advocating vegetarianism on the basis of Christian ethics. While many passages in the Bible support meat eating, it also usually represents the use of animals for food as in some way problematic. Other passages are more favorable to vegetarian arguments. Some of Jesus’ first followers eschewed meat, and many later Christian groups such as the Carthusians, Benedictines, and various monastic communities had or continue to have vegetarian commitments. For most of Christian history, abstaining from meat has been an integral part of Lent and other ritual practices. Prominent Christians such as Tertullian, Origen, Marcian, St. Benedict,

John Wesley, Albert Schweitzer, Leo Tolstoy, and Karl Barth defended vegetarianism. Several recent Christian authors make the same case. Typically, Christian vegetarians do not deny that eating meat in some circumstances is ethically justifiable, but they portray vegetarianism as an obligation for those who have good alternatives to meat readily available to them.

While Christian arguments for vegetarianism often parallel secular ones, two commonalities are distinctive of Christian approaches. Methodologically, claims made within Christian ethics are biblically based in some way, either by relying on Old or New Testament passages directly or by drawing out the implications of scripturally grounded general ethical principles. Substantively, Christian perspectives are united by the claim that only a vegetarian lifestyle shows proper reverence and appreciation for the goodness of God and his creation. This point can be developed in different ways, and since different strands of Biblical evidence can be adduced in support of it, Christian ethics gives rise to a variety of arguments for vegetarianism.

Protological and Eschatological Arguments

One of the most common themes among Christian vegetarians is the protological assertion that vegetarianism represents God’s original intent for his creation. God grants man “dominion” over the earth after proclaiming every creature in it to be good. Then he says, “See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food” (Gen 1:29). After extending this command to nonhuman animals as well, God pronounces his vegetarian creation “very good” (Gen 1:31). Perhaps more than any other passages, these verses are used to claim a Biblical basis for vegetarianism. Christian vegetarians emphasize that man’s “dominion” is not a license to tyrannize, and it does not justify unrestricted meat eating in the way commonly supposed. Rather, these passages show that humans are to be creation’s stewards, with

caretaker responsibilities towards what ultimately belongs to God.

The message of the Edenic picture soon becomes more ambivalent, however. After the Fall and the Flood, God explicitly permits meat eating as an apparent concession to human sinfulness. “Every moving thing that lives shall be food for you; and just as I gave you the green plants, I give you everything” (Gen 9:3). God adds the caveat that humans “shall not eat flesh with its life, that is its blood” (Gen 9:4), a point reaffirmed in Lev 3:17, 17:14, Deut 12:23, and later by the Jerusalem Council (Acts 15:19–20). God also directs humans to kill animals and eat them. At the first Passover in Egypt, the Israelites are told to slaughter and eat lambs, an event Jews commemorate annually in the traditional Passover feast. God allows the eating of other animals at Lev 11, and he directs their sacrifice in Lev 16:3–19 and in other places as atonement for human sin.

While these points complicate the protological argument for vegetarianism, arguably they do not vitiate it entirely. God’s permission to eat meat as a response to human weakness does not necessarily retract vegetarianism as a moral ideal. Moreover, at no time does God indicate that animals exist merely to gratify human desires. In its own way, the Noachide covenant that blood, the life force, must be drained from an animal’s carcass before it is consumed reaffirms the value and sacredness of life. Compared to pagan religions in the ancient world, the Jewish worldview displays an unusual degree of respect for animals. Lastly, although animal sacrifice was part of Jewish religious practices, Christians generally believe that the need for it was forever put to an end by Christ’s sacrifice on the cross. The author of the Letter to the Hebrews represents Jesus as saying that he has abolished sacrificial animal offerings to do God’s will (Heb 10:1–14).

Eschatological or future-oriented arguments for vegetarianism also find support in the Old Testament. Isaiah includes the well-known prophecy that “the wolf shall live with the lamb,” “the leopard shall lie down with the kid, and “the lion shall eat straw like the ox” (Isa 11:6–7). This vision of the “peaceable kingdom,”

as it is often called, refers to God’s promise of a “new heavens and a new earth” free of pain, destruction, and violence (Isa 65:17). Along these lines, contemporary Christian vegetarians often argue that ending violence towards animals is necessary to bring about the Kingdom of God promised in the New Testament. While this Kingdom is sometimes interpreted as a state of affairs that will come about by divine intervention alone, most contemporary scholars understand it as an already-initiated process in which humans are full and active participants (Webb 2001). The claim is thus that man’s obligation to live in anticipation of the Kingdom requires foregoing meat so far as possible.

Asceticism

Many contemporary secular vegetarians are motivated primarily by a concern for personal health, and some Christian vegetarians have a similar focus. The thought is that since humans’ bodies are gifts from God, they are obligated to take care of their health. Given the deleterious physical effects of meat eating, at least when consumed in large quantities, vegetarianism is seen as an acknowledgment that bodies are “temples of the Holy Spirit within us” (1 Cor 6:19). Biblical precedent for a health-based case for vegetarianism also appears in the Book of Daniel. Daniel and three others refuse King Nebuchadnezzar’s rations of food and wine – consuming only “vegetables to eat and water to drink” – and emerge appearing “better and fatter” than those who had been eating the royal fare (Dan 1:8–16). Daniel’s intent, however, was to avoid ritual defilement, and so like health considerations in general, this story supports restricted meat consumption more than unconditional vegetarianism.

Historically, a more common point is the conviction that meat eating leads to vice. Gluttony is of course one of Christianity’s so-called seven deadly sins, and gluttony and meat eating have often been linked. Ironically, the association between the two may lie behind the Gospels’ description of Jesus as a “glutton and a drunkard” (Mt 11:19; Lk 7:34). The comment may be

intended to draw a polemical contrast between Jesus and John the Baptist, who practiced a more ascetic lifestyle, or it might merely reflect Jesus' willingness to share meals with the righteous and sinners alike. In any event, Christians have often thought that consuming flesh would fuel various sinful habits and desires, including alcoholism, sexual urges, anger, aggression, and other base instincts. This is partly why Rev. William Cowherd, who in 1809 founded the English Bible Christian church, required church members to sign a pledge forswearing both meat and alcohol.

The earliest Christian vegetarians, however, practiced vegetarianism for reasons that were more directly spiritual. Their asceticism resulted from the belief that meat eating is a luxurious indulgence that interferes with spiritual communion with God. The self-denial involved in eating only simple plant foods helps orient one's thoughts away from materialistic, earthly concerns and helps focus attention on the divine. Such was the main rationale of the early Desert Fathers and the monastic vegetarians commonly found in eastern Christianity (Grumett and Muers 2010).

Vegetarianism as a spiritual discipline is quite different than the religious interests that motivate Paul's discussions of meat eating in the New Testament. Paul's overriding interest is to preserve harmony in early church communities and to win new converts; there is no indication that he thought meat eating in and of itself is spiritually significant. What matters for Paul are the social circumstances and spiritual attitudes surrounding flesh consumption. He cautions against eating meat offered to idols that could become a "stumbling block" to those who are "weak" (1 Cor 8:9; Rom 14:21). The point is not to denigrate vegetarians but to protect those who are weak in their faith from sliding back into paganism. "If food is a cause of their falling, I will never eat meat, so that I may not cause one of them to fall" (1 Cor 8:13). He directs both those who eat meat and those who abstain from it from passing judgment on each other (Rom 14:2; Col 2:6). But absent its effects on others, "If I partake with thankfulness, why should I be denounced because of that for which

I give thanks?" (1 Cor 10:30–31) Paul also characterizes abstinence from food as the "teachings of demons," since everything created by God is good and as long as it is received with thanksgiving, "nothing is to be rejected" (1 Tim 4:1–4).

Jesus and Vegetarianism

Naturally, Christian ethicists also invoke Jesus to make the case for vegetarianism. One tactic is to cite frequent references to animals in Jesus' teaching, such as the common characterization of his followers as sheep, or the analogy between fish and converts to his mission. A more ambitious approach is to argue that Jesus himself was a vegetarian (Akers 2000; Vaclavik 1989). The noncanonical Gospel of the Ebionites made this claim, according to Epiphanius, and Eusebius recorded that James, the brother of Jesus, was a vegetarian.

Contemporary scholars generally reject the suggestion that Jesus was a vegetarian, however. The bulk of the historical evidence points in the opposite direction, although the point is clouded by the fact that Jews of Jesus' time tended to draw a stark moral distinction between fish and land mammals. Jesus is depicted as consuming fish after his resurrection (Lk 24:42) and as giving fish to others (Mt 14:19–21). As a peasant Jew, it is doubtful that he ate meat other than fish regularly, but nothing in the Gospels suggests that he avoided eating animal flesh as a matter of principle. Had he done so, it seems likely that the Gospel writers would have found it worth noting. The Gospels disagree as to whether the last supper occurred as the Passover meal; if so, lamb was presumably served. Mark quotes Jesus as declaring all foods clean (Mk 7:19), a point affirmed by Paul (Rom 14:14).

A more promising strategy is to maintain that although he may not have advocated or practiced it himself, vegetarianism is a cogent extension of Jesus' emphasis on compassion and love. The Beatitudes, often taken to reflect the heart of Jesus' moral message, emphasize generosity towards the poor and meek (Mt 5:3–12; Lk 6:20–22). Since animals too are weak and

vulnerable in relation to humans, true Christian ethics requires regarding animals as appropriate recipients of mercy and care, or so many have argued. Granted, in several places Jesus sharply contrasts the value of human life with that of animals (Mt 6:26, 12:12; Lk 12:7, 24). But he also was a consistent servant to those most in need. He healed the sick, kept company with lepers and prostitutes, and washed the feet of his own disciples. Also, loving your neighbor as yourself is one of two great commandments Jesus uses to sum the content of the moral law (Mt 22:39). Arguably, this reference to “neighbors” should be understood inclusively, as properly encompassing both humans and nonhumans alike, even if Jesus himself would not have understood it this way (Miller 2011).

Along these lines, numerous Christian thinkers have defended vegetarianism out of respect for animals. Prohibitions on cruelty to animals have always been part of the Christian tradition. Various biblical passages indicate a human duty to relieve animal suffering (Prov 10:12; Exodus 23:5, Deut 22:4), and others command not subjecting animals to harsh treatment (Exodus 20:10, Deut 22:10; 25:4). Albert Schweitzer generalizes the point, describing “the ethic of reverence for life” as the “ethic of Jesus brought to philosophical expression” (Schweitzer 1999, p. 149). However, since Schweitzer’s argument relies on an assumption from Schopenhauer’s metaphysics – namely, the idea that all living creatures have a deep-seated “will-to-live” – its impact on other Christians has been limited. Karl Barth is another prominent example. He characterizes killing animals as a deeply reverential act of repentance. Given its destructiveness and capacity for inhumanity, it is permissible only as an expression of praise. Barth’s case also has an eschatological thrust. He writes that vegetarianism is “a wanton anticipation of the new aeon for which we may hope” (Barth 1961, pp. 255–256).

The most prolific recent defender of Christian animal-based arguments for vegetarianism is Andrew Linzey. In early works, Linzey develops a case for animal rights on religious grounds – “theos-rights,” as he called them – in a way

intended to distance his position from secular animal rights arguments made by Peter Singer, Tom Regan, and other philosophers in the 1970s and 1980s. For Singer, what matters is that animals have sentience (Singer 1983); for Regan, it is the fact that animals are “subjects of a life” (Regan 1985). Linzey’s view, by contrast, is that animals have rights only indirectly, as a result of “God’s rights in his creation.” God’s creatures have value not from “any faculty or capacity, but in the will of God, which may be deduced from the givenness of spirit-filled individuals” (Linzey 1987, p. 76). Later works feature a different strategy. Seeking to turn traditional theological defenses of meat eating on their heads, Linzey argues that the fact that animals lack souls hardly sanctions eating them. Since they have no chance at an afterlife, their time on earth is especially precious, which means that man is responsible for protecting them (Linzey 2009). Linzey grants that humans and animals differ in moral status but denies that this justifies meat-intensive eating habits. Throughout his career, Linzey has been a gradualist, calling not for an end to meat consumption altogether, but for drastically curtailing the use of animals for food and experimental purposes.

Environmental Concerns

Christian principles also support a different case for vegetarianism. In ways that were not true a hundred years ago, meat production in much of the world today has very harmful environmental and human costs. A large share of the world’s grain harvest goes to feeding livestock, grain that could be used much more efficiently to alleviate hunger in many parts of the world. Animal farming also contributes more to global greenhouse gas production than transportation and produces vast amounts of animal waste and pollutants. Raising billions and billions of animals for food places a tremendous burden on the world’s water and land resources; millions of acres of tropical forest have been cleared over the past couple of decades to make room for cattle grazing. Given that populations in emerging countries like China

and India increasingly emulate Western dietary preferences, adverse environmental effects of meat eating will continue to escalate (Wirzba 2011). Since these effects will fall disproportionately on the world's poorest and most vulnerable, many recent authors stress that meat consumption is incompatible with the Gospel message of compassion, stewardship, and love for neighbor. For example, John Barclay contends that Paul's pragmatic contextualism implies vegetarianism as a new Christian imperative. "Our consumption of meat could literally cause the death of others, and it is impossible to square this with the Christian duty of love towards all those for whom Christ died" (Barclay 2010, p. 593).

A similar but more politically tinged version of this argument also has been made. Scholars often note that Jesus' meal-time inclusiveness – his practice of "open commensality" – was not merely a display of good hospitality. In its social and historical context, it also served a radical and subversive function. Jesus' outreach to clean and unclean alike, to both social outcasts and power brokers, was a strike against prevailing social boundaries and divisions. The Roman imperial economy had disastrous effects on peasant farmers and laborers, and the Romans were assisted by elite Jews who collaborated with them. Jesus' outburst in the Temple was not merely a reaction to perceived religious desecration, but a symbolic demonstration against Roman and Jewish power structures. It was a decidedly political act. Early Christians commemorated Jesus and his message not by eating meat, but by the communal breaking and sharing of bread, one of the humblest of all foods (Northcutt 2008). Just as Jesus used meals to protest oppressive powers of his age, by boycotting meat, contemporary Christians can likewise use their eating practices to resist some of the most destructive and degrading manifestations of present-day economic industrialization.

Summary

Despite being a minority view within the tradition, growing numbers of Christians see

vegetarianism as an important, faith-based response to the contemporary world. While the Biblical evidence in favor of vegetarianism is mixed, most recent authors point out that the contemporary context is importantly different from that when the Bible was written. People today, especially in the affluent West, have many healthy nonmeat choices available to them, and the industrialization of modern farming has made the production of meat more objectionable than it was 2000 years ago. One sign of a change in perspective can be seen in a recent statement by Pope Benedict. He writes, "the natural environment is more than raw material to be manipulated at our pleasure; it is a wondrous work of the Creator containing a 'grammar' which sets forth ends and criteria for its wise use, not its reckless exploitation" (Benedict XVI 2009). Increased environmental pressures brought about by overuse of the earth's natural resources, chronic food shortages in many parts of the world, and the massive animal suffering involved in industrialized meat production are likely to keep the topic of vegetarianism on the agenda of Christian ethics for a long time.

Cross-References

- Christianity and Food
- Vegetarianism

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Christian Mysticism and Food

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Synonyms

Areopagite texts; Asceticism; Byzantine Hesychasm; Christianity; Medieval Mysticism; Mysticism; Non-anthropocentric ecological philosophy; St. Nicholaos Cabasilas; St. Symeon the New Theologian

Introduction

Food in the form of items with nutrients essential for survival (whether cooked or uncooked) is of key importance for the distinct Christian theological and philosophical perspective called

“Christian Mysticism”: it acquires a new spiritual and transcendent dimension. After an attempt to define and chart the rather loosely connected threads in philosophical and theological thought that can be grouped within this distinct form of mysticism, attention will be directed to the significance of food and drink for the achievement of the goals of Christian Mysticism and thus, the *soteriological* transformation of human beings. The discussion will close with an evaluation of the contribution of Christian Mysticism in the context of contemporary debates in the Philosophy of Food.

The Key Characteristics of the Christian Mystical Approach

The mystical direction or school of thought starts from the very early stages in the development of Christian Philosophy and Theology. It is widely accepted that the Christian Church was founded in a mystical filling with the Holy Spirit, with the Apostles forming the first community of Christian mystics (Fanning 2001; McGinn 1991). Christian Mysticism, in the form of both *mystike theologia* (mystical theology) and *praktike filosofia* (practical philosophy) is not (only) a way of seeing reality but also a way of life. According to Underhill: “The essence of mysticism being not a doctrine but a way of life, its interests require groups of persons who put its principles into effect” (Underhill 1932). As such, one can see this way of life in the very early Christian communities, who saw in the New Testament and in particular the Gospel according to St John the Evangelist and the Epistles of St Paul the kernel of their esoteric canon of spiritual and intellectual development. Early Patristic texts from key mystics (St Gregory of Nyssa, St Augustine, the Areopagetic texts, St Maximus the Confessor, and others) soon became (in both the Medieval West and the Byzantine East) the set canon textbooks for initiation in the mystical Christian philosophical and theological tradition. The first five centuries provided the basic formative context for the later development of Christian mysticism and formed the basic context of

the Christian mystical tradition (King 2003). This tradition became continuously enriched with new Mystical approaches, core texts, and methodologies in the first millennium, culminating in the famous proliferation of Mysticism in middle and late Medieval and Byzantine Philosophy and Theology (ca. 1000–1500) and early Renaissance. Putting aside the significant differences between the Western Medieval and the Eastern Byzantine mystical approaches, attention now will be directed to the depiction of some common themes and trends for the period till the sixteenth century in the form of the following key characteristics:

1. It cannot be described in terms of subjectivism versus objectivism (both in terms of epistemology and ethics).
2. The mystical experience is veridical (i.e., one can say when one has it), but, for its most important and key forms, it does not obey the laws of traditional logic and reasoning (there is, presumably, a new epistemology involved).
3. Body and soul are not divided, but they are unified in the attempt to achieve the mystical union of God and creation through illumination and deification.
4. According to many of its most profound and dogmatically conscious forms, Christian Mysticism cannot accommodate intellectualism nor a conceptualism (traditionally conceived) because all reasoning, imagination, and memory of sensory images are to be avoided; the organ of chief importance for the mystic is the heart and not the mind. It is important to note in relation to this feature that true Christian mysticism should not be transformed into some kind of sensualism or emotionalism, since emotions and senses of the body are also to be avoided in the attempt to unite with the triune God. Christian mysticism also should be distinguished from philosophical esotericism, since the early mystical Fathers tried to distance themselves from the Neoplatonist and Gnostic forms of philosophical esotericism of their time.
5. In some of the most important forms of Christian mysticism, the mystical union can be achieved while alive and with the body;

further to this, later Byzantine and hesychastic mystics, such as St. Gregory Palamas (1296–1359) and St. Nicholaos Cabasilas (1319/23–ca. 1391), emphasize that this union is achieved via the divine energies and acts and not the divine essence (the triune God is infinitely more than the sum of His acts and energies).

While acknowledging that Christian mystical ideas were further developed and advanced in the subsequent five centuries, most of the important key characteristics were developed already by the late fifteenth century. So, it will be sufficient to take the above key characteristics as forming an acceptable set of what can be termed as “the Christian Mystical Tradition.”

Food in the Christian Mystical Perspective

Food is treated as of key importance in the New Testament: Jesus abstained from food for 40 days, before He starts His role as a teacher (*Matthew* 4:2). He also responded to His disciples that “My food is to do the will of Him who sent me and to accomplish His work” when asked if he was hungry and wanted to eat (*John* 4:34). The early Christian mystics took it for granted that when one considers food, one has to have in mind that it was because of the wrong food consumption that Eve and Adam were expelled from Paradise (*Genesis*, Chap. 3). This theme was repeated in the mystical writings of many early Fathers and became a standard reference in Medieval and Byzantine mystical literature. Food in this way acquired a mystical significance and meaning that was ontologically related not only to the Old Adam (Adam after expulsion from Paradise) but also to the New Adam (i.e., the ontologically transformed human after deification or illumination) that the mystics tried to exemplify with their illumined life. But how is this conceptualization of food related to the Christian mystical theology and philosophy and the role of the New Adam in creation?

From the above discussion of the main characteristics of Christian Mysticism, one can see

how impossible for a mystic is to be *anthropo-centric* (i.e., to regard *anthropos* or human as the focal point of all meaning and value) when creation becomes the focal point of any investigation. Also, one can see how alien should the mystical way of life be to established rules of human reasoning, if it is to achieve the desired goal of union with the triune God. It is also evident that humans can (and should) achieve a new awareness of their role in creation and of how they should behave towards other creatures, during the *ecstatic rapture* that the mystical way of life entails. This issue can become clearer if we look at characteristic examples of Christian Mysticism: the areopagetic texts (which were texts attributed to St Dionysius the Areopagite, the pupil of St Paul, probably written around the sixteenth century), St. Symeon the New Theologian (949–1022), and St Nicholaos Cabasilas (ca. 1319–1392).

The areopagetic text *Epistle to Titus* makes some rather common place by its time of creation remarks about the mystical significance of food, in solid and liquid form. Food in solid form is the mystical knowledge achieved with the help of Divine Wisdom through the senses (in the form of a stable, unifying, and indivisible knowledge that provides solid nourishment for the spirit), and food in liquid form (cited forms: dew, milk, water, wine and honey) is the actual divinations or illuminations that make deification possible and effected: water gains the mystical power of eternal life, wine a mystical revival and strength, and honey provides purification and preservation. And through them Divine Wisdom produces a veritable good cheer that both nourishes and perfects (*Epistle to Titus*, *Hierarch*, Sect. IV; Dionysius the Areopagite, 1897). Creation and food produced and acquired through it thus gains a mystical role in salvation. This theme is further elucidated and enhanced in the works of the later Byzantine Saints: St Symeon the New Theologian and St Nicholaos Cabasilas.

Actually, St. Symeon the New Theologian emphasizes that any kind of animosity or improper attitude towards creation is the result of Adam's fall from heaven and comes as a result from it. Mystical union with the triune God will

not only return man to the mode of existence he had before the Fall, but it will return in him the wonder and full respect with which he needs to regard God's Creation (*Hymn* 32). He further on claims that the use of material goods and creation for man's survival is not evil but it should be carried out with no "desire of the flesh," no "desire of the eyes," and no "vain thoughts" (*Catechetical Orations*, 5). This further supports St. Symeon's conviction that if a man is to be united with God mystically, he must do so with a complete transformation of his desires, arrived at through the ecstatic love towards the Creator and the consequent abstention of any thought and behavior that is not directed by this ecstatic love towards the Creator. Man thus becomes not only a guardian of Creation through asceticism but considers it as an invaluable means for his salvation; this forces upon him a transformation of his desires and the way he looks at Creation (Krivocheine 1986; Kesselopoulos, 2001).

This mystical perspective has many advantages over the traditional philosophical and theological contemporary approaches to the problem of feasting in a world that requires fasting:

First, it is not dividing the world into the realm of the subjective and the realm of the objective, or (put in other terms) between the body and the mind, the material and the immaterial. As indicated above, both matter (body) and spirit are united in the mystical union in a new form of hypostatic existence.

Second, it allows for a new non-anthropocentric epistemology and ethics: man does not exist for himself, but *for God*, and Creation is the place which God created for man's salvation. In his ecstatic love towards God, man cannot regard the world for his own means and interests but through his ecstatic love towards God (Athanasopoulos, 1999).

Even though these advantages are a real improvement on the philosophical and theological impasse in contemporary debates, how is the demand for sanctification of nature to be met with this perspective in mind?

Vegetarians and vegans here may come back to indicate that this mystical standpoint may be interpreted as indicating that man has the role of

a simple attendant or housekeeper and thus Nature may be regarded as part of the household items such a housekeeper attends to, with no further responsibility or value to him. But St. Nicholaos Cabasilas claims that it is here that man's role in the Divine Eucharist as returning Creation to its rightful place can be most clearly envisaged.

Man, in the process of the Divine Liturgy, and while performing the sacrament of Eucharist, offers to God what is made by God (the priest announces in the Eucharist while offering the Holy Gifts that he offers them as of God's to God: *ta sa ek ton son soi prosteromen*). Cabasilas stresses that the part of Creation that is offered in the altar is not man's but God's. By offering to God what is God's, man enters into a mystical union with the triune God and becomes united with Him through grace, placing Creation in the proper *soteriological* perspective. By re-consecrating nature and creation within the process of the Divine Eucharist, man finds his true role in Creation, becomes light himself, and mystically unites with God, radiating light back into Creation. Man does not exist to use nature and creatures but to consecrate them and refer them back to their rightful Owner and Creator. And man, according to Cabasilas, can only do this once he lives through the mystic life of the consecrating Church and its mysteries. It is only through the mystical realization of man's failure to be a true son and making of God that man can realize and achieve the mystical union with God (Cabasilas 1960).

Through the mysteries of the Church and most importantly the Divine Eucharist, where bread and wine are offered and become the Blood and Body of Christ, man becomes holy again, and with the return to his holiness, he can further sanctify nature and offer it to God. Cabasilas here is in full agreement of the Orthodox Mystics before him, in claiming that the "naming" of Creation by man during Creation (*Genesis*) is part of this re-sanctification of Nature. Man was created to sanctify Nature and not destroy it according to the Orthodox Mystics.

It is important to emphasize that what is offered in the Eucharist is not owned by man.

Man is utterly naked, defenseless, with no justification, and without pretense, when facing his Creator. The mystery of the all powerful grace and mercy, thus, becomes the true *soteriological* and *sanctifying* force.

Man performs a *reasonable* sacrifice of his will over things and himself to gain the object of his ecstatic love, without losing his personal and hypostatic characteristics, so that he can find what he ecstatically loves and desires. Trying to explain the words "reasonable sacrifice" in the Divine Liturgy, Cabasilas claims that the sacrifice is *reasonable* because it is *mystical*: the priest, by pronouncing the appropriate words, does all that is necessary to make the offered part of Creation holy again and suitable for sacrifice to God, bringing man back into his true role in Creation, in accordance with the *Genesis* book in the Old Testament (Cabasilas 1960).

According to Cabasilas, "the sacrifice is truly an act and a reality," and even though the priest only says specific names and words, these become significant and mean far more than perceived by human ears, through the mystery of divine grace, in the same way that in the *Genesis*, man by naming nature he is not just saying names and words empty of mystical and theological significance. It is important to emphasize that this *use of names and words* lies within the mystical tradition of the Areopagetic texts. It is through the names of God that we can gain a mystical awareness of His *apophatic* and *cataphatic* realization and, thus, be led into a mystical union with Him. In the same way, it is through the *naming* process and, via this process, the re-sanctification of Nature, that we can achieve the mystical union of God with creation. Man thus, becomes *synergos* (i.e., collaborator) in salvation with God, gaining himself a new *soteriological* perspective.

Cabasilas in a text, where he explains the difference between the new and the old Adam (man after and before the Fall), put forward the following ideas: the true bread (*o alethes artos*) is Jesus Christ, who, in the same way that the usual bread strengthens man's heart and gives him physical strength, came down and brought a new form of life and strength. It is Him (Jesus) that one

should strive to incorporate within constantly, to be preserved in the constant and continuous time of hunger (*limon*) that one lives in while on this earth (*Patrologia Graeca*, vol. 150).

The above remarks are relevant not only for the development of Christian Mysticism in Byzantine Civilization but are equally valid for Medieval Europe. Examples are abundant in the writings of Johannes Scotus Erigena (810–877), Bernard of Clairvaux (1090–1153), Richard of St Victor (ca. 1120–1173), works related to Francis of Assisi (1182–1226), Bonaventura (1221–1274), the Cistercians and the Beguines, Meister Eckhart (ca. 1260–1327/8), and others (Fanning, 2001; King, 2003; Walker Bynum 1985).

How the Christian Mystical Approach Relates to the Contemporary Philosophy of Food

In current ethical discussions about the consumption of food, there is a growing tendency to provide arguments in terms of the rights and duties of the people and beings involved, either recognizing in them intrinsic qualities, which can justify the existence of human duties towards them and their rights for respect by humans, or by linking them to the rights and duties of others, who have some interest in the consumed animals' fate or well-being. So, for example, in the case of some philosophical arguments put forward by vegetarians and/or vegans, animals should not be consumed and in general all suffering to them should be restricted, if not avoided at all costs, on the basis of their inherent moral qualities and their well-being. This places ethical restrictions on what one can eat and drink and, in some way, forces a fast upon humans on moral considerations. Thus, in general, the argument for an abstention from all meat and dairy products is that one should not eat meat nor drink milk, because either this action makes animals feel pain/discomfort or because such an action reduces the well-being of other people in the developing world (since the resources used to feed animals can be used to feed starving people).

In both cases there is some sort of a contract involved (between humans and the animals or between humans in more and humans in less-developed countries) and through the consumption of specific foods and drinks one breaks the moral rules of this contract.

Some philosophers (e.g., Peter Singer and Tom Regan) actually go to the point of making parallelisms between the “speciesism” that existed between people of different colors and races in the recent past and the *biological* now *speciesism* that exists between humans and the rest of the animal kingdom (cf. Singer 1975; Regan and Singer 1976). They make the claim that the same moral rules that bind the different human races and form a contract that is sanctioned by international legal documents and agreements (such as the United Nations Declaration of Human Rights) bind humans as well to the rest of the animal kingdom.

This approach has influenced a large part of the relevant current bibliography on the ethics of food and the 1970s texts discussing the “speciesism” approach are now standard textbooks in Environmental Ethics and any set bibliographies on the Philosophy of Food and Drink.

It has been pointed out however, from the early 1980s, that the Singer-Regan approach cannot offer convincing arguments in its support. It is not only that the contract theory that it alludes to is fallaciously entertained (since there is a need for a further proof that animals – or other, even future, people concerned – can take part in such a contract and that they can both represent and promote their interests through this contract), it is also that for many adherents of vegetarianism or veganism, the contract theory (or any theory based on duties and rights) is not a good way to put forward their viewpoint and arguments for the intrinsic value and sacredness of animals, plants, and the other beings that exist in the world but are not created nor produced by humans. They make the point that even if a human being was the last person on this earth with the possibility of destroying earth and all the beings on it after his/her death, it would be morally wrong to do so, not on any contracts (which would not hold

after death in any case), but on the grounds that nature and everything nonhuman made is intrinsically valuable with a value that is independent of any human consideration, making them *sacred*. They also point out that resorting to anthropocentric values and moral qualities (e.g., moral virtues or elaborate rule and/or contract theories) would not satisfy their requirements, since they claim that nonhuman made beings cannot be examined in human terms and human categories of thought.

Philosophical discussions about the consumption and production of food thus need a fresh air that will provide new sets of arguments, quite distinct from traditional conceptions about human rationality and its modes of operation. As indicated above, Christian mysticism can provide an alternative which will allow for the *re-sanctification* of nature that is necessary to get contemporary philosophers and theologians out of their philosophical and theological impasse.

Summary

Feasting and fasting, as primarily concerned with the way humans grow and sustain themselves, should not be treated as unimportant nor as not directly concerned with the way one can gain self-knowledge and self-understanding and knowledge and understanding about the external world and Man's relation with God. Mystical metaphysics and ontology here are interconnected with Mystical anthropology and ethics. Within Christian Mysticism, asceticism exists not for the mortification of flesh but for the reorientation of our intellectual and volitional powers. Food and drink thus become means of spiritual nourishment: the priest in the mystery of the Divine Eucharist offers parts of creation to God in the form of a "reasonable" sacrifice, but neither the gifts offered nor the words used belong to the priest, who is with no pretense and no justification. Creation becomes thus autonomous and can only have a separate existence from God, when it *lacks ecstatic love*, the true criterion of the mystical way. Creation and man, in a world

void of ecstatic love, thus, become both alienated and alienating. Both feasting and fasting should become one and have as their goal the mystical transformation of the human will, so that it can unite and reside in God's Will.

Cross-References

- ▶ [Christian Stewardship in Agriculture](#)
- ▶ [Christianity and Food](#)
- ▶ [Environmental Ethics](#)
- ▶ [Food Rituals](#)
- ▶ [Food Not Bombs](#)
- ▶ [Food's Purposes](#)
- ▶ [Food-Body Relationship](#)
- ▶ [Peter Singer and Food](#)
- ▶ [Right to Food in International Law](#)
- ▶ [Systemic Ethics to Support Wellbeing](#)
- ▶ [Vegetarianism](#)
- ▶ [Virtue Theory, Food, and Agriculture](#)
- ▶ [You Are What You Eat](#)

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Christian Perspectives on Food and Agricultural Ethics

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Synonyms

Christian dietary habits; Christian farming; Christian religious agrarianism; Christian sustainable agriculture; History of Christian agriculture

Introduction

There is no normative Christian view on any subject, let alone one as comprehensive as perspectives on food and agricultural ethics. The subject is further complicated because there are over two billion global Christians. Rather, it is more accurate to speak of “Christianities,” given the diverse cultural, historical, geographic, and institutional histories of Christianity. As a result of this diversity, this entry can but make reference to key guiding ideas, debates, theologians, food activists, farmers, and lived practices in regard to various food and agricultural ethics that have manifested throughout Christianity’s diverse history, up to its even more diverse present, with a special focus given to Western Christianity.

Christianity arose within a cultural and geographical context that was shaped by Hellenism, the Roman Empire, various mystery cults, and diverse Israelite cultural and political identities. To understand the development of Christian

views of agriculture and food, it is important to have a cursory understanding of dominant themes about nature, food, and agriculture that were present in these other groups, as their politics, cultural views, and engaged practices influence early, and even some contemporary, Christian perspectives on food and agriculture (Glacken 1967; Feeley-Harnik 1994).

Cultural Milieu of Early Christianity

Greek Hellenism

The ancient Greeks had a plethora of philosophies and deities and were a mixture of early cities surrounded by agricultural fields. A famous Socratic dialogue from Plato suggests that an antipathy toward the countryside, and nature broadly, existed in ancient Greece. In his exchange with Phaedrus, Socrates mentions that knowledge is to be found in the city, and not in the bucolic country. This Socratic chain of thought mixed with Plato’s realm of pure ideal forms, leading some scholars to postulate that in Greek society there appeared certain dualisms, or what ecofeminists call a logic of domination, where one half of the dualism was privileged over the other: city over country and ideal forms/ideas over the world of flesh/nature. These ideas were married with an Aristotelian view of the cosmos that assumed a great-chain-of-being, with the observable universe based on the four elements: earth, air, fire, and water. Taken together, it is postulated that this view of humanity and nature generated an incipient anthropocentrism that influences Paul’s letters (Romans 1:24–25 and Philippians 3:21, but see also Psalm 8 and Psalm 115 for evidence that such cultural views predate Paul) and thus early Christian understandings of nature, especially in the divide between a fallen, corporeal body and earth and a transcendent soul that is bound for heaven or hell for eternity. It should be noted, however, that Hellenistic Greeks also actively attempted to cultivate a working knowledge of their landscapes, seen in the plant geography of Theophrastus’ *Enquiry into Plants* and in advancements they made in plant and animal

breeding. Altogether, though, “there are substantial reasons for believing the roots of modern attitudes toward nature are to be found in the Hellenistic age” (Glacken 1967), and these roots are based upon city/country and human-nature distinctions, distinctions that largely carry over to Christianity and Christian agricultural ethics, past and present.

Rome

Rome was built upon Greek Hellenism, and as Rome grew in size, so did its ecofootprint, as the Empire was built upon grids of roads and irrigated canals. Some posit that the Empire overexploited its soils, which is one of the main reasons it eventually collapsed. The Empire aggressively deforested the lands it conquered as it needed timber for building, and its population also cleared land to farm (Perlin 1989). Both Hesiod and Virgil, along with Seneca and Ovid, write longingly of a bucolic nature that brings humans closer to the gods through agricultural work. However, for the most part, these and other writings about agriculture in the Roman era recognize that the soils have been depleted and that the golden age of Rome was a more fecund, less toilsome time, when citizens were also physically and morally superior than those in the latter Empire. Besides these views of a golden age, there also existed in Rome a cyclical calendar based upon various feasts and worship of various agricultural deities, some of which were related to mystery cults.

Israelites

Besides the dualisms found in Greek thought that manifest in Paul’s letters and that shape centuries of Christian thought about human-nature-Divine relations, the other biggest contributor to historical as well as contemporary Christian views of agriculture and food comes from the Israelites. Jews at the time of the historical Jesus were diverse in political and cultural views, although they were still largely united under the Second Temple and its ritual practices based upon the agricultural calendar. Many scholars have written about Jewish agriculture and food, using archaeological and historical-critical methods to better

understand the ritual and agricultural practices of this era of Israelite/Jewish history, and these writings expertly capture some of this diversity. Given space constraints, a cursory overview of proto-Jewish farming, food practices, and foodways is covered here.

The creation story found in the Hebrew Bible’s Genesis 2:7 states that the first human, Adam, comes from the soil. This is the translation of the Hebrew term, *adama(h)*, out of which Yahweh/YHWH/God forms humans. This suggests the ancient Israelites had a nuanced understanding of their local environment and that as an agrarian and farming people, their conception of self was intimately tied up with their relationship with their farming lands and grazing herds (Davis 2009). This does not mean they practiced what today may be called sustainable agriculture, given their soil loss and exploitation of their ecosystems, but it does mean that food and agricultural practices and ethics figured prominently in their identity as a people (Hillel 2007).

Some of the agricultural practices mentioned in Torah include a sabbatical year for the soil so it may rest; companion planting; recognition of sacred grains and plants, including the Seven Species (Deuteronomy 8:8); the importance of fruit trees (Proverbs 27:18); and the covenantal gift of good land (Deuteronomy 8:7–10), to name a few. Yet there is also a tension, as seen in the story of Cain and Abel, where Yahweh chooses Abel’s offering of part of his flock, which some interpret at the benefits of pastoralism. However, out of jealousy, Cain kills Abel, and his punishment is to toil in the fields as an agriculturalist (Genesis 4:2–16), where the soil will not offer its strength or nourishment to Cain and his descendants. Some point to this passage as being an indictment against practicing agriculture, although as with any sacred text, and including especially the Hebrew Bible (Christian Old Testament) and the New Testament, there are multiple, and at times competing, interpretations of this and many other agriculture-related passages. For example, there is no one approach to interpreting, and thus basing contemporary farming practices on, the command to “till the garden and keep it” (Genesis 2:15).

Other agrarian and food-centered practices of the Israelites informed early Christianity. Mostly this was by shaping what Christianity was not, largely because the early Christian communities had to differentiate themselves to gain adherents and to open up the community to non-Jews (see especially Galatians 3:28). This is seen, for example, in what became known as the Final Supper, at which point Christian theologians argue/interpret that Jesus moved beyond the in-group Israelite-only Passover Seder and made the meal universal and inclusive for all via what becomes the practice of communion/Holy Eucharist. Nonetheless, these other Israelite food practices include a variety of blessings (*brachot*) over wine, water, meat, cheese, and other food items. Customary traditions also formed around saying blessings after food was consumed (*bensching*). The Israelites of Jesus's time also had a sophisticated ritualized calendar centered upon the power of the Aaronic priesthood in the Second Temple and that was based on an agricultural calendar. Some of the major Jewish holidays and Temple rituals centered upon food, most especially those of Passover (*Pesach*), the Feast of Weeks (*Shavuot*), and the Festival of Booths (*Sukkot*). Of final mention is the tripartite Torah law that required Jews to keep kosher (*kashrut*), with interpretation of these laws building over the centuries in the Talmud. Taken together, the agrarian cultural milieu of Judaism, coupled with the very clear Jewish connection with food and agriculture in both dietary practices and ritual requirements and calendar, combined to make food a central element of Christianity.

Early Christianity and Food

Early forms of Christianity centered upon the life and teachings of Jesus and then especially the apostolic work of Jesus's original followers. After his death, the teachings and life of Jesus became codified after a few centuries in the New Testament. Because the early Christians were straddling the iterative worlds of Judaism and Roman paganism, they had to communicate Jesus's universal atonement through these

mediums. One way of communicating this message was through food, food rituals, and diet (Jung 2006). Parables about wineskins (Luke 5:36–39), putting away anxious thoughts about food and drink (Matthew 6:25), and the metaphor of wine meaning being inspired by God (Jeremiah 23:9) all developed and were written down. There are also passages in the New Testament where Jesus and his disciples challenge Jewish food habits by interacting with and feeding non-Jews, including miracles of feeding the masses (Matthew 15:32–39 and Mark 8:1–9) and eating with Pharisees without washing hands (Luke 11:37–41).

As with the Hebrew Bible/Old Testament, the threat of a disciplinary famine and punishment of failed crops looms large for not following ritual and other religious protocol. This clearly suggests that some form of recognition existed about the fragility of agricultural production, although in an era without meteorology, the understanding for crop failures was related to concepts of sin and lack of fidelity to covenants.

Early Christian communities struggled with oppression under Roman rule until the Edict of Milan and conversion of Constantine. Once Christianity was made, the religion of empire, its power, and influence grew exponentially. One way it spread was through food and food customs, which coalesced around “four underlying themes: commensality, fasting, the sacrament, and bodily health” (Eden 2011).

While modern-day connections between soil health and bodily health motivate many who engage in sustainable agriculture and who discuss agricultural ethics, it would be a misrepresentation and faulty reinterpretation of the majority of Christian tradition(s) to see a clear concern for soil and livestock/animal health as being a focus of the myriad and various historical Christian foodways that developed over the centuries. The ongoing ecological Reformation of the world's religions, including Christianity, is a product of a post-Darwinian, post-ecological world of the last 150 years. It is also one which is slowly gaining in followers after the 1962 publication of *Silent Spring* and the 1967 publication of Lynn White, Jr.'s

“The Historic Roots of our Ecologic Crisis,” where Western Christianity was blamed as the culprit for ecological decline. The modern, industrialized world, including the industrialization of commodity agriculture, is very different than that in which major Christian theologians wrote, from Paul to Augustine to Aquinas, to the split between Western and Eastern churches, through the Reformation and era of European colonial expansion. None of the theologians and church leaders during these centuries had the benefit of microscopes and soil science, so knew nothing of soil formation and microbiology. Nor did they have the ability to use satellite imagery to understand how farming practices at various scales, using various chemical-based and irrigation-driven technologies, influence ecosystems, ecosystem processes and services, and the health of various life forms.

While there are examples that can be recovered and reinterpreted using modern-day ecological and sustainable agriculture lenses, such as Saint Francis and his views about nature, the historical reality is that most Christians, including lay, monastic, and elite leaders, operated within a cosmology of sin, fall, temptation, and redemption. Within this theological and cultural milieu, work in transforming the planet for human use (the “dominion over” of Genesis) was seen as the vocation of most Christians. God created *ex nihilo* and on this blank slate gave humans dominion and the power to name the animals and plants. As Christianity spread, pagans and their agricultural calendar and cycles were encountered, but these were replaced by liturgical meals devoid of such traditional feasts. Furthermore, some saints, angels, and even the Virgin Mary became associated with aspects of food cultivation and celebration, but this occurred more at the level of lived religion and was not generally seen as orthodox teaching. Many scholars claim that the anthropocentrism of Christian Europe, coupled with the inherent brittleness of domesticated agriculture, led to the demise of the Middle East’s and Europe’s flora and fauna. They claim that this process was repeated on *terra nullius* in the “New World,” where European seeds, farming

practices, domesticated species, and religious views rapidly changed the cultural and biological landscapes of the Americas (Sale 2006). It is to this legacy of farming practices and teachings about creation that contemporary Christians are responding, with a major avenue being through revisiting, reinterpreting, renewing, and creating afresh new perspectives on food and agricultural ethics.

Contemporary Christian Views on Food and Agriculture

Growing numbers of Christians the world over, from laity to positions of leadership, are revisiting Christian views of agriculture. These views include reevaluating Christian duties and ideals as consumers of food products and also as producers and growers of food products. Agricultural ethics broadly are “concerned with the values and moral issues involved in food production and farming practices” (Haynes 2009). The larger category of ethics, or questions of good/bad, good/evil, and morally obligatory/avoidable actions, as well as issues about duty, virtues, and justice, is also central to religion, while specific ethical issues have been central to Christianity since the time of Jesus. It should come as no surprise then that ethical deliberations about religion and agriculture are emerging in response to the industrialization and globalization of the world’s food supply; such concerns are also being influenced by increasing knowledge about climate change, the relationship between food and physical health, and the increased popularity of alternative food movements. The remainder of this entry investigates some of the varieties of contemporary Christian perspectives on food and agricultural ethics, where these perspectives focus on issues of food and agricultural justice, and sustainable food praxis. This investigation includes highlighting key thinkers, farmers, and emerging theological perspectives about food and agriculture.

Two of the most well-known Christian advocates for sustainable agriculture are the North Americans Wendell Berry and Wes Jackson.

Berry is famous for bridging the gap between the Western, and later, North American, agrarian lineage and the ecological sciences. He uses sustainable farming practices on his farm in Kentucky and his experience as a farmer influences his poetry, essays, and novels. His 1977 classic, *The Unsettling of America: Culture and Agriculture*, is one of the first sustained critiques about the corporate takeover of industrial agriculture and the impact this has had on America's rural farming communities. While his personal faith is not central to his nonfiction work, it repeatedly enters into his poetry, essays, and fiction work, so that his Baptist views readily inform his perspective on agriculture, the American extractive economy, and Christianity at large. Berry is therefore probably the most well-known and most quoted advocate of a modern-day Christian sustainable food and sustainable agricultural ethic, one grounded in agrarianism and thrift, where humans are seen as utterly dependent upon the miracles of seed and soil.

For Berry's theocentric, Biblical view of agricultural ethics, our duties are to generate cultures of place that are embedded within bioregions. These cultures of place should actively work to cultivate the soil through sustainable animal husbandry and sustainable agricultural farming practices. As Berry writes, good farmers "take seriously their duties as stewards of Creation and of their land's inheritors, [and] contribute to the welfare of society in more ways than society usually acknowledges, or even knows. These farmers produce valuable goods, of course; but they also conserve soil, they conserve water, they conserve wildlife, they conserve open space, they conserve scenery" (2009). For Berry these valuable goods are produced within a context of being stewards of Creation, such that Berry's ecological agrarian ideals are thoroughly influenced by his own reading of the Bible and his own life long involvement in Christianity.

Berry has cultivated and produced this Christian view of food and agricultural ethics in dialogue with his contemporary, the plant geneticist Wes Jackson. Jackson and Berry began a mail-based correspondence in the late 1970s, and this correspondence developed into a lifelong

friendship, where the two have explored cultural narratives and views of farming and how these influence farming practices. Jackson is best known for the work he is undertaking at the Land Institute, a research station he began with his wife in Salinas, Kansas, where the Institute is attempting to develop perennial polycultures that mimic the original ecosystem of the Great Plains (Jackson 1985). Like Berry, Jackson is an advocate of sustainable agriculture and is critical of reductive, mechanistic science and its impact upon the Green Revolution. He is also a vocal critic of the industrialization and perceived corporate takeover of modern agriculture. Like Berry, Jackson is also a Protestant, so that his views of agriculture are influenced by his reading of the Bible.

Taken together, Berry's and Jackson's respective work as writers, farmers, and lay theologians/interpreters of scripture, coupled with their popularity in scientific, academic, farming, and Christian communities, has helped create the foundation of contemporary Christian sustainable agricultural ethics. Their influence is seen in other leading Christian farmers and sustainable food advocates, ranging from Joel Salatin of Polyface Farm; to Sister Miriam MacGillis of Genesis Farm (equally influenced by Father Thomas Berry); to the agronomist Gary Fick and his treatise *Food, Farming, and Faith* (2008); to the Christian organic farmer and distinguished fellow at the Leopold Center for Sustainable Agriculture, Fred Kirschenmann (2010). Salatin has become a well-known "crusader," whose articulate criticisms of post-Green Revolution agribusiness and corporate farming have earned him a following. He presents himself as a humble libertarian farmer who lives in rural Virginia and who sees his farming as being inspired by Christian views of stewardship of the environment. His farming practices include free range pasturing of cows, chickens, pigs, and other animals; on-site humane slaughter; rotational grazing; and growing of polycultures, and he is active in training the next generation of farmers by offering on-farm internship positions. MacGillis is inspired by the agricultural insights of Wendell Berry, but more so the Universe Story

and the teachings of Thomas Berry. These sources influenced MacGillis, under sponsorship of her Dominican congregation, to turn their farm into a biodynamic Community Supported Agriculture campus and teaching center where organic farming methods have been practiced since 1980. This pioneering work has resulted in MacGillis becoming recognized as a leading voice in Catholicism and especially among Catholic women religious, advocating for Christian agricultural ethics that support sustainable practices. Gary Fick is an agronomist at Cornell University, whose 2008 book marries his Protestant reading of the Bible with years of researching sustainable agriculture issues, leading him to write about 15 essentials of agriculture based on Biblical insights. This list ranges from respecting and protecting soil to being concerned for farm animal welfare, to maintaining soil fertility, to providing a living wage for farmers, to recognizing that agriculture has profound religious and ethical components, including the assurance that each person is fed so they can celebrate life and fulfill God's plan for them. Lastly, Fred Kirschenmann uses organic farming methods to farm his family's North Dakota farm and is a leading activist-scholar researching and writing about sustainable farming within a North American University context. Kirschenmann has developed an incarnational understanding of God/Christ, where he believes that God/Christ is present in all beings, and in all on-farm relationships, that are found on farms: from animals eating, mating, procreating, and dying to plants seeding and growing, to the harvesting and eating of farm products. For Kirschenmann, this incarnational relationship recognizes the divinity in all relationships on a farm and in farm soils, so that sustainable farming becomes a vocational act that allows a farmer to help tend to the Garden of Eden while serving the tree of life contained therein.

The above Christian sustainable food advocates have been instrumental in developing a modern-day Christian-based agricultural ethic that takes sustainable farming as its central point of view. This ethics contains concern for farm workers, farm land, and natural resources;

advocates for living wages; is concerned with food justice and food access issues; and takes seriously the biblical task of being stewards of God's creation. Many Christians who advocate for sustainable agricultural ethics can be labeled as theocentric, while some might be considered pantheistic, while still others are evangelical and more conservative with their understanding of the Christian God. The stewardship ethic is also spreading into Global Christianity, with African churches becoming involved in permaculture; Latin American churches becoming involved with land issues and peasant agriculture issues; to food activists reinterpreting biblical teachings such as gleaning from the fields, where they are bringing excess crops to food banks and homeless shelters; to Catholic Worker Houses using sustainable farming methods to grow food that is then served to homeless people. In terms of institutional teachings, the United States Conference of Catholic Bishops has made a clear call for the practice of sustainable agriculture, and the Conference links such practice with issues of environmental justice (2003).

Despite this fecund growth in contemporary Christian sustainable agricultural ethics, the above leaders, farms, and movements should not be interpreted to represent the majority of Christian views about contemporary food and agricultural ethics more broadly. Rather, concern about food and agricultural ethics are still relatively low for most global citizens, at least in industrial and post-industrial nations, although the contemporary movements outlined in this entry are gaining in adherents and popularity, and this extends into a variety of Christian demographics. The recent trends suggest that more institutional bodies are beginning to speak about food issues from the contexts of physical health, community health, and/or planetary health and are connecting such concerns to Christian and biblical teachings. Trends suggest that concern about contemporary food issues will continue to grow in Christianity, with a slow but vibrant growth in concern about sustainable agricultural ethics (Wirzba 2011).

Two areas of many where there is still contention about Christian perspectives on food include

contemporary Christian views about population growth and about genetically modified organisms being used in food and agricultural production (Bruce 2009). Where Christians might align on these issues in part depends upon if they have liberal or conservative interpretations of scripture and if they support free market ideologies. Catholics, along with many conservative Christian groups, are against population control. However, world population is expected to grow to at least nine billion people by 2050, and studies suggest that current global food production will need to double the 2010 output by the same year to meet growing global demand. This production will need to occur in a world undergoing anthropogenic climate change and suffering from loss of fresh water reserves. Some conservative evangelical groups, such as the Cornwall Alliance, believe in the power of human ingenuity and creativity and in free market economics and are confident that God's grace will allow for the suffering of humans throughout the globe who do not have from inadequate supplies of food and water to be alleviated. They are also supportive of using transgenic technologies to create nutrient and vitamin-enhanced food crops that can help provide what they perceive to be more nutritious foods to the millions around the world suffering from food poverty. This is just one of the many emerging Christian views on transgenic technologies, and prefaces debates to come in regard to this and the issue about human population size.

Summary

Overall, there are multiple Christian views from around the globe on food and agricultural ethics. It can be said with great confidence that there is an articulate and theologically grounded view of food and agricultural ethics that has emerged in the last 30 years in regard to some parts of global Christianity that expresses concern for sustainable agriculture. Some of the key North American exemplars have been highlighted in this entry, but this is not to suggest that there are not leaders in other parts of the world acting in both

institutional and personal settings. Future scholars of food issues will be helped by further research undertaken in both contemporary practices and theological understandings of food and agricultural issues, as well as in archival research, so scholars can obtain a better picture about Christianity's diverse historical relationship with food, agricultural ethics, and agricultural practices.

Cross-References

- [Agricultural Ethics](#)
- [Ancestral Cuisine and Cooking Rituals](#)
- [Biodynamic Agriculture](#)
- [Buddhist Perspectives on Food and Agricultural Ethics](#)
- [Christian Ethics and Vegetarianism](#)
- [Christian Mysticism and Food](#)
- [Christian Stewardship in Agriculture](#)
- [Christianity and Food](#)
- [Corporate Social Responsibility and Food](#)
- [Food Rituals](#)
- [Food Waste and Consumer Ethics](#)
- [Hinduism and Food](#)
- [Islam and Food](#)
- [Jainism and Food](#)
- [Judaism and Food](#)
- [Permaculture](#)

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Christian Stewardship in Agriculture

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Synonyms

Agricultural stewardship; Dominion;
Earthkeeping; Environmental stewardship

Introduction

This essay focuses on the uses of Christian stewardship in response to environmental concerns, especially in the field of agriculture in North America. The term stewardship means, at a basic level, responsible management of resources. This term has a tradition of use both among farmers and among Christians in North America.

The term stewardship is commonly used in farming circles to denote, at a minimum,

responsible use of farming inputs, including fertilizer, herbicides, and pesticides, so that they are maximally effective, with few negative side effects. Stewardship in farming can, however, encompass much more. Practices of stewardship in farming that are more broadly focused attempt to take responsibility for the positive influence farmers can have on the wider ecological system, as well as the long-term health of their farms.

The term stewardship also has a history of use within Protestant denominations in North America. In this case the resources to be managed are primarily financial. Good stewardship within a congregation encourages donations and responsibly manages financial resources for the maintenance of the congregation and church mission work. Many Christians interested in responding to environmental concerns also applied it to mean responsible care for, and use of, creation, or management of natural resources.

The term in both of these Christian uses, as management of either financial or natural resources, stems from biblical stories of the role of a high-ranking servant, the steward, often given significant authority, who is responsible for the master's property. Especially in the case of care for creation, stewardship is also closely connected with key passages in Genesis. Stewardship thus combines a measure of power and humility, responsibility, and authority. The extent to which each element is weighted depends on the interpretation of the scriptures in question. The difference is often expressed by contrasting dominion with stewardship.

Many of the theorists discussed below emphasize the reverberations of Christian attitudes toward nature and land use into wider North American culture, from colonization to the present day. The meaning and practice of stewardship in agriculture is closely tied to these Christian ideas.

Stewardship, with its roots in both farming culture and Christian tradition, seems a natural ethic for Christian farming. However, Christians do not agree on the meaning of stewardship, nor on what is demanded of farmers in applying the concept to contemporary farming. Thus, the multifaceted nature of “stewardship” presents

challenges to Christian farmers who attempt to practice it on their farms.

Critics have further raised questions about whether a stewardship ethic can effectively moderate problematic aspects of industrial agriculture at all. Modern industrial agriculture places significant pressures on farmers to increase farm size and to specialize in intensively farming one or two commodities. These pressures often work against what is necessary for the best agricultural stewardship. For a stewardship ethic to remain effective, it requires practitioners to be motivated by values beyond economic returns, and for farmers to maintain a meaningful connection with the land and animals under their care.

This essay focuses on three areas. First, it examines contemporary Christian interpretations of stewardship, especially in relation to the environment. Emphasis on human dominion over nature is contrasted with human responsibility for earthkeeping, based on differing biblical interpretations. Next, the essay examines stewardship's significance for farming. The farmer as gardener and caretaker connects with Christian images of the steward. Conflicts over agricultural land-use practices are closely connected with Christian debates on dominion and stewardship. Finally, it examines stewardship in the context of modern industrial agriculture. It considers whether a stewardship ethic, as part of an interconnected set of values, can effectively moderate or challenge the negative impacts of industrialization in agriculture.

Contemporary Christian Interpretations of Stewardship

The term "stewardship" is commonly used in North American Christianity. In his examination of the steward as a Christian symbol, theologian Douglas John Hall points out that North American churches' historical situation of disestablishment, that is to say, their lack of financial support through government, has meant that stewardship, especially of financial resources within congregations, has been vital to survival and prosperity

(Hall 1990). The common use of the term stewardship in this context means raising and managing funds to sustain the life and mission work of the church.

More recently, the concept of stewardship has been broadened beyond just financial resource management to include care for the earth. With the rise in concern about environmental issues, the significance of the symbol has been expanded and has been applied in various ways to address relations between humanity and nature from within a Christian perspective.

While stewardship has significance beyond addressing environmental problems, it is also not the only way Christians have approached these problems. Christians have taken different approaches to interpreting Christian scriptures and traditions to better address environmental concerns. An ethic of stewardship has been an important part of this theological thinking and practice, but does not have universal appeal among Christians. For example, Laurel Kearns, in her sociological research into Christian environmental action, categorizes three types of environmental response among Christians in the United States, of which a stewardship ethic is just one, alongside ethics of eco-justice and creation spirituality. The stewardship ethic, she notes, has the greatest appeal among evangelical Christians (Kearns 1996).

To call humans "stewards" means that humanity has a special role in the care, preservation, and cultivation of nature. This role elevates humans, since the position of steward is one of authority and great responsibility. At the same time it maintains a sense of humility and submission to the greater rule of God, who is understood as the true owner and ruler of creation. Often this emphasis on the important role of humans as stewards is coupled with special concern for human health and benefits that result from proper care for nature.

The scriptural basis for the model of stewardship is very important for many Christians, both theologians and laypersons, who are invested in its potential as a model for guiding Christian behavior toward the environment. As noted

above, its particular appeal among evangelicals explains some of this emphasis. As a result, much of the insider literature considers connection to and interpretations of scripture to better understand the relevance of the symbol and its potential for application to contemporary issues.

Christianity, especially in the West, has been accused of anthropocentrism, or excessive focus on the importance of humans. Most famously, this accusation came from historian Lynn White Jr. when he wrote that, “Christianity is the most anthropocentric religion the world has seen” (White 1967). This anthropocentric worldview, as White saw it, was based primarily in an understanding of humanity as created in God’s image, and as being placed on earth to rule over nature, which existed for human benefit. This is the foundation of the idea of the dominion of humanity over nature, based on interpretations of especially Genesis 1:27–28, which reads, “So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth” (KJV). For many, these verses lay out at the very beginning the special relationship between God and humanity, who are in God’s image, and the special role of humanity who are given dominion over nature.

Interpretations of the special place of humanity and the extent of human control over nature implied in the concept of stewardship vary. Some argue the role of human stewardship extends globally, over all living things and habitats. For them, stewardship is best realized through human control and development of nature, emphasizing the dominion of humanity over nature.

Others have used the model of the steward in responding to White’s and others’ accusations that, especially in the West, dominion has been exercised excessively. They use later verses to give insight into their interpretation of the role humanity was given in these early Genesis passages and how dominion should be exercised.

One such verse, often connected with the stewardship of nature, is Genesis 2:15 which reads “And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it” (KJV). Writers such as theologian Loren Wilkinson and agronomist and practicing Christian Gary Fick argue that the true responsibility of Adam, who here represents humanity, is to be the gardener, the keeper, and protector of the earth (Wilkinson 1991; Fick 2008). Taking seriously the accusation that too often dominion was interpreted as domination, the use of stewardship here sees dominion not as a power given to humanity, but as a responsibility. Humans are to be good stewards of the earth, to tend and keep the earth on God’s behalf. For Wilkinson, Fick, and others, a good steward is defined as a protector of creation.

Interestingly, neither steward nor stewardship is mentioned in either of these scripture passages. Instead, looking at the concept of the steward from both the Old and New Testaments, including later in Genesis, these passages are interpreted in light of their understanding of humanity’s role as stewards under God’s ultimate lordship.

For others, stewardship acknowledges and hopes to curtail the uncontrollable implications that human power has to disrupt nature, more than it calls on humans to exercise power as control, either in a dominion or keeping mode. As Robin Attfield, a philosopher of environment and religion, explains, “stewardship is not synonymous with interventionism, and is compatible with letting-be...[yet] responsibility remains possible for the entire sphere of nature which humans can affect. ... Unless this extensive power is exercised with responsibility, global problems will be intensified. Thus the choice is between power exercised responsibly, and power without responsibility” (Attfield 2006). This is especially the case in agriculture, where human technology and practices in this field have wide-ranging effects globally.

Some, such as Hall, have gone beyond stewardship as management of either finances or human relations with nature. Hall argues that it

has far greater potential. For him, stewardship is a symbol of human (Christian) vocation in the world, emphasizing that Christians should be engaged with the well-being of the material world. In his interpretation of the symbol, Christian stewardship would encompass work toward greater social justice, greater relations between humanity and nonhuman nature, and a more peaceful world (Hall 1990). Thus, the literature reflects a fairly broad spectrum of interpretation of what stewardship can mean in terms of human power and responsibility.

Stewardship's Significance for Farming

Just as stewardship is connected with the Christian experience in North America, it is also tied with the practice of farming. The influence of Christian attitudes to nature and land use is still apparent in conflicts within agriculture today. Despite the importance of the religious roots and use of stewardship, the term is used frequently by many outside theological circles, especially in reference to farming practices, often without any overtly religious meaning intended. Stewardship in this case often means good farm management. Michael Northcott, a Christian ethicist, points out that the term, in this more limited sense, is even used by agricultural input companies as well as by agricultural regulators (Northcott 2006).

Good stewardship in farming is commonly understood to mean practices that conserve and improve the health of the soil and protect the water and species of plants and animals that the farmer depends on to produce food and fiber for the whole community. A stewardly farmer is a good manager of the resources under her or his management, ensuring healthy farmland, adequate pure water, and healthy plants and animals. A good current crop must not come at the expense of lost soil, lost fertility, or contamination of the farm ecosystem in the long run. The symbol of the steward as gardener makes sense in a farming context. Thus, many see using the symbolism

of stewardship as particularly apt for approaching environmental issues related to farming practices.

Interpretations of dominion and the meaning of stewardship vary within an agricultural context as well and affect farmers' relationship with and treatment of their land. The issue of dominion is especially apparent in debates about property owners' rights. Farmers often now control large tracts of land on ever-growing farms. The implications of the practices of individual farmers on their own land, however, do not stop at their property lines and can affect those immediately surrounding the farm and also the wider ecology of the region. When taken together, common practices can have a global impact.

Frederick Kirschenmann, both a farmer and an agricultural academic, points out the sometimes-conflicting values on land use that Christians brought over into the "New World." On the one hand, they felt called to use and develop the land to its fullest potential (exercising dominion), and on the other hand, they felt called to preserve and protect the land as a place of freedom [and prosperity] for many generations (exercising stewardship). These values continue to conflict today, argues Kirschenmann, even within the same person. The contrast between these two values is sometimes expressed in the conflict between private property rights, or a sense of entitlement, and stewardship of the land, or a sense of greater responsibility to God or to future generations for the gift of land (Kirschenmann 2010).

Aldo Leopold also connected attitudes of dominion with emphasis on private property rights in his influential 1949 book *A Sand County Almanac*. Although Leopold was primarily concerned with conservation issues, much of what he has to say has relevance for agricultural issues related to the environment as well. He argued for what he called the land ethic, as a way to instill a deeper understanding of human responsibility to the wider community of soils, waters, plants, and animals, or collectively: the land (Leopold 1949). Leopold, as did White, explicitly connected attitudes of entitlement to

ideas founded in interpretations of Genesis, but in Leopold's case he critiqued the stories of Abraham. Although these ideas have Christian foundations, both argue that these attitudes now pervade Western secular culture and, in White's case, Western science and technology as well.

Stewardship is also tied to ownership of land, but in a different way. Paul Thompson, a philosopher of agricultural and environmental ethics, contends that stewardship in farming is primarily a selfishly motivated act (Thompson 1995). The farmer benefits directly from acting in a stewardly way. Farmers who own the land they farm logically have more incentive to look after their land. He or she has a greater investment in the long-term health of the soil and surrounding ecosystem, especially if the farmer has aspirations to pass the farm on to succeeding generations, as is the case with a family farm. This self-interest in the farming context moderates the sense of entitlement that also tends to accompany an understanding of private land ownership.

The public is coming to expect more from farms than just food and fiber. Farms now also produce other goods that are recognized by consumers such as environmental benefits, agritourism, and even energy production. Property rights are thus being balanced against wider social and environmental goods and the expectations of society at large.

The differences between dominion and keeping stewardship are evident within farming specifically. In his study of the use of stewardship among (especially Dutch) Christian farmers in Canada, geographer John Paterson makes a distinction between what he terms dominion stewardship and earthkeeping stewardship in farming. The differences in biblical interpretation discussed above are reflected in the emphasis of dominion stewardship on the entitlement of humanity from Genesis 1:28, while earthkeeping stewardship emphasizes the responsibility of humanity as keepers based on Genesis 2:15. Earthkeeping stewardship also gives greater emphasis to the intrinsic value of nature beyond human use and concern (Paterson 2003).

Stewardship in agriculture is primarily about sustainable use of nature. It is about managing certain areas of land and certain species of plants and animals in a way that provides a stable source of food and other benefits for humans. This can be seen as both good and bad. Farmers are primarily concerned with preservation of soil and water resources, the basis of their livelihood, while (often urban) environmentalists may be primarily concerned with preservation of wild species habitat and pristine areas for conservation. Farmers argue that agriculture makes room for the needs of human beings as part of nature, while at the same time doing so with an awareness that a balance of give and take must be maintained. Environmentalists argue for the preservation of nature based on its intrinsic value or based on the recreational and aesthetic benefits it provides in a more pristine natural state.

Thompson points out that this apparent cross-purpose is founded in the religious notions of the role of humanity and the myth of the garden. If humans are primarily seen as gardeners of all of nature, as is sometimes the case in interpretations of stewardship, then the environmentalist agenda of preserving wild nature seems anathema (Thompson 1995). On the one hand, the gardener need not garden the whole of creation, as expressed in other interpretations of the term above. Yet some suggest they may go hand in hand. James Lovelock, an independent scientist famous for his work on Gaia Theory which postulates the earth as a self-regulating system, argues that more intensive farming methods allow greater production from smaller areas of land, making it possible to "leave alone" larger areas for conservation purposes (Lovelock 2006a).

The idea or symbol of stewardship has the ability to narrow and widen like the aperture of a camera lens. Different interpretations expand or contract the privileges or responsibilities implied in the concept. Does good stewardship simply entail following the best practice recommendations of the input companies, or is it saying something much more profound about the value of all life on earth? Critics and proponents of

stewardship often have differing views on its narrowness or breadth. Proponents such as Hall see it as having a broad significance and as inhabiting important middle ground between excessive control and slothful apathy (Hall 1990). Opponents of stewardship instead accuse it of being too far toward the side of excessive control, as being too utilitarian, and not sufficiently recognizing the intrinsic value of all life.

Critics of stewardship, such as Thompson or Lovelock, tend to take more narrow interpretations of the types of demands stewardship places on the human practitioner. Thompson accuses stewardship of being excessively human-focused, saying “agricultural stewardship is entirely compatible with self-interested, anthropocentric use of nature” (Thompson 1995). Lovelock compares stewardship to imperialism, with hubris and nemesis soon to follow (Lovelock 2006b). As shown above, these accusations are a good description of interpretations of the term that emphasize human control over and development of nature. However, these criticisms do not address the full breadth given to the term by those, including Attfeld, Hall, Fick, and Wilkinson (mentioned above), who use stewardship to mean earthkeeping or even a greater responsibility for the potential impact of human activity on nonhuman life.

Stewardship in the Context of Modern Industrial Agriculture

Stewardship practices face new challenges within the context of modern industrial agriculture. Some are concerned about the negative impacts of changes in farming, considering that the population of farmers is both aging and shrinking in numbers. Farms are growing bigger and bigger, as farming equipment allows one farmer to manage ever-increasing acreage, flocks, and herds (Kirschenmann 2010). Farmers must navigate storms of weather as well as of the economy and politics. Interest rates can be as devastating to farming as lack of rain in a system that now heavily relies on expensive inputs and

technology. The ability, or lack thereof, to implement stewardly practices is often at least partly determined by economic factors. Sometimes even the self-serving aspect of stewardship is not enough incentive in the face of other pressures on farmers.

Although economic factors are important, writers such as White and Leopold illustrate that worldviews are also important determining factors in how farmers treat their land. White argued that Western Christian anthropocentric attitudes were and are expressed in forceful and controlling farming technology and methods (White 1967). Leopold says in the conclusion of his essay “The Land Ethic” that, “[t]he bulk of all land relations hinges on investments of time, forethought, skill, and faith rather than on investments of cash. As a land-user thinketh, so is he” (Leopold 1949). Both of these writers caution that underlying human attitudes toward the land will have far reaching effects on the treatment of it.

So long as farming methods allow farmers to maintain a direct connection with the landscape, soil, plants, and animals they farm, they can still invest time and thought into meaningful stewardship practices. It is the quality of this connection with “the land” that is important in determining the extent and effectiveness of the stewardship that can be accomplished. Through modern industrial agriculture, humanity has ever-increasing control over aspects of farming that were uncontrollable in the past. New technologies and farm efficiencies result in bigger crop yields per acre, greater dairy production per animal, and animals that fatten more quickly than ever before. As farming increases in scale and intensification, so too do the uncontrolled risks farming poses to humans and other surrounding species. With the increasing industrialization of farming, the relationships between farmers and the land change, as well as the relationships between farmers and eaters and among rural and urban communities. The wider consequences of new farming technologies may not be immediately apparent.

Some critics of industrial agriculture point in particular to the social impacts of the changing

size of farms on rural communities. Wendell Berry, an influential agrarian thinker and essayist, who is himself both a Christian and a farmer, has offered many criticisms of the effects of industrialization on agriculture and on society at large. Berry's critiques extend to both the impacts of changing technology on rural life, and also the wider social impacts this has on moral character, and on community life in general. Specialization and industrialization fundamentally change human relationships to land, work, home, and community. Losses and changes previously experienced only in urban areas have now come to the farm as well.

Industrial agriculture has also shifted the primary sources and uses of energy on the farm. Berry contrasts energy from the sun, which can be used cyclically, with energy and nutrients from fossil fuels, which must be used wastefully (Berry 1977). For Berry, the sustainability of any technology that continues to use and depend on wasteful use of limited sources of energy and nutrients is in question. Environmental concerns are too much ignored in an industrial ideal that pushes aside a large part of the human and animal population whose labor and livelihood is replaced with increasingly powerful machines. Where animals and humans can work on cyclical energy sources, returning fertility to the land, machines are dependent on petroleum not only to fuel the tractors but also to feed the soil as fertilizer.

Berry argues that an ethic of stewardship, in short, does not stand by itself. It is a value expressed alongside values for community, industriousness, and even to some degree self-sufficiency (Berry 1977). As stewardship is primarily a question of balance, it raises the issue of limits, and of the effects of size and scale, as much as of kind. It is best practiced, Berry argues, when technology and economy remain at a "human" level, allowing the farmer close enough connection and familiarity with both the land he or she farms and the community in which he or she lives to be effectively responsible to both.

Writers such as Barbara Kingsolver, a novelist and nonfiction writer, and Mark Graham,

a Christian theologian and ethicist, join Berry in reflecting on the connected problems of intensification and expansion, mechanization, and diminishing rural community life. They have each looked for examples that illustrate effective alternatives that manage to keep the interconnected values mentioned above in balance. Traditional Amish and Mennonite farming communities form examples that all three look to as effective alternatives to modern agricultural methods (Berry 1987; Graham 2005; Kingsolver 2007). These communities farm with methods and technologies that still make effective use of cyclical energy sources, and they maintain the importance of community, family, hard work, as well as stewardship over the long-term. More moderate challenges to the forces of industrialization are also evident in other Christian farming communities, who also value the importance of community and stewardship, as research into Dutch-Canadian farmers in central Canada attests (Paterson 2001).

The importance of the "family farm" is related to concerns about the effects of technology and economic forces on these connected values in farming. Some in the farming community argue that farming methods that still remain at the level of management of a "family farming business" should be able to sustain the values of family, community, and stewardship. It is when farming moves to a different model of labor and capital that it fundamentally changes, and with it, the possibility for quality stewardship changes also.

One figure that has emerged as a vocal spokesperson for alternative farming methods and the importance of stewardship in farming is Joel Salatin. Made famous by Pollan's 2006 book *The Omnivore's Dilemma*, he is both a practicing farmer and inspirational speaker. He often makes connections between his religious worldviews and his particular farming and stewardship practices. Salatin's farming philosophies are an eclectic mix, which often bridge concerns shared by environmentalists and farmers, urbanites and rural people, and evangelical Christian and New Age perspectives on

environment. While clear divides exist between many of these groups, he illustrates that points of connection can be found.

Humans need to find a balanced and meaningful relationship with nature to survive and thrive into the future. Berry contrasts the technological ideal of industrial farming, (which could be extended to industry of all kinds), with the ideal of preservation environmentalists. Neither, he believes, see a meaningful role for humanity. "Neither the agricultural specialist nor the conservation specialist has any idea where people belong in the order of things. Neither can conceive of a domesticated or humane landscape. People . . . are perceived by the specialist as a kind of litter, pollutants of pure nature on the one hand, and of pure technology, total control, on the other" (Berry 1977). Writers such as Hall and Berry seek a middle ground, a meaningful place for humans in a balanced relationship with nature. What that means in practice is what is at issue.

Summary

Environmental stewardship is about the relationship between humanity and nature. Those seeking a stewardship model in agriculture see the need for healthy human culture as well as a healthy natural environment, where both can work together in meaningful and reciprocally beneficial ways. Christian stewardship in agriculture is interpreted in different ways, giving it different scope and emphasis. With connections to passages in Genesis, a stewardship view includes some notion of the human as gardener, or farmer. It is not about letting nature completely alone, nor about excessive control of nature through technology, but about meaningful and balanced relations between humans and nonhuman nature.

Cross-References

- [Agriculture of the Middle](#)
- [Farmer Types and Motivation](#)

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Christianity and Food

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Introduction

Food preparation, cooking, and eating are regulated less formally in Christianity than in other religions, such as Judaism and Islam. Although it is not always possible to identify Christian ethical rules governing specific procedures and practices, teaching and wisdom offer extensive general guidance. Key sources include scripture, tradition, and monastic rules. In this contribution, Christian teaching will first be situated in the context of the imperatives of the Old and New Testaments. The Christian preference for simple diet and preparatory methods will then be discussed, followed by the high valuation of the task of cooking in monastic rules and Christian influences on specific dietary options and recipes. Finally, the ways in which flexibility and rules have each played a part in shaping the choices of Christian diners will be considered.

The Two Testaments: Change and Continuity

In the Christian communities of the New Testament, the status of the Jewish law, received from God by Moses, was debated extensively. In this law, rules governing food preparation were prominent. This debate became heated as Paul's mission to the Gentiles began. (Gentiles were non-Jews who had not previously followed the Jewish law.) Jesus' teaching seemed to suggest that some parts of that law no longer applied or did not apply to the Gentiles (Matthew 11.25-30, 23.13-28; Mark 7.14-23; Luke 10.29-37, 18.9-14, John 1.14-18). Yet Jesus also presented himself as not abolishing the Jewish law but fulfilling it (Matthew 15.17-20, Luke 16.16-18, John 5.45-7). In view of this apparently contradictory teaching,

did Gentile converts to Christianity need to observe the full requirements of the Mosaic law relating to food preparation, especially as laid down in the Old Testament books Leviticus and Deuteronomy? At the Council of Jerusalem, a compromise was reached in which all Christians were urged to abstain from food sacrificed to idols, from blood, and from the flesh of living beings killed by strangulation (Acts 15.29). Christians were therefore expected to continue some Jewish meat preparation practices. Other Jewish customs could, by implication, be discontinued, such as the requirement not to mix milk and meat (Exodus 23.19b).

Isolated attempts have been made to reinstitute aspects of the Mosaic law relating to food preparation, notably in Celtic Ireland in the seventh through ninth centuries and in other regions under the influence of Eastern Orthodox Christian missions (Grumett 2008). Yet in subsequent Christian history, even the minimal expectations articulated at the Jerusalem Council were mostly ignored. Nevertheless, a significant strand of teaching censures elaborate methods of food preparation and cooking, associating these with the sin of gluttony and urging Christians to adopt simple methods. The classic understanding of gluttony encompassed a considerably wider range of activities than is generally assumed today (Miller 1997). Gluttony was not simply, nor even primarily, the sin of consuming excessive quantities of food. As Thomas Aquinas (1962–1976) taught, gluttony included the sin of eating food that was too costly or difficult to prepare as well as the sin of eating too early or too quickly (*Summa theologiae* II.2, q. 148, a. 4, resp.).

A Simple Diet

In his fourth-century monastic teaching, Basil of Caesarea promotes a simple diet employing ingredients that are available locally. He counsels:

We ought to choose for our own use whatever is more easily and cheaply obtained in each locality and available for common use and bring in from

a distance only those things which are more necessary for life, such as oil and the like or if something is appropriate for the necessary relief of the sick – yet even this only if it can be obtained without fuss and disturbance and distraction. (*Longer Responses* 19)

Basil here recognizes that, in monasteries, gluttony could become an acute temptation. Although monasteries were traditionally strictly ascetic, economies of scale made it possible for their members to obtain foods and employ preparation methods unavailable to the wider populace.

Christians have promoted simplicity in cooking as well as in food sourcing and preparation, with ascetics subverting the traditional hierarchy described by Claude Lévi-Strauss (1969) that assigns cooked food a higher status than raw food (Twigg 1979, 1983). The desert fathers were noteworthy in this regard. These hermits lived apart from society in the early centuries of Christianity in order to pursue a life of prayer and self-denial. In their *Lives* (1981), the desert fathers are presented as subsisting on very small quantities of roots, leaves, herbs, pulses, seeds, and olives. In Palestine and Syria an especially strict group, known as “grazers,” ate only grass, sometimes alongside wild animals. Most of these simple foods have been classed by humoral theorists like Aristotle, Galen, and Albert the Great as “cold” and “dry,” in contrast with the “hot” and “moist” dishes that would typically be produced through cookery. “Hot” and “moist” dishes, especially cooked meat, were seen as warming the body and leading it into temptations, above all sexual temptations, whereas “cold” and “dry” foods, such as raw vegetables, were believed to maintain the body in a state of physical purity and spiritual discipline.

These theories were promoted by many early Christian authorities such as Jerome and Basil of Ancyra. They were revived by nineteenth-century health reformers, many of whom were prominent Christians. In 1829, Dr Sylvester Graham, the Presbyterian minister and temperance lecturer, invented the cracker biscuit that bore his name. This tasted like a digestive biscuit and had a similar consistency as well as a dryness

intended to curb sexual urges. At the start of the twentieth century, the Kellogg brothers and other Christian entrepreneurs pioneered breakfast cereals and other meat substitutes such as peanut butter in order to wean Americans off their pork, beans, and pie breakfasts (Carson 1959). John Harvey Kellogg and William Keith Kellogg were Seventh Day Adventists based at the church’s Battle Creek Sanatorium in Michigan. The Christian context of some breakfast products was proclaimed by their names, which included Food of Eden, Golden Manna, and even Elijah’s Manna. Today breakfast remains the daily meal most deeply impacted by Christian dietary ideals, in both its generally raw ingredients and simple preparation.

Although mainstream Christianity has obviously not viewed all cooking negatively, a concern to avoid unnecessary cooking has persisted. This is well expressed by Clement of Alexandria (1993), who in his *Instructor*, written around 200, commends “simple, truly plain” food that ministers to “life, not to luxury” (ch. 2.i). Such food, he continues, is “conducive both to digestion and lightness of body, from which come growth, and health, and right strength.” Clement attacks a range of elaborate food preparation methods, including pastry making, and condemns consumers of elaborate dishes as “gluttons, surrounded with the sound of hissing frying pans” who wear their “whole life away at the pestle and mortar.” These comments indicate that, if raw items are edible and in sufficient supply, they should be preferred to cooked dishes.

One of Clement’s complaints is against cooks who “emasculate plain food, namely bread, by straining off the nourishing part of the grain, so that the necessary part of food becomes matter of reproach to luxury.” This critique of white bread re-emerged in the nineteenth-century health reform movement. Sylvester Graham, previously mentioned, regarded white bread as nutritionally deficient, promoting in its place brown bread made with his own brand of wholemeal flour, which contained coarsely ground bran and germ. By commercial means such as these, theological choices about recipes and preparation

methods made wide impact on daily life, with products marketed as part of an embodied spiritual discipline. Bodily health was widely viewed as indicative of spiritual health and even of personal salvation.

The criticisms of early Christian writers and later Christian health reformers were directed primarily against meat (Grumett and Muers 2010), which usually had to be cooked before it could be eaten. Part of the reason that cooking could historically be regarded as a superfluous activity was that levels of meat eating were generally low, certainly compared with current levels in the West. Yet beyond monastery walls, abstinence from meat was not the norm at all times. Feasts marked important points in the Christian year, especially Easter and Christmas, and good cooking, including meat dishes, helped make them special. Indeed, Jesus himself cooked and ate fish after his Resurrection, in the presence of several disciples (John 21.9-13). This suggests that cooking should in principle be viewed positively, providing its results are not unnecessarily luxurious nor the preparation process needlessly time-consuming.

Cooking and Recipes

In the rules of some monastic communities, cooking is regarded as a sacred commission. In the *Rule of Benedict* (1989), composed around 540, the cellarer, who functioned similarly to a bursar, is exhorted to “look upon all the utensils of the monastery and its whole property as upon the sacred vessels of the altar” (ch. 31). This ethic of culinary care is confirmed in the eighth-century *Longer Rule for Canons* composed by Chrodegang of Metz (2005), in which the cooks are to be “selected from the most faithful members of the household of the church, and be carefully trained to their work, so that they may be capable of attending to the needs of the brethren appropriately, both by their skill at cooking and by their pure faith” (ch. 11).

This view of cooking as a sacred charge is clearest in some of the practices surrounding the manufacture of the leavened bread used in the

Eucharist. In many ancient traditions this bread was required to be prepared in silence, or by priests, or while specific psalms were chanted, or while special clothing was worn (Galavaris 1970). In some places the bread had to be baked in church, in an oven provided for this purpose. In any case, the bread was expected to be of high quality, made with finely ground sifted flour, and usually had to be baked on the day on which it was offered. In his *Lausiac History* (1918), Palladius describes the hermit Candida rising at night to grind corn, light the oven, and bake the loaf for the morning Eucharist (ch. 57). The leaven, which was reserved from the previous batch of dough, was seen as testament to a church’s continuing eucharistic tradition. In some churches it was even traced back to a portion associated with Jesus or one of his apostles.

The seasonal prohibitions of specific food-stuffs discussed earlier have influenced the development of recipes that remain popular today. The most important such season has been Lent, lasting about six weeks, when red meat, poultry, dairy products, and eggs were historically banned by both church and state (Henisch 1976). Pancakes and recipes involving the frying or roasting of pieces of meat are made in many countries during Shrovetide or Carnival, the period immediately before the start of Lent. Although Mothering Sunday, which falls around the middle of Lent, was a time for relaxation and family gatherings, food prohibitions nevertheless continued. To provide a suitable treat without employing any banned ingredients, dried fruit and nuts could be used with marzipan (made from almonds, the standard milk substitute), yeast, and saffron to produce simnel cake. Hot cross buns were baked on Good Friday, although after the Reformation Protestants viewed these with suspicion because of their associations with the eucharistic bread, which Catholics reserved on the previous day. Easter eggs, which originally were hardboiled decorated eggs, were exchanged at the end of Lent. This was because, once the ban on egg consumption ended, they were available in abundance.

Fish cookery has been indirectly promoted by Christian bans on the consumption of red meat

that applied across society during Lent and on regular days of abstinence such as Fridays, as well as throughout the year in most medieval monasteries (Grumett 2011). These monasteries were well known for their lavish fish cookery and frequently criticized for it by those who viewed such cookery as incompatible with the spirit of monastic simplicity. The custom of serving fish on Fridays continues today in many restaurants and refectories.

Medieval monasteries also played an important role in brewing, winemaking, and the distillation of spirits, as evidenced today by the names of many alcoholic drinks and producers. Alcohol, unlike meat, was not banned in monasteries. Although John Wesley, who founded Methodism, condemned distilled spirits, general prohibitions of alcohol under Christian influence were rare before the temperance movement of the later nineteenth century (Fuller 1996).

Eating: Flexibility, Rules, and Choices

Meals comprise a central strand of the biblical narrative about Jesus. It is notable that a meal, the Last Supper, is Jesus' final act of fellowship with his disciples. All four Gospels include an account of Jesus presiding at this meal (Matthew 26.20-9, Mark 14.17-25, Luke 22.14-38, John 13.2b-17.26). In John's account, moreover, this meal is an occasion when Jesus tells his disciples much about himself and his destiny. In Luke's Gospel, furthermore, after his Resurrection Jesus reveals himself to some of his disciples in the breaking of bread (24.30-1). (This breaking was the prerogative of the host and a standard part of any meal.) Paul provides the first account of a Christian Eucharist, presenting it as a memorial and proclamation of Jesus at which bread and wine are consumed (1 Corinthians 11.23-6).

Jesus was a guest at many meals in the course of his ministry and was frequently criticized for accepting invitations to the tables of tax collectors and sinners (e.g., Matthew 11.19). His example promotes a flexible approach to dining and is developed by Paul (Romans 14.1-15.13; 1 Corinthians 8-11.1). For the reasons discussed at the

beginning of this entry, however, flexibility did not entail complete liberty. Rather, Paul taught that choices about accepting hospitality and the foods offered should be made with a view to the effects of those choices on other people, whether Christians, Jews, or Gentiles, and on the Christian mission. For instance, unrestricted consumption would likely offend potential Jewish converts, just as excessive strictness might deter Gentiles. A well-known figure from much later in Christian history, who acted similarly to Jesus, is Francis of Assisi, who in 1210 founded the Franciscan order. Although Francis' preference was to avoid meat, he was not completely vegetarian, because this would have impeded his ability to share the life of the people around him. This included being a guest at meals, at which meat would sometimes be served (Grumett 2007).

The Gospels recount many shared meals, and dining together in a single room became the norm in monastic communities, as reflected in their written rules. In the *Rules of Pachomius* (1981), composed in about 320, special care is taken to prevent eating in any other location. It is stipulated that no food be taken from the community's garden, fields, or orchard for personal consumption nor stored privately (chs 71-80). These rules applied even to windfall fruit. From then onwards, monasteries had a refectory in which meals would be taken in common and in which the dining rules were enforced. As monasteries grew larger, however, other dining areas were created in which the rules were deemed either not to apply or to apply less strictly.

At least as significant as the location in which meals were taken was the time of eating. In the fifth-century *Rule of Saint Augustine* (1984), adopted by the Dominican order, the main meal was delayed until late in the afternoon, although monks and nuns who were unable to fast for that long were permitted to take some food around midday (ch. 3.1). In the later *Rule of Benedict*, the time of the main meal, which was the first meal of the day, varied according to the season. For example, during Eastertide it was taken at midday ("the sixth hour") and followed by supper, whereas in the penitential season of Lent, it was delayed until evening (ch. 41). On most other

days it could be taken at around 3 p.m. (“the ninth hour”). The principle of delaying the first and often only meal of the day in order to fast was a standard monastic discipline, but in recent decades has found very few advocates (although see De Vogüé 1989).

In monasteries and convents, although dining was communal, speaking during meals was prohibited. Requests for food or utensils were communicated via a simple system of sign language (Ambrose 2006). At some meals, diners listened to readings from scripture or other edifying texts or to extracts from their rule. This left them free to meditate and eat their food thankfully.

Even in the relatively strict monastic dining context, a choice of dishes was permitted. The *Rule of Benedict* allowed monks to choose between “two cooked dishes, on account of individual infirmities, so that he who perchance cannot eat of the one, may make his meal of the other” (ch. 39). The *Rule of the Master* (1977), compiled shortly before that of Benedict, unusually allowed meat to be eaten at the Easter and Christmas feasts by those who wished. But this choice was presented in such a way as to discourage the meat option. The rule states:

Let those brethren of a deanery who are going to eat meat be seated beside one another at their own tables, and let the specially cooked meat courses be brought to them in separate dishes, lest the purity of the abstainers seem to be sullied, and in order that the eaters may notice how great the distance is between them, those who cater to their desires and those who master the stomach. (ch. 53)

Moreover, the Master advises in the same chapter that, when the feast approaches, the monks be guided in their choice and encouraged to join the abstainers’ table.

In the later medieval period, monastic gluttony was frequently the object of wider public critique. Interestingly, similar criticisms of conventual practice are much rarer, suggesting that nuns were more likely to observe the spirit of their rule than monks. In Geoffrey Chaucer’s *Canterbury Tales*, which were written in the late fourteenth century, for example, the monk’s favorite meat is roasted swan, suggestive of lavish expense as well as pride and sloth, while the

summoner (a friar) enjoys garlic, onion, and leeks, which were often believed to possess aphrodisiacal properties. The good widow of the *Nun’s Priest’s Tale*, in contrast, lives simply, drinking no wine and eating milk and brown bread (Biebel 1998).

It is significant that the decline in monastic dietary discipline was associated with a move away from common dining in a single place at a fixed time. In the modern world, traditions of common family dining are threatened by the rapid spread of mass fast food culture (Grumett et al. 2011). Yet from the perspective of a Judeo-Christian theology of creation, food is a gift from God to humankind that is, as such, given within boundaries and with limitations (Genesis 1.29). A misplaced desire to consume food and to have food accepted by God lies at the root of the two great primordial biblical sins: the expulsion of Adam and Eve from Eden after they tasted the forbidden fruit (Genesis 3) and the murder of Abel by his brother Cain after God’s rejection of the latter’s vegetal offering (Genesis 4.1-16). This sinful nexus of consumption, estrangement, and annihilation contrasts starkly with the Sabbath rest into which God calls all people (Exodus 20.8-11), in which waiting and the taking of time allow lives to be shaped by principles other than consumption.

Conclusion

Although the expectations surrounding food preparation, cookery, and eating are less clearly codified in Christianity than in many other religions, traditions of practice and interpretation with ethical relevance can nonetheless be identified. These emerge from Old Testament legislation, its interpretation in light of the teaching of Jesus, and the subsequent codification of both by churches and monastic founders. The ingredients and preparation techniques employed should both be simple. For this reason, local sourcing of ingredients is desirable and foodstuffs that may be eaten raw should normally be preferred where practicable, as part of a balanced diet suitable for the individual. Moreover, particular seasons and days of abstinence are part of Christian tradition.

Preparing the dishes associated with them is one way of engaging present-day Christians with the dietary history of their faith and, via that history, with their faith's cycle of feasts and fasts, its scripture, and its doctrines.

Such principles have wider relevance. The renewal of interest in monastic wisdom and mindful practice that is evident beyond the boundaries of institutional Christianity suggests that Christian traditions of food preparation, cooking, and eating have continued relevance for wider society. Indeed, by giving such features of their religion greater prominence, Christians might demonstrate a more embodied and rooted faith that appeals to people who are currently searching for enlightenment elsewhere.

Cross-References

- ▶ [Christian Ethics and Vegetarianism](#)
- ▶ [Fasting](#)
- ▶ [Gluttony](#)

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Civic Agriculture

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Synonyms

Agricultural social entrepreneurs; Alternative food networks; Embeddedness; Local food systems; Public goods in agriculture

Introduction

Civic agriculture is a term used to describe several alternative forms of farm-based entrepreneurship which emphasize the embeddedness of agricultural activity in local communities. Embedded local agriculture is characterized by direct linkages between producers and consumers, thus forging tighter relationships in communities and creating a multiplier effect in local economies. Civic agriculture emerged as a discursive frame in rural sociology, geography, and development studies with the publication of a series of articles and texts by Thomas Lyson and others in the late 1990s and early 2000s (Lyson 2000). Civic agriculture developed among other theoretical and descriptive frames, such as alternative food networks, as a response to the relative lack of attention given to how and why small-scale producers persisted through the agricultural restructuring in the United States in the 1970s and 1980s. Lyson (2004) writes that civic agriculture is thought to “fill the geographic and economic spaces that have been passed over or ignored by large-scale industrial producers” (61).

The proliferation of local food systems in the past several decades constitutes key points of diversity and resistance in the agricultural economy that, according to “civic agriculture” explanations, signals a shift toward a more public agriculture. While diverse, these socioeconomic activities in agriculture have in common, according to Lyson (2004), the potential to “nurture local economic development, maintain diversity and quality in products and provide forums where producers and consumers can come together to solidify bonds of community” (p. 87). In what follows, this entry will provide some elaboration of the key principles and concepts of civic agriculture. Of particular interest to scholars studying civic agriculture are the ideas of embeddedness, public goods, and community development. The entry will conclude with capturing some of the debates around justice, gender, and postcapitalist politics that are often overlooked in theories of civic agriculture.

Civic Agriculture

Conventional, industrial-scale agriculture produces cheap food and fungible commodities as well as well-documented social, economic, and environmental problems. Consumers of conventional foods are generally separated socially and geographically from the places of food and commodity production, keeping them ignorant of and disconnected from production practices. Civic agriculture is characterized by complementary social and economic strategies that are intended to provide economic benefits to farmers as well as socio-environmental benefits to the community. These benefits can include cleaner water through reduced chemical use, fresher food through direct marketing, and closer relations between producers and consumers through short supply chains. Through cultivating a sense of loyalty to agriculture’s limits and capacities in a particular place, civic agriculture aims to develop a kind of “food citizenship” (Lyson 2005).

Civic agriculture differs from other technical innovations in agriculture emerging around the same time, such as certified organic production, in the way that issues of social welfare are emphasized. Technical practices often overlook, or are not designed to accommodate the social dimensions of equity in the food system. The advocates for social welfare in the food system call for the long-term maintenance of farming livelihoods, the provision of quality food and nutrition to individuals regardless of socioeconomic status, and the distribution of public goods (i.e., clean water or living wages) throughout a community. Lyson (2004) suggests that a more “civic” agriculture draws on notions of economy that incorporate social relations, cultural and environmental history, and local politics into agricultural production and distribution. Small-scale farmers aim to increase “community capital” by contributing directly to the local economy and to the social and physical health of local residents. The civic agriculture approach highlights the “problem-solving capacity” (Lyson 2004, p. 63) of locally organized food systems, which are “characterized by networks of producers who are bound together by place” (Lyson 2005, p. 92).

Lyson (2004) developed his theory of civic agriculture by examining in detail several studies on small businesses commissioned by the Congress in 1946. These studies, conducted by sociologists Mills and Ulmer and anthropologist Goldschmidt, compared communities on the basis of well-being related to the presence or absence of small-scale businesses and large-scale agriculture, respectively. They found that communities with more small businesses and small-scale farms scored higher on quality of life measures. While the results of these studies did not change the trajectory of American agriculture and rural communities at the time, Lyson uses them to articulate the characteristics of the small-scale business enterprises that survived the modernization of agriculture. They are summarized as follows: (1) selling in local markets, (2) integrating agriculture into the community, (3) producing value-added and quality products, (4) staying small-scale and land- and labor-intensive, (5) using site-specific knowledge, and (6) maintaining short supply chains.

The benefits to community welfare are clearly greater than the sum of these characteristic parts, as any given small business could diminish public health or degrade the environment with its practices. Civic agriculture thus distinguishes itself not just in its scale, scope, or supply chain but in what Lyson (2004) identified as contributing to the “problem-solving capacity” of communities. By this he refers to the inclusion of community welfare as a factor in business decision-making, rather than simply pursuing profit at the expense of social welfare. By promoting a wider community welfare, “food citizens” participate in activities that contribute socio-ecological benefits (Wilkins 2004, p. 269). The characteristics of activities that make these kinds of contributions are threefold. The first of these characteristics is their embeddedness in local communities, the second is the production of public goods in addition to the production of farm products, and the third is the facilitation of community economic development.

Embeddedness

Civic agriculture, as an alternative form of entrepreneurship, emphasizes local food systems as

a livelihood strategy. These are locality-based markets established through direct sales to consumers. Examples include community gardens, farmer’s markets, community-supported agriculture (CSA), box schemes, and preordered and bulk meat purchases, among many other innovative production and distribution strategies (Lyson 2004). These strategies are designed to promote community social and economic development in ways that commodity agriculture, which participates in global-scale markets, does not (Lyson and Gupitill 2004). Civic agriculture accomplishes this through economic short supply chains premised on trust, transparency, and reciprocity. Because of the multiplier effect of local economies, the kinds of enterprises that are most likely to promote economic development are those that connect producers and consumers through direct marketing or locality-based food processing and procurement.

Public Goods

According to Wright (2006), civic agriculture “exists *between* market and society” (p. 226, emphasis in original) and incorporates social welfare into its bottom line. As such, civic agriculture lends itself well to the embedding of social needs into economic activities of localities (DeLind 2002). In other words, civic agriculture connects farming and its benefits to a place and its residents, rather than externalizing them. For example, in Trauger et al. (2010), women farmers in Pennsylvania used the farm as a site to produce food, but also to meet social needs, such as safe after-school spaces for rural at-risk youth or as a site for the production and processing of Halal meat for immigrants in the community. Most farmers in the study also provided public education through direct physical engagement with the practice of farming. This is part of what DeLind (2002) calls civic agriculture’s “purposeful and enlightening public obligation” (p. 219).

Community Development

Civic agricultural enterprises contribute to community public goods by promoting “agricultural literacy” through cultivating place-specific knowledges (DeLind 2002). For example, Saldivar-Tanaka and Krasny (2004) suggest that

urban gardens in Latino communities function as critical sites of education, empowerment, and community participation. They identify the garden as a “participatory landscape” which provides critical connections to heritages lost through immigration, and this function is perhaps more important than its role as a site of food production. Another way civic agriculture promotes community development (and meets social needs) is through farm-to-school (FTS) initiatives, which are increasing in popularity in many urban and some rural communities. The high obesity rate among youth is an increasingly prevalent problem, and the poor food environments of public schools are implicated in this trend. Bagdonis et al. (2009) studied FTS projects in Pennsylvania to determine whether and how the community problem-solving dimensions of civic agriculture can contribute to successful FTS programs.

Civic Agriculture Debates

In positioning civic agriculture in opposition to (or at least the opposite of) industrial agriculture, theories of civic agriculture establish an unhelpful binary, in which civic agriculture is good and industrial agriculture is bad. Thus, a central criticism of civic agriculture revolves around the way certain aspects of it have been idealized. A common criticism of civic agriculture is the way it normalizes market relations and overlooks the inequities inherent to capitalism. Thus, justice issues rise to the fore in criticism of civic agriculture, especially with regard to the social, economic, and geographic marginalization that many farmers face. Related to this, civic agriculture also normalizes the social relations at the household scale in small-scale family farming models. Research investigating gender relations in civic agriculture indicates that family farming may not be the only avenue toward producing public goods via agriculture.

Market Relations

DeLind (2002) cautions against conflating local agriculture with a universal public good,

especially considering that production and consumption of local food still contribute to capitalist social relations. Hinrichs (2007) distinguishes between approaches that emphasize opposition and “defensive localism” and those that emphasize “civic renewal and redemocratization” (p. 6). Similarly, DeLind argues that (2002) local food systems cannot simply pursue alternative marketing strategies to be civic. In her view, civic agriculture must be “embodied” or material and explicitly “public” or collective. DeLind (2006) argues that agricultural activity in public spaces can foster “soil citizenship” where community members can have a stake and role in meeting social needs through agriculture. The material benefits and consequences of civic agriculture are a product of the physical work of farmers and material exchanges between farmers and consumers. As such, simply buying and selling food in a local market is not enough. A mutual stake in the risks and costs of production, through, for example, a work share in a CSA, is required for agriculture to be truly “civic.” Given this criticism, theories of civic agriculture may need to incorporate some of the discourse of food sovereignty into its framework, which explicitly call for the transformation of social relations.

Justice Issues

Simply connecting producers to consumers in direct marketing relationships does not automatically create a wider public good, and many are concerned about the implications of equating production and consumption with citizenship. Hinrichs (2000) points out that power and privilege are not evenly distributed in the locality-based food systems and there are power- and class-based inequities in local food systems between consumers and producers. Brodt et al. (2006) further suggest that while some farmers are actively engaged in community development, many sustainable and conventional farmers are socially and geographically marginalized in their communities. Thus, civic agriculture needs to consider the implications of suggesting that all industrial-scale businesses do not contribute to a wider public good and perhaps expand or revise the definition of civic agriculture to more

accurately capture the unique contributions of some small-scale businesses. It is also necessary to consider that relatively less affluent and time-poor small-scale producers may have their own quality of life decreased in the pursuit of the public good for others.

Gender Relations

Many of the institutions promoting agriculture continue to adhere to the agrarian ideal of family farming, which assumes rather rigid gendered divisions of labor and decision-making on the farm. Thus, many farm women identify themselves, and others commonly associate them, with social reproductive (versus economically productive) roles. Civic agriculture, according to Lyson (2004), is also similarly laudatory of small-scale family-based business models without paying any explicit attention to gender or the roles of women. Research on civic agriculture models, however, suggests that women farmers, when the sole operator or business partner in a farming operation, tend to support and develop enterprises exhibiting civic agriculture characteristics (Trauger et al. 2010). This research shows that the marginalization that women farmers face and their socialization into caregiving roles in rural communities may actually contribute to their community conscience and desire to contribute to the problem-solving capacities of their community. Thus, theories of civic agriculture need to take into account the household-scale dynamics of the kinds of small farm business it tends to promote.

Future Research Directions

While civic agriculture narratives are clear in their criticism and the discursive construction of solutions to the problems in local food systems, less clear in these accounts are the actual processes required to create interdependence within communities and generate public goods through agriculture. A problem with theories of civic agriculture lies in identifying the specific mechanisms through which these benefits can be produced, and how characteristics of the farmers themselves (such as gender) can condition the

production of benefits. Additionally, civic agriculture tends to see state or capital as driving problems in the food system, either through federal policy or global markets or some combination of the two. Thus, productive new arenas for research on civic agriculture may incorporate contributions from political and social theory to understand citizenship, political economy, and sovereignty.

Citizenship

If civic agriculture is fundamental (however problematic) about public goods, community development, and citizenship in rural communities, then it stands to reason that understanding how and where small business owners and consumers contribute to democracy is a productive research direction for civic agriculture. The kinds of citizenship identified and advocated by theories of civic agriculture require analysis (as opposed to description) of the political imaginaries that constitute its “food citizens.” Citizenship is coproduced through the repeated performances of individuals and communities across space and time, and citizenship itself is a mutable and potentially subversive category. While we understand that alternative forms of belonging and allegiance operate in civic agriculture, less well understood are the ways these citizenship forms work in liberal democracies; the implications of food citizenship for national citizenship (and vice versa); and how, when, and where these political imaginaries and subjects are created.

Political Economy

Market relations are implicit in many of the forms of civic agriculture identified by its theorists and practitioners. While there is widespread public agreement on the purported benefits of small businesses to communities, theories of civic agriculture fail to identify whether and how local food systems do or do not transform the inequities of capitalist social relations in rural communities. Additionally, many of the methods of practicing civic agriculture involve either modified capitalist relations (i.e., CSAs) or the decommodification of food (community gardens), and are not small businesses at all. What role do these

transformations of social relations play in civic agriculture, and might they be more productive of public goods than small businesses? Trauger and Passidomo (2012) identify “postcapitalist politics” in local food systems as central to promoting civic agriculture enterprises and, as such, constitute a productive framework for future research.

Food Sovereignty

Civic agriculture takes issue with both the state in its policies and the market for its global reach. At the same time, civic agriculture appeals to the market to redress social inequities in rural communities. Political theorists suggest that the state and market are not easily extricated and that appeals to the state or the market for solutions must contend with both. Food sovereignty as a set of spatial and territorial strategies to contest state and capital control of food and agriculture, and promote democracy and autonomy in the gaps that exist in state/capital sovereignty, rejects state or market solutions and appeals to direct action instead. Community-based agriculture on squatted land; community distribution centers; seed-saving collectives; non-commodified food exchanges; and/or food production, consumption, and distribution practices that fall outside juridical structures all contribute to civic agriculture’s aims, but also challenge its central assertions about small businesses. Food sovereignty may thus produce some helpful allies to civic agriculture, but may also shift its core definition to include direct action and non-commodified food exchanges. Research on the relationship between food sovereignty and civic agriculture thus constitutes an emerging area of inquiry.

Summary

Civic agriculture is a term used to capture entrepreneurial activity on farms that is designed to foster community development, economically embedded activity, and public goods. Local food systems are central to civic agriculture’s descriptions of a future of agriculture in what community and social needs are taken into account. Research on civic agriculture has

shown how community-scale partnerships, such as farm-to-school initiatives, could contribute to economically viable farming enterprises as well as public goods such as better food environments in schools. However, critics are concerned about the centrality of market relations to civic agriculture and question the assumption that consumption equals citizenship or that small businesses generate equity. Future research directions may include revisiting the theory of civic agriculture to accommodate non-market relations as well as broader social justice issues in rural and urban communities.

Cross-References

- [Agricultural Ethics](#)
- [Economy of Agriculture and Food](#)
- [Farms: Small Versus Large](#)
- [Food and Place](#)
- [Local and Regional Food Systems](#)
- [Public Institutional Foodservice](#)
- [Slow Food](#)
- [Sustainability of Food Production and Consumption](#)
- [Urban Agriculture](#)

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and about obligations to those worst affected, as well as to future generations. Scientists overwhelmingly concur in accepting the evidence for these, although they may differ about the speed and extent of developments.

Donald Brown (Associate Professor of Environmental Ethics, Science, and Law at Penn State University) argued in July 2010 that:

- (a) Climate change must be understood as an ethical problem, a fact that requires that scientific uncertainties about climate change be approached in a precautionary manner by those who are tempted to use scientific uncertainty as an excuse for putting others at risk.
- (b) The consensus position on climate change science is entitled to respect, despite some scientific uncertainty about the timing and magnitude of climate change impacts.

As evidenced elsewhere in this volume, there is a long history of analysis and of discussion about the ethics of food, its production and distribution, and their impact on society and nature. Recently there has developed a growing body of discussion and analysis of the ethics of climate change (Bell 2010). There has, however, been relatively little focus, so far, on the ethical implications of the specific impact of climate change on food or of food production on climate change.

Climate change has been described as a “wicked problem,” complex, uncertain, and contradictory in its impacts and in its practical and ethical imperatives. All people are both responsible and vulnerable, although to varying degrees, and the cooperative action of all (despite conflicting interests and rights) both locally and globally will be needed to confront the threats, including those to food production and prices, and the danger of spreading hunger.

Climate Change, Ethics, and Food Production

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Synonyms

Global warming; Greenhouse emissions

Introduction: Wicked Problems

There has been much public debate about the reality and about the human responsibility for the greenhouse gases that cause global warming

Climate Change

Warming

The IPCC (International Panel on Climate Change) fourth report stated in 2007 that the anthropogenic (caused by humans) warming of the climate system was “unequivocal.” The first decade of the new century now ranks as the

hottest decade globally on record, with a further rise of up to 0.19° since 1995, according to the British Meteorological Office, using monthly measurements from over 3,000 weather stations around the world. Pittock (2009) demonstrates that this warming (unlike that in earlier historical periods) is not due to natural changes, such as in solar activity, sunspots, etc. Plants, animals, birds, and butterflies have been responding to changes in climate zones and seasonal dates, progressively moving their habitats and breeding grounds towards the poles, since the mid-twentieth century.

There is clear evidence that climate change has already been speeding up. The Australian CSIRO (Commonwealth Scientific and Industrial Research Organisation) *State of the Climate* report in March 2012 noted that each decade since the 1950s had been warmer than the previous one, with most of the heat concentrated in the oceans. Thermal expansion had caused global sea levels to rise 210 mm above the level of the 1880s, growing almost twice as fast between 1993 and 2011 than during the entire twentieth century. Evidence from satellites indicated that Arctic ice was melting faster in 2011 than the record-breaking speed of 2010, adding to the rising sea levels. The researchers had no doubt that this was caused by anthropogenic global warming and not by any natural weather variability. Such rates indicate the Arctic could be ice-free in summer well before mid-century, 40 years earlier than had been anticipated by the IPCC in their 2007 report. In August 2011 a crew was able to row a boat, for the first time, through clear water to the magnetic North Pole.

When unusually cold and wet weather in the northern winters of 2011 and 2012 spread public doubts about global warming, scientists were able to demonstrate how changing deep ocean currents and polar winds, linked to the rapid melting of Arctic sea ice, had produced a localized regional cooling despite continuing overall warming.

Rising Greenhouse Gases

Much is known with confidence by climate scientists about the mechanism, first proposed in

1822 by Fourier and quantified in 1898 by Arrhenius, which links increasing anthropogenic greenhouse gases in the atmosphere to global warming. In January 2006 a British Antarctic survey, analyzing CO_2 (carbon dioxide) in air bubbles in crevasse ice in the peninsula, reported it had found that recent levels were higher than any in the previous 800,000 years. The speed of the recent rise, from 280 parts per million (ppm) before the industrial revolution to a provisional estimate of 393 in 2012, is unprecedented. Measurements carried out annually since 1958, in the unpolluted atmosphere at Mauna Loa, show the rise has accelerated, from 1 % a year in the 1980s to around 3 % by the end of the “noughties,” as energy use in developed and developing countries continues to rise. The *State of the Climate* report estimated that global carbon dioxide emissions grew by 5.9 % during the 12 months of 2009–2010, drastically reversing the small decline of the previous year.

Growing Scientific Consensus

As a result of the accumulating data and confidence of climate science since the 1980s, there has been a growing world scientific consensus about the reality of global warming, its likely human causes and long-term risks, and, more recently and hesitantly, about its current impacts. While in 1995 most scientists surveyed (other than specialist climate scientists) believed the effects of global warming were still far away, a decade later only a few doubted they were already becoming manifest.

In July 2005 the heads of 11 influential national science academies (Brazil, Canada, China, France, Germany, India, Italy, Japan, Russia, the UK, and the USA) wrote to the G8 leaders warning that global climate change was “a clear and increasing threat” and that they must act immediately. They outlined strong and long-term evidence from direct measurements of increasing ocean and air temperatures and from rising average global sea levels, retreating glaciers and changes to many physical and biological systems.

Despite the failure of the global conference in Copenhagen in 2009 to agree action on climate

change, a new push by sceptics and a public opinion distracted by problems in the global economy, no decline in concern has occurred among scientists themselves. Delegates from 62 academies to the April 2010 meeting of the Inter-Academy Panel – the global network of the world’s science academies – were asked what global issues concerned them most, “looking ahead to 2020.” By a substantial margin, climate change ranked first among scientists from both rich and poor countries. In May 2010 a letter signed by 284 members of the US National Academy of Sciences was published in *Science* (DOI: 10.1126/science.328.5979.689) claiming that:

There is compelling, comprehensive and consistent objective evidence that humans are changing the climate in ways that threaten our societies and the ecosystems on which we depend. (pp. 689–690)

A study by Stanford University, published in *Proceedings of the National Academy of Sciences* in June 2010, surveyed the top 100 climate researchers in the world and found that 97 % of them agreed with the IPCC’s 2007 assessment of the reality and human causation of climate change.

Climate Change and Ethics

Attribution of Blame

This is not straightforward. All emissions travel right round the world so there is no direct relationship between the location of cause and of effect. Developed countries are responsible for by far the most greenhouse gases accumulated in the atmosphere, but China has now become the largest emitter in total and with fastest increase (though still with much lower levels per capita). Other large developing countries such as India and Brazil are catching up through rising energy use and meat consumption and deforestation. Deforestation is propelling Indonesia to the top emitting ranks, and rice production in flooded Asian paddy fields creates methane. On the other hand, the footprint of Britain’s imported food is surely their responsibility, and while Australia’s small population is not directly responsible for much greenhouse gas, the country

benefits from being one of the largest exporters of coal (and also of beef) in the world.

Nature knows neither malice nor justice. Impoverished Bangladesh and Nepal are particularly vulnerable to rising seas or melting ice, although they have contributed little to the cause, but London and New York could in the future also be flooded, and if the Gulf Stream ever fails, it is rich north European countries that will suffer, reverting to cold temperatures like those of the same latitude in northern Canada.

Short-Term and Long-Term Ethical Priorities

There is a human obligation to offer immediate help to victims of disaster and poverty and also a responsibility in justice to offer timely assistance and refuge, and perhaps also compensation, to those struck by the results of our collective actions. On the other hand, long-term issues of intergenerational justice also call for major costly mitigation measures to slow and halt, or even reverse our greenhouse emissions, even if their impact will occur to people unknown, in a distant future. In these choices, effectiveness may conflict with the equity claims of today. The rights as well as the short-term interests of ourselves and our children may conflict with the needs of many future generations or the survival of other species.

The need for immediate mitigation cannot be ignored. There is considerable uncertainty in the projections and scenarios, but many climate scientists believe the IPCC is underestimating the window of time still available for remedial action. Some climate scientists have estimated that effects might move up smoothly as temperatures rise by 3–4°. Beyond that it could shift rapidly to 7° and more, with irreversible catastrophic consequences.

The unpredictable dangers of sudden irreversible tipping points mean that mitigation may soon be too late. As oceans absorb CO₂, they become more acidic, and this reduces their future ability to absorb more. As ice melts the exposed dark surface ceases to reflect back the sun’s rays into space and the newly exposed frozen methane evaporates from the tundra. As temperature rises, forests burn and release their carbon.

Such effects are particularly hard to quantify or predict and have not been factored into IPCC assessments of what constitutes a dangerous level of greenhouse gas or of temperature.

Food, Climate Change, and Ethics

Threats to Food Production from Climate Change

Demographers are projecting a human population of nine billion by 2050, while dramatic changes in ocean and atmospheric currents, precipitation, and temperatures would significantly worsen the opportunities for feeding them all, even on the most optimistic scenarios.

Shifting climate zones, ecosystems, and weather patterns are already manifest and will increase. There is a potential loss of melt water from the Andes and the Himalayas to rivers essential for food production for many millions in South America and in China, while droughts in East Africa may threaten the sources of the Nile. There is evidence that some of the world's major underground aquifers are becoming exhausted (*New Scientist*). Salination from rising seas is already evident in Bangladesh and Pacific Islands. Floods elsewhere, such as the record-breaking rains covering much of southeast Australia in March 2012, cannot be simply redistributed to areas lacking rain.

Ocean acidification is threatening fish stocks. Canadian scientists reported in *Nature*, in July 2011, a strong link between higher sea surface temperatures and a major decline, since 1950, of around 40 %, in phytoplankton which forms the basis of the marine food chain.

IFPRI (International Food Policy Research Institute) argues that the successes of the green revolution of the 1960s led to complacency and declining investment in agricultural productivity. Although numbers of hungry and malnourished in the world declined until the 1990s, they have again started to rise, and to feed the projected world population, a new wave of innovation and investment is needed.

IFPRI models show the negative effects of climate change by 2050, under IPCC, NCAR

(National Centre for Atmospheric Research), and CSIRO scenarios for temperature, evaporation, and precipitation, unless dramatic action is taken. With expected global average temperature rises by then of about 1C, yields in developing countries would decline for the most important crops especially for irrigated crops in South Asia. Price increases would affect rice, wheat, maize, and soybeans with higher feed prices for meat. Calorie availability in 2050 would decline relative to 2000 level throughout the developing world, increasing child malnutrition by 20 % relative to a world with no climate change (2009, 2010).

David Lobell reported in *Nature*, in March 2011, on trials showing African maize yields were particularly sensitive to the number of very hot days, which had been increasing faster than average temperatures. He predicted a rise of 1C would reduce yields across two thirds of the maize-growing region of Africa, with losses of 20 % or more by mid-century.

IFPRI thinks such changes might conceivably be offset and made “manageable” by well-designed investments in land and water productivity. However, after mid-century, the climate change challenges to food and water would become much more severe, with global average temperature rises between 2° and 4°. “Starting the process of slowing emissions growth today is critical to avoiding a calamitous post-2050 future” (IFPRI 2010, pp. xx, xxi).

Climate extremes producing disasters such as floods, storms, droughts, and heat waves that can impact heavily on global food production and prices have become more common over the last half century. Some scientists are beginning to demonstrate that anthropogenic greenhouse emissions have contributed significantly to the frequency and intensity of specific disasters such as the Russian heat wave and drought of 2010. This led to an embargo on food exports which played some part in the global rise in food prices, which in turn was one of the causes of the “Arab Spring” revolts. Similar attribution is being claimed for the return of drought to east Africa in 2012.

Increasingly sophisticated model projections indicate these dangers will inevitably grow

significantly by mid-century, as many greenhouse gas concentrations are already “locked in” to the atmosphere and deep oceans, and will dissipate only over centuries and millennia. These will cumulate further as humans continue to emit. The mechanisms are well understood. Nonetheless, the high degree of natural variability, the difficulty of disentangling multiple complex natural and human causes, and the limited long-term data for rare extremes have made most scientists hesitate to predict or attribute causation for specific, already manifest, disasters. However, detailed case studies are beginning to trace such a direct causal chain from human actions to harm already done.

Threats to Climate from Food Production

In 2009 the Carbon Footprint of Nations index, by the Norwegian Institute of Science and Technology, calculated that all food production contributed 20 % of global greenhouse gas emissions from goods consumed. This included, among other sources, the carbon dioxide emitted by fuel, the nitrous oxide that is emitted by manure, and fertilizers and the methane produced by decaying vegetation in flooded rice paddies and most important by the belching of ruminant animals such as cattle and sheep (both grain and grass fed). Methane and nitrous oxide are far more powerful greenhouse gasses (measured in CO₂ equivalents) than carbon dioxide, although they decay more rapidly. Rising world consumption of beef is one of the most important accelerators of climate change.

Ethical Responses

There are many alternative approaches to mitigating the dangers of climate change and preparing to adapt to its consequences. All have winners and losers and associated costs and must accept a substantial level of uncertainty. There is no simple factual calculation nor ethical Ariadne thread to guide us through this labyrinth. A simple economic cost-benefit analysis will not be appropriate because such analysis always discounts the future and cannot take into account our long-term obligations to our descendants and to the diversity of life on earth. Ethical first

principles will often also need to be compromised. The global nature of the causes, vulnerabilities, and actors mandates choices that evoke trust in their fairness and further cooperative rather than confrontational approaches.

Choices and Policies

The Case of Biofuels

The production of biofuels, using as feedstock mainly maize in the USA, sugar cane in Brazil, and palm oil in Asia, was initially fostered by government subsidies and quotas in order to advance national energy self-sufficiency and farming interests. Their production has been growing rapidly over the first decade of the century. Maize ethanol produced in the USA went up from 175 m gallons in 1980 to 9 bn in 2008, about half of the global total. Biofuels have been increasingly presented as also a readily available and economically viable alternative to fossil fuels and, as such, now claim the moral high ground, despite their encroachment on agricultural and rain forest land.

Biofuels have been blamed for between 5 % and 30 % of the spike in global food prices in 2008, as well as their recurrence in 2010. Researchers have pointed to other factors including poor harvests, perhaps due themselves to climate change, low stocks, and especially to the explosion of global speculation leading to bubbles in food and oil commodity futures. There is little doubt, however, that the growth in biofuel cultivation made some contribution and that if this were expanded to meet future decarbonization targets, its effect on food supplies and prices could be substantial, hurting worst the poor around the world.

Does this then have to be a choice between immediate concerns about exacerbating world hunger and long-term ethical imperatives to protect future generations from climate change? If so, then surely immediate life sustaining food production might have a strong claim to priority. The global rise in food prices was one element in provoking riots and revolts in many countries. An expanded pragmatism would indicate the need to

avoid mitigation policies that could undermine any global unity of purpose in the face of climate change. On the other hand, if biofuels on arable land were indeed indispensable to mitigation, then the ethical dilemma might become unresolvable.

There are, furthermore, many important empirical questions. On the one hand, some maintain that current global food shortages are only due to maldistribution, waste, and inefficiency or to the diversion of crops to animal feed for growing meat consumption in wealthy and developing countries. Enough food they say could be produced on less land with improved cultivation or genetic engineering.

On the other hand, it is suggested that biofuel cultivation is itself responsible for significant greenhouse emissions, through forest clearances and the annual burning of cane fields. Recent satellite images showed that the latter is much more extensive than previously accounted for. It has been estimated that most biofuels used on UK roads do not meet environmental standards for water use, soil protection, or carbon emissions. A European commission study has found that when everything is calculated, many biofuels are as bad as crude oil; indeed palm, soya and rapeseed oil were worse. The most substantial advantage was for second-generation (2G) non-land-using ethanol and biodiesel. Such “win-win” fuels that do not compete with food production are in the pipeline, using feedstock based on saltwater algae or on desert jatropha and agave plants or on crop waste and biomass.

Arizona State University researchers say commercial algae farms are much more productive than cultivation for ethanol on arable land. All US biofuels could be replaced by algae oil on 800,000 ha of desert, allowing 16 million hectares of cropland to be planted with food, although considerable investment in pipelines would be needed. Major airlines and shipping companies are investigating a switch (Guardian Weekly).

It is claimed measures to shift government support to these alternatives could help mitigation without damaging food supplies and prices.

Changing Agricultural Practices

Agroforestry, as one example, is a natural resource management system that combines woody perennials with herbaceous crops and/or animals, either in some form of spatial arrangement or temporal sequence on the same land. It thus combines elements of both agriculture and forestry, producing increased overall yield, better water quality, optimization of capture and use of scarce rainwater, and improved habitat for both humans and wildlife, and it can improve soil biota and fertility. In more recent times, agroforestry has been being considered as one of the strategies towards climate change adaptation. In 2006 the International Food Policy Research Institute calculated that it could sequester five times more carbon from the atmosphere than ordinary croplands. They estimated that by the year 2040, agroforestry farms could sequester nearly 600 million metric tons of carbon globally compared with about 120 million metric tons for cropland (Tolentino et al. 2010).

Another proposal seeks to learn from what is being discovered about the making and use of biochar, or *terra preta*, over wide areas of the Amazon basin, for thousands of years, by pre-Colombian farmers. The carbon extracted from the atmosphere by plants normally returns there again. However, with biochar, a sealed nonpolluting pyrolysis converts plant and other organic waste, including straw, into a nonbiodegradable charcoal that can remain permanently in the soil, adding significantly to its fertility. The Australian CSIRO thinks the idea is promising but in need of more research on its suitability for different kinds of soil, on how much carbon might be removed, and on how much waste it could reprocess. A number of pilot projects are in the pipeline (Flannery 2010).

Changing Consumer Choices

Individual consumers are unlikely to have the relevant knowledge or power to affect fuel and food production methods. There are, however, also some relatively easy individual decisions about the food humans eat that may have immediate and far-reaching impacts.

The United Nations FAO (Food and Agriculture Organization) reported in 2006 that livestock generated 18 % of global greenhouse gas equivalents (including CO₂, methane, and nitrous oxide), which was more than the transport sector. As global population increased and major developing countries became richer, global meat and milk production was projected to double by 2050. A US study found reducing “food miles,” by choosing only local products, would have far less impact on emissions than even a relatively small dietary shift away from red meat and dairy foods. The Garnaut report estimated that while beef contributes more than half of all global warming from agriculture, poultry contributed only 1 %.

It is unlikely that many could be persuaded to adopt a vegan diet, but slight changes in ordinary food selections could have significant impact. If many people decided to choose egg and bacon for breakfast, more often than beef sausages, fish and chips or chicken nuggets for lunch more often than beef hamburgers, and substituted roast chicken or turkey for roast lamb or beef on Sundays, the impact on greenhouse gases could be substantial. Ruminant meats could be kept as a treat for special occasions. Such choices would have the dual benefit of reducing greenhouse gases and increasing global food production.

Other Ethical Debates

There are many other long-established ethical questions linked to the production, distribution, and consumption of food, where climate change exacerbates or complicates the issue. Some of these are discussed at greater length in other sections of this encyclopedia. Sometimes one or indeed both sides in longstanding debates can find new arguments in the need for climate change mitigation or help in adapting to its impacts.

Large hydroelectric projects, long contested for their effect on wilderness and on local people, find additional positive arguments in providing clean energy for developing countries in Asia, South America, and Africa. They can also, however, sometimes severely affect water flows downstream, exacerbating impacts from climate

change on agriculture and fishing. It is claimed lakes on the lower reaches of the Yangtse are already drying out, threatening a dust bowl, because the Three Gorges dam blocks the water flow. Droughts and the drying up of glaciers may also interfere with the generation of hydroelectricity.

There are longstanding debates between supporters of local community autonomy and of unimpeded national or global markets. Advocates of *locavore* practices (eating local produce) in Europe have long been in conflict with opponents of subsidies and tariffs that can exclude farmers in poor African countries from global markets. The new argument about the damage caused by the transport emissions of “food miles” is countered by those who point to how trade in food reduces waste and how agriculture in sunnier climates has a smaller carbon footprint.

Research and investment are already ongoing into much-needed drought-resistant, more productive seeds that need less water and nitrogen fertilizer, but they confront opposition to genetic modification and to exclusive corporate patents. China is engaged in selective breeding of “green super rice” which is claimed to produce more grain as well as being more resistant to droughts, floods, salty water, insects, and disease. It is not clear to whom or at what price these might be made available.

Oliver de Schutter, the UN special rapporteur on the right to food, has highlighted the crucial importance of empowering small farmers. He questioned whether the classic green revolution prescriptions of the 1970s, involving improved seeds, chemical fertilizers, and pesticides, were viable in a world running out of fossil fuel energies and in which control over these inputs was in the hands of a few very large corporations. Both sides of this debate are extensively canvassed in special editions of *Cosmos* and *IJSIF*.

Summary

Given the scale and urgency of the need both for food and for climate mitigation, strong ethical cases might be made for priority to be given to

measures that take account of current needs and rights, on the one hand, but also, on the other, for those most effective for the long term. An accommodation through expanded pragmatism must be sought, with substantial investment and research into measures that can begin to reconcile both needs.

The precautionary principal enjoins us to tread warily and to avoid action if significant harm from it is possible, even if not certain. It has been argued as appropriate for novel human interventions in nature, such as gene technology. Unfortunately it is now too late to be of much help in mitigating climate risks. The human interventions that initiated the buildup of greenhouse gases commenced long ago, and their long-lived effects in the atmosphere and the deep oceans will not dissipate for centuries and may mean human society is already close to or past a point of no return – a precautionary inaction is not a viable option.

More research and development to avoid or counteract the risks and to try and reconcile the opposing ethical imperatives is clearly needed urgently. Climate change is indeed a “wicked problem.” “Climate change is an issue of survival, and equity is the price of survival” (Aubrey Myer, interviewed in *Nature Climate change* January 2012, p. 17).

Cross-References

- [Biofuels: Ethical Aspects](#)
- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Environmental Justice and Food](#)
- [Meat: Ethical Considerations](#)
- [Sustainability of Food Production and Consumption](#)
- [Water, Food, and Agriculture](#)

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Community-Supported Agriculture

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Synonyms

Community shared agriculture; Subscription farming

Introduction

Community-supported agriculture (CSA) is one of an array of alternative agricultural processes. Related terms include sustainable agriculture, local food systems, regenerative agriculture, alternative food networks, and civic agriculture. CSA is continually evolving as it adjusts and matures within the interstices of the global food system. Though there is increasing variation in CSA, it is essentially characterized as "... a localized food production and consumption system, organized to share farming risks between producers and consumers, practice ecologically sensitive forms of food production, and contribute to building community and educating the shareholders about agricultural processes and realities through their participation" (Feagan and Henderson 2009, p. 203). Beyond these basics, CSA operations can vary considerably with respect to such things as how and where the "share" is accessed, opportunities for "working" shares, kinds of share products available, and presence of a "core" group. Importantly, CSA is a process that gives producers and consumers an opportunity to act intentionally on values and principles that are generally not feasible within the dominant food system.

In its "idealized" form, CSA is comprised of the following common characteristics: an intentional sharing of risks by the consumer/shareholder with the farmer/producer via payment of shares prior to the farming season, which ideally

covers all real costs of production; a collaborative effort; a direct marketing form connecting consumers and producers; a means to help "localize" the food system; an ecologically responsible set of farming practices; and acts to educate consumers about this kind of farming relative to conventional food system characteristics.

Origins

CSA has its origins in two distinct though related sets of agricultural partnerships, practices, and values. The first, known as the Teikei movement (meaning partnership or cooperation), originated in Japan in the early 1970s by women concerned with ensuring healthy sources of food for their families and who initiated unique direct exchange partnership relationships with local farmers for organic food in order to do so (see Okumura 2004). The second sphere of influences are European in origin – most specifically those of German philosopher Rudolf Steiner's early 1900s anthroposophy and biodynamic farming concepts and from the German cooperative movement during this era. From this juncture, the bulk of CSA efforts both in North America and internationally are the outcome of the pioneering work of alternative food system advocate Robyn Van En in the United States. Indian Line Farm, established in 1986 in Massachusetts, is considered to be one of the first instances of CSA in the United States and was the result of efforts by Van En and others to put into practice these emerging values and beliefs. Given this lineage, the Henderson and Van En (1999) "guide" to CSA can be considered a useful and informative accompaniment to more recent CSA practice and development (though also see Groh and McFadden 2000, for their well-known writing on CSA).

CSA practice spread in distinct pockets from there, with current registered CSA numbers in the range of 1650 in the United States (see Robyn Van En Center 2014), with some organizations claiming numbers in that country on the order of 4,000 (Local Harvest 2014), and official US government sources suggesting numbers on the order

of 12,500 (USDA 2012). CSA is also increasing, though in smaller numbers, in the United Kingdom (on the order of 50), Canada, France, Japan, Brazil, Holland, Denmark, Germany, Argentina, and Australia, with more recent examples in countries like Romania and China. In this light, the interest on the part of those involved in the Teikei movement in Japan regarding recent CSA experience in the United States is indicative of the dynamic character of alternative food system efforts within the broader conventional food systems environment (Okomura 2004).

The last 20 years has seen the unfolding of what McFadden (2004) describes as “waves” of CSA development, and these waves are mirrored by a diversity of CSA research as this agricultural form has evolved and as its interest level and membership has grown. Though not exhaustive, such research and writing on CSA includes themes like health and nutrition affects, community and place concepts, guides to development and implementation, personal experiences, motivational surveys and analysis, gender, changing form and structure, adaptation to context, contribution to dietary shifts, effects resulting from membership and participation, nonmember perspectives, demographics and concerns, political-economic analyses, equity and social justice issues, and historical antecedents and ideological roots (agrarian pastoralism, Japanese Teikei, Steiner philosophical traditions, etc.). Though these are all considered appropriate research themes, this entry does not explore any of them in depth. Rather, it provides basic context for CSA, including commentary on demographic characteristics, form variations, concerns and critique, selected case studies, and on anticipated trends, referring to examples where appropriate.

CSA as Alternative Agriculture

CSA is considered variously as alternative, parallel, radical, and/or in opposition to the conventional (or industrial, modern, global) food system and is most commonly located in the so-called developed “north.” Generally, CSA is held as

a response to concerns within the conventional agricultural and food systems with respect to:

Increasing farm size and corresponding decrease in farm numbers

Aging on-farm populations and loss of youth cohort to other forms of employment and to urban areas

Loss/fragmentation of rural communities and local agricultural economies

Degradation of agroecosystems, monocultural production impacts, and related on-farm issues around species and biodiversity loss, soil compaction and degradation, erosion concerns, habitat loss, etc.

Health concerns perceived to be associated with various inputs employed – fossil fuel-based insecticides, herbicides, fungicides, fertilizers, genetically modified organisms (GMO), etc. and their perceived effects regarding diminished nutritive quality of, and contamination of, food and hence health

Consolidation of food production and ownership under the auspices of both fewer and larger agribusiness entities, with related concerns around increasing distance between producers and consumers, “commodification” of food and associated economic vulnerabilities related to international market transactions, etc.

Other off-farm issues like food miles and associated climate change concerns, structural dependency issues at the global level, and an increasingly disengaged and uneducated consumer population

CSA Motivations

Motivations associated with CSA farmer and shareholder membership engagement is often corollary to the list of concerns and/or traits associated with conventional agriculture noted above. That is, that participation in CSA is commonly a response to a set of values and beliefs that are motivated by some level of ecological, sociocultural, and/or political-economic concerns – what Russell and Zepeda (2008) in their study of the Troy Community Farm in the United States refer to as intrinsic properties. These include “. . . not

only the quality (freshness and flavor) of the produce itself, but the interactions the consumers have with the farm and CSA community and the sense of well-being or moral satisfaction that comes from supporting a system that consumers believe is good for the environment, their health and the health of their community” (p. 136). Re-embedding and the decommodification of food are the kinds of terminology often associated with these values, with studies examining farmers and shareholders generally observing prioritization of motivations as follows (see Cone and Myhre 2000; Feagan and Henderson 2009):

Healthy environment

Organic produce

Fresh produce

Local food sources

Knowledge of provenance and producers of food

In-season food

Health – personal and family

Reduction in packaging

“Community” relationship building in some form

Price

Some manner of events and celebrations

CSA Diversity and Attributes

CSA is distinctive in a variety of ways from other more conventional farming forms. CSA farm operations are generally smaller in size (7 acres on average [approx. 3 ha]) and are predominantly organic and/or biodynamic oriented in their food production methods; the operator-farmers are on average 10 years younger than their conventional counterparts and generally less experienced; see a greater percentage of women operators; farmers and shareholders are predominantly white (non-Hispanic); and shareholders are more highly educated and in higher income categories than the average consumer (Cone and Myhre 2000).

There is a range of attributes commonly associated with CSA, though this range is increasing as this farming form shifts and adapts. The most common are those with reference to the variation in size of shareholder numbers, organizational

orientation, production methods, categories of food offerings and services, food distribution methods, educational methods, participation system and practices, and others. For example, shareholder numbers vary from perhaps 10–200 (and much higher occasionally), and CSA generally focuses on agricultural produce like vegetables and fruits, though there are those which may also supply dairy and egg products, meat, honey, and value-added goods like pickled produce and preserves, and there are now also examples of marine CSA.

Some CSA traits that have emerged give rise to both academic and activist discussion and debate. For example, CSA organizational structure can be a difficult and sometimes contentious theme, as writings on operational experiences by DeLind (1999) who has researched CSA extensively helped to highlight. Decision-making themes include the use or not of a “core” member group and the choice of tasks this core group then takes on (see McFadden 2004 for shifts in the core orientation of CSA), of share prices and appropriate reflection of full costs, CSA land ownership or not, member obligations regarding farm activities and duties, access or not by differing socioeconomic groups and other social justice objectives, educational issues and goals, and the occurrence or not of celebration and special events on CSA, for example. These are often the central kinds of decision-making and operational themes raised around CSA operation.

CSA Case Studies

Case studies of CSA have raised the profile of some of the context factors – meaning site- or place-specific conditions and broadly construed influences that can shape CSA scope and character. These have become more important with regard to understanding and defining CSA in its emergence as a farming form beyond its early inception phase, as it is apparent that “... the idealism with which the early adopters set out is in practice extremely hard, if not impossible, to maintain whilst still having to operate within the wider context of a globalized and industrialized

food system” (Charles 2011, p. 363). A selection of examples here serve to provide insights into both unique and specific CSA dimensions and simultaneously, the different paths CSA has developed in the last 10–20 years.

Commitment: Issues of commitment level and the dynamic character of shareholder value orientation along with producer narratives on CSA aspirations are a continuing discussion in CSA experience and practice. Devon Acres Organic CSA with a roughly 20 shareholder average over its 20-year history, and a share comprised largely of vegetables (though meat, milk and eggs are available to buy separately), is a useful example in this regard. Feagan and Henderson (2009) used Devon Acres in Ontario, Canada, to explore the terminology of “instrumental” through to “functional” and “collaborative” support, in order to assess shareholder participation and commitment levels and the factors influencing these choices. This study drew attention to the kinds of on-the-ground pragmatics of CSA function and operation – both as a means to observe the contingencies of daily partnership issues, as well as to highlight some of the larger factors which shape individual CSA efforts within the prevailing industrial food system context. It is useful to note in this study that shareholder values generally shift over time and that in contrast to collaborative ideals, most relations between farmer and shareholders could be conceived as instrumental, with longer-term shareholder values and practices on this CSA tending to functional and occasionally into collaborative in their orientation.

CSA in China: The first CSA in mainland China – Little Donkey begun in 2008 and located in the northwest of Beijing as part of a university project there – highlights the role of dramatically changing socioeconomic conditions in that country. Such changing context is giving rise to a growing middle class whose concerns and “mistrust” around health and food are associated with an increasing perception of food production concerns in China broadly. This shift in consumer awareness in tandem with the lengthy history of what in effect can be observed as sustainable peasant agricultural traditions in China provided

the conditions within which an acceptance of a CSA form of food provision was now possible (Shi et al. 2011). Other aspects of the unique context of this case study are those attached to the uncertainties of land tenure in China and of the unknowns associated with different levels of Chinese government support of such farming models. It is appropriate to keep in mind that this is just one CSA, with around 130 shareholders at the time of the study, in a highly populated country. Notable in this case study, in the sense of its utility for examining variations in cultural perspectives on CSA, are the differences in conceptual definitions. For instance, though “sustainable agriculture” is the term used in the study, the authors observe that the corresponding Chinese term “ecological urban agriculture” (552) is only roughly equivalent, in that it is also considered to be “multifunctional,” and this incorporates aspects of agriculture that sustainable agriculture does not usually subsume in western writings on this topic.

Gender: The theme of gender also has become a recognized and sometimes contentious theme in CSA experience. This theme, raised in works like that of Cone and Myhre (2000) and Wells and Gradwell (2001), for example, have examined CSA for its gendered constructs, using the language of caring motives and practices, commonly positioned as feminine values. These “caring” attributes are frequently situated in contrast to those associated with conventional agriculture and perceived masculinized traits or values like control, competition, exploitation, and detachment. In this vein, it is notable that the proportion of males is much higher in conventional agricultural operations than that of CSA. Examination of CSA structure and operation through this lens suggests consideration regarding potential differences in the ways women develop relationships and connections, process information and manage power, and the roles and responsibilities that women assume around childcare. Though discussions regarding gender in CSA emerge variously from “essentialist,” “situated,” and “socialization” variants, such gendered points of departure help to raise the profile of questions about the

longer-term goals and farming ethics of CSA as a process relative to conventional agriculture and as Wells and Gradwell claim, to the role of care ethics in Western philosophy more generally.

Place: Another trait that some consider integral to CSA is its orientation or attachment to “place” (see neolocalism). In terms of context, place mirrors a range of site-specific attributes to which CSA is often tailored: soils, climatic and hence farming season duration, agricultural history, local community politics, key or inspirational entrepreneurial individual(s), etc., along with the objective of reducing the distance between consumers and producers more generally. This kind of place orientation trait is notable in the expression by those who see CSA as meaning: “a fundamental rethinking of the relationship among food, economics, and community, a move towards a greater degree of ecological sustainability and an attempt to partly disengage from the global supermarket and reestablish vital local agricultural economies” (Schnell 2007, p. 550). The common usage of terms like place, community, and locality in the discourses around CSA is indicative of how the provenance or geographic origin of food has become part of the place-positioning value that CSA attaches to its agricultural purpose and intentions. And this in turn is suggestive of the discussions regarding the decommodification of food through such alternative food provision venues – that food value is not just determined by its price, for instance. In this vein, it is also discernible that CSA location is often relative to certain kinds of geographic parameters like those related to areas of higher population density – an urban orientation, higher-income areas, more predominantly white populations, and to some degree, to farming areas with a legacy of smaller agricultural operations. These conditions up to this juncture have fostered a greater incidence of CSA development (Schnell 2007).

Membership Learning: Examination of motivations of shareholders and farmers on a CSA in Scotland helped to reveal the potential for elevated levels of understanding and education resulting from CSA membership and participation.

What they discerned as “graduation” effects (see Cox et al. 2008) was about how participation in this kind of producer-consumer network affords potential for broadened understanding of various aspects of the conventional food system relative to the experience of this alternative agricultural system. It is appropriate however to point out that such graduation effects occur with those members who decide to continue membership and hence are more willing or able to learn and adapt. In contrast, non-continuing members expressed less interest and/or did not exhibit such graduation effects, perceiving CSA to demand adaptation and changes in practices and attitudes which were not part of their original intentions for participation.

CSA Concerns

A number of concerns have emerged since the inception of CSA, including a variety of on-the-ground realities associated with CSA structure and operation. These include such things as:

- “Self-exploitation” of farmers and an unequal sharing of risks
- Nonparticipation on the part of shareholders
- Inequities between farmers and shareholders
- “Local” and “localism” traits associated with CSA requiring more critical evaluation
- The need to understand and evaluate CSA more clearly with respect to its role as a process within, parallel to, complementary, and/or in contrast to the conventional food system
- Lack of understanding and/or misinformation about CSA character and aspirations
- CSA place with respect to concepts of “community” and models of social interaction, civic agriculture, etc.
- Changing structure and organizational elements behind CSA: seeking effective function and stability in the midst of food system change
- Membership attrition and turnover

For example, self-exploitation of farmers is observed when CSA producers are unable to ask for and receive compensation that is reflective of the full value of their contributions in labor and effort. Generally, this means that the farmers

underprice or subsidize the shares in their CSA by not paying themselves adequately. Further, inequalities between farmers and shareholders is common and is tied to the basic observation that the shareholders are generally middle to upper class, making substantially more money than the farmers of the CSAs to which they belong. If indeed CSA has some radical or oppositional long-term objectives relative to the conventional food system, then social inequalities located on-farm suggest the extent of work still to do in moving this objective out into the broader social order.

CSA Trends: Future Directions?

Original CSA ideals have seen many changes over the almost 30 years since CSA inception in the United States (and since its earlier antecedents in Europe and Japan). This has meant some adaptation of the attributes around which it originally aspired, for instance, while still exhibiting both processes and objectives that respond to the range of concerns associated with conventional agriculture. Part of the adaptation process has been tailoring CSA practice to specific contexts as case study research has been useful in highlighting. Specific emerging issues and responses include those of land tenure in the face of increasing costs of land and developing means by which to network through collaboration and cooperation among CSAs in close proximity to one another. Others would include means to address ways to be more inclusive and socially diverse while also ensuring that CSA efforts sustain farmers economically.

Further to these ideas, CSA research and exploration have spread into geographies where CSA is only just beginning to emerge. This includes areas like Southeast Asia, China, and so-called less-developed countries, whose “locals” are just as important as the *local* around which much CSA development in the north is associated. Continued work in CSA can also benefit from better understanding of motivational characteristics of membership and such things as potential adaptation and behavior change that

can ensue from participation – by both shareholders and the farmer-producers involved.

Further work and understanding of the influence of context or situation would also provide both a sense of the realities and pragmatics behind such alternative agricultural efforts, as well as a sense of how the broadly accepted values, principles, and practices of CSA can be effectively adapted to place. Recent research on the development of CSA in China can provide some useful insights on situational and values ‘context’ attributes for example, that is unique to the largely western character of CSA examination and practice so far. And if CSA is to manifest some of the kinds of long-term outcomes contained in its alternative or oppositional role to conventional agriculture, then efforts to address member attrition rates through the development of both more effective communication between farmers and shareholders, and its corollary regarding learning about CSA, would be appropriate work towards increased longevity of membership. Finally, recognition of the still minor overall contributions that CSA makes with respect to the dominant conventional food system would be an appropriate context to which further research and implementation efforts could be situated or directed.

Summary

This entry has provided a survey understanding of CSA – community-supported agriculture – by defining its basic contours, some notes on its history and development, on its broadly shared characteristics, as well as the role of various context factors which influence and shape CSA in place. This included some observations regarding ongoing concerns and trends. Though development and differentiation over time is an important aspect of current and likely future CSA, it is apparent that the growth and interest in CSA as an alternative farming system or network within or parallel to the conventional agricultural system, by both consumers and producers, is a dominant attribute associated with this form of farming.

Cross-References

- [Agricultural Ethics](#)
- [Authenticity in Food](#)
- [Ecosystems, Food, Agriculture, and Ethics](#)
- [Farm Management](#)
- [Food and Place](#)
- [Local and Regional Food Systems](#)
- [Public Institutional Foodservice](#)
- [Slow Food](#)
- [Sustainability of Food Production and Consumption](#)
- [Trade and Development in the Food and Agricultural Sectors](#)

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Company Identity in the Food Industry

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Synonyms

Company image of food business; Food industry and communication with stakeholders; Representation of food industry

Introduction

Large-scale organizations have to respond actively to the growing competition on the economic market. One of the ways for companies to be recognized as trustful and competitive business entities is to create a strong company

identity that is highly valued by workers and stakeholders. This issue proves to be especially important in the food industry, which has to provide products and services meeting various needs and expectations simultaneously, such as nutrition, value for money, as well as security and safety. To take a broad perspective of the issue that allows for creating and maintaining the effective identity of companies representing food industry, all sensual dimensions have to be examined, paying attention to spheres of cognition.

Defining the Term *Company Identity in the Food Industry*

Company identity is understood as the sum of components shaping both corporate and organizational identity. These two concepts have both similarities and differences as far as the target audience and communication channels are concerned. Corporate identity is directed at external stakeholders and their perception, whereas organizational identity concentrates on the internal sphere, for example, the way a company is viewed by its employees (Whetten and Goldfrey 1998). Additionally, corporate identity is related to the visual aspect of company's life (Whetten and Goldfrey 1998), whereas organizational identity is more concentrated on the verbal representation (Hatch and Schultz 2000). Thus, the notion of company identity encompasses various methods of analyzing social personae at the level of business entity and takes into account both its internal and external dimensions. It should be noticed that the concept of company identity is often not observed in the course of everyday activities and standard performance, but it is rather addressed when some uncertainty appears, regarding such issues as occupation, company, or person (Alvesson 2007).

Moreover, it is often called upon in the moments of change, crisis, or risk when the common values and norms are supposed to help face some new issues. Company identity serves various functions at both the internal and external levels. Company identity is important since it

determines the way customers perceive the offered products. Internally, it gives some guidance for its employees regarding the values esteemed by the organization they work for. Additionally, company identity is visible not only in the companies with established positions on the market but also in the nascent ventures that seek investors since entrepreneurs are interested in information how the brand is perceived (Bielenia-Grajewska 2012a).

Multidimensionality of Company Identity

The concept of company identity encompasses various spheres since companies operate in changing legal, social, and cultural realities. The mentioned fluidity can be observed at both the individual and group levels, by analyzing how both worker's and company's personae have to respond to the alternating environment. Additionally, the way one perceives organizations depends on the sensual dimensions of company representation and how different senses are engaged in creating and maintaining company identity. Thus, both the environmental factors encompassing, among others, law, society, and culture and the sensual tenets connected with human apprehension and cognition determine the creation and perception of companies operating in the food industry.

Legal Aspects of Company Identity

Companies operate within a legal environment. Each country has laws governing the performance of the food industry. For example, on the US market, the guide entitled *Guidance for Industry: A Food Labeling Guide* issued by the Food and Drug Administration specifies, among others, the use of information panel, size of letters, and necessary data on producers' name and address that should be available to customers. In New Zealand, there are four acts governing the safety of food: Food Act 1981, Animal Products Act 1999, Agricultural Compounds and

Veterinary Medicines Act 1997, as well as Wine Act 2003. Moreover, the legal aspect of the food industry is also of interest to producers of food who are active in shaping the legal sphere of the food industry. One of the reasons for their engagement in food legislation is to create and maintain the competitiveness in the food industry and enhance the trust of customers in their products.

Social Aspects of Company Identity

Food companies serve various functions in a society. For example, the way a food company is presented takes into account the notion of social responsibility. The corporate social responsibility (CSR) policy in the alimentation sector is broad and diverse, concerning various issues and encompassing not only the users (customers) but also the environment the food comes from. As a result, some food manufacturers stress the ecological aspect of food manufacturing, e.g., by stating that during the process of production, they use renewable energy or environment-friendly ingredients. One of the notions often stressed in the food industry communication is the issue of food safety that entails, e.g., the protection against microbiological risks such as bacteria and viruses, toxicological risks regarding chemical substances, and other nutrition risks (Deblonde et al. 2007). Thus, such topics as guarantee, security, certification, and control are often handled in corporate communication taking place in the food industry.

A related notion in the identity of a food company is the role of regional community in manufacturing alimentation. Thus, food producers might highlight, for example, the engagement of local farmers and workers in food preparation or accentuate the appreciation for natural surroundings where the company operates. Another notion is the proper treatment of subordinates and the respect of employee rights. It entails the recognition of workers' cultural and linguistic identities. As a result, the companies that respect workers' linguistic identity can form their common company image

based on appreciation and trust that stimulates company's effectiveness and competitiveness, both on the internal and external levels (Bielenia-Grajewska 2012b).

CSR can also be related to quality through the proper selection of animals or plants for the preparation of food, and avoidance of using artificial substances or additives. Apart from the product-oriented CSR policy is the process approach to food production. The producers concern themselves not only with the final outcome but also with the processes involved in food manufacturing.

Cultural Aspects of Company Identity

People choose food products that are congruent with their system of virtues and their personal characteristics. When the product or the company violates one's code of values, then a person might not opt for the company and its products (Paasovaara et al. 2012). The same applies to respecting religious beliefs and dietary preferences in advertising, offering, and serving food.

As far as the price factor is concerned, an individual's financial situation and the perception of quality and price ratio vary. Thus, customers judge that food is cheap, expensive, or good value for money according to their personal income, individual preferences, and shopping habits. Another aspect taken into account by food companies is mood and its implication for food selection. Food is also used to stimulate social situations because it may enhance meetings with other people. Moreover, since alimentation may influence other spheres of life, companies might call attention to how they revolutionize one's cooking habits by introducing new ways of preparing dishes that make cooking more pleasant, easier, and quicker.

As far as the notion of food portability is concerned, since people use products in different moments of their life, companies often stress the size or ease of transporting various comestibles. Another issue is the convenience of packaging, including the easiness of (re)opening or (re)closing the container with food as well as its thermal features related to food storing. Food producers

stress that the merchandise they offer is low in calories, fat, gluten, sugar, etc. The other aspect is the type of meal the food is selected for since various products are consumed in many cultures at different times of the day. For example, biscuits or cakes may constitute the breakfast in some countries, whereas in the other ones they belong to the group of snacks. Thus, cultural preference should be taken into account when the food product is advertised in order to reach the target audience.

Sensual Dimensions of Company Identity

Since all of the senses influence food selection and consumption, companies will rely on the visual, verbal, auditory, olfactory, and tactile experiences of their customers and stakeholders. The simultaneous appeal to different senses may strengthen the identity of companies and stimulate customer preferences as well as the subsequent food selection and consumption.

Visual Dimension of Company Identity

The visual aspects of company identity are mainly represented in such elements as logos, packaging, websites, or promotional materials. Among various visual tools, color plays a very important role since the use of color is supposed to evoke certain emotions and reactions. For example, since black is often associated with luxury, specialty, and individuality, it is used to advertise commodities that are expensive or directed at customers searching for individual and special merchandise. Green, on the other hand, is selected for products that are ecological, natural, and sustainable. Color is also employed to associate the offered food with some emotion it should evoke; for example, red symbolizes love and passion, whereas blue denotes relaxation.

The choice of visual tools selected for advertising the food company and its products depends on the aim of advertisements or corporate materials. For example, the food company rather opts

for calm colors if it aims to stress its social or ecological activities taking place within standard business performance. However, the food producers select bright shades if they want to be viewed as dynamic or if they want to appeal to young consumers.

The other issue is the representation of group and community in food advertising. Food products can serve various functions in one's social life, e.g., they can be used in the moments dedicated to intimacy or companionship. Moreover, comradeship may stimulate food consumption; in some studies it is shown that due to the process of social facilitation, people eat more when they are in company. Thus, the motif of group participation is also applied to advertising, showing that consuming is a social and pleasurable activity. In addition, sometimes producers stress that even people who are allergic to some substances or follow a gluten-free diet can enjoy meals due to the elimination of these undesirable ingredients.

The size of containers or the meal itself also determines the food intake; if the portion is large, then people will eat more. In other studies it is stressed that the environment, such as the restaurant interior, may enhance food consumption (Stroebele and De Castro 2004). Thus, not only the food itself shapes food intake but also the surrounding (the design of shops, restaurants, or bars) determines customer preferences. Since the food coldness or heat stimulates hunger, appetite, and food preference and determines the amount of food intake, the issue of temperature is taken into account in creating corporate materials (Stroebele and De Castro 2004). This feature is also visible in the way food companies advertise their products. Meals that are supposed to be served hot are shown with some smoke or in the process of being cooked.

Additionally, the temperature of food is often linked to the functions it should serve, for example, hot tea for warming up and cold tea for cooling off. However, it should be remembered that the issue of food temperature should be viewed through the perspective of cultural differences since individuals' expectations regarding the temperature of meals vary depending on their culinary habits. The same applies to various

kitchen utensils or equipment used in advertising food products. The selection of cutlery or crockery in picturing food depends on the target group the product is directed at.

In the case of beverages, cloudiness is an issue that might be stressed. For example, wines or beers are expected to be clear, whereas cider is expected to be cloudy. The other notion is glossiness that mirrors the light reflectance of such products as cakes, apples, etc. The next aspect of color is connected with the intensity of some color related to food processing. Thus, products that are baked or cooked should possess the type of color that is usually associated by customers with the merchandise of that type (Lawless and Heymann 2010).

Verbal Dimension of Company Identity

The verbal dimension of food company identity can be observed at word, sentence, or story levels. Looking at the issue of verbal identity from the word perspective, the name of the company, being often the name or the surname of the founder, serves as the guarantee of tradition and quality. When the brand is the name of the person, the advert is often accompanied by a narrative, which explains how the company originated and how long it has been present on the market. To add, the length of words influence customer preferences and descriptive names determine post-consumption evaluations. Consequently, the dishes having longer and elaborative names are often classified as tastier or more appealing than similar products with short names (Wansink et al. 2005).

In addition, figurative language is an important tool of creating and sustaining the linguistic identity of food companies. Generally speaking, metaphors are used in business discourse since they facilitate the dialogue between companies and their stakeholders (Bielenia-Grajewska 2009), mainly by relying on well-known concepts to picture novel issues. In the case of the discussed food industry, they turn out to be useful in showing the customer some novelty in alimentation production and processing. Another explanation for the popularity of metaphorical names

in corporate communication is the fact that they are remembered easier than standard expressions (Espunya and Zabalbeascoa 2003). As a result, customers are more likely to choose the food product that has the name they know or understand or at least they can easily grasp. Among the different domains used in representing the discussed food industry, the most popular ones include magic, treasury, art, and masterpiece. Showing the food product as mystic, supernatural, or artistic may endow the offered merchandise with the aura of specialty, uniqueness, and prestige – simultaneously stressing efficiency in preparation yet distinctiveness in taste or use.

The most popular adjectives in describing a company include the following: the best, number one, top class, and leading (Bielenia-Grajewska 2012a). These adjectives are used to stress company's strong position on the market or its unique expertise visible in the offered services and products. Certain verbs are also effective in showing the long-lasting effect of using selected food products. For example, the verbs connected with continuity are used to underline the long-term effects related to nutrition or pleasure, showing that the satisfaction or nourishment is continual, e.g., takes place every day or continues even after one finishes eating the comestibles. The other aspect of using verbs in shaping company identity is connected with the use of tenses. By opting for continual tenses, the link between past and present may be stressed, showing company's role in preserving national cuisine and customer eating habits.

Numbers also convey meaning. For example, they can be used to stress the unique features of the product (e.g., 100 % of best ingredients, 100 % of satisfied customers). Numbers also play a role in informing customers on people or animals involved in producing the goods. For example, dairy products are advertised by quoting the number of farmers delivering milk or the number of cows involved in milk production. Moreover, numerical features are used to stress the fact that the merchandise is rich in some substance (100 % of the recommended dose of magnesium) or low in other elements (only 0.5 % fat, 0 % color additives).

The other verbal way of creating company identity is by using foreign languages. This linguistic method may serve different functions. On the one hand, foreign languages are used to signal the origin of the offered product or to stress its luxury or uniqueness. For example, French is used in advertising champagne or brie, whereas Italian is employed in promoting mozzarella or pizza. On the other hand, English often serves as the mark of international scopes of company's performance. Thus, campaigns may be conducted in English to reach a considerably vast number of interested stakeholders coming from different cultures. Language issues prove to be especially crucial when the manufacturers want to offer their product on the new markets. The names, slogans, and organizational communication at both the internal and external dimensions should be not only translated but also localized, taking the target culture and its expectations into consideration.

Olfactory Dimension of Company Identity

Olfactory product marketing is an important element of enhancing customers to buy certain products, and consequently, scents are used to stimulate customers' food selection and reinforce subsequent consumption. For example, the smells of merchandise available in the shop are intensified in order to make the client interested in them. This strategy is often used in coffee outlets since customers tend to buy more coffee in the shop after being attracted by its smell. Sometimes food products are used to increase the sales of other goods. For example, the scent of lemon is used in fish restaurants, whereas the scent of grass is supposed to increase the sales of dairy products (Pradeep 2010). Food scents are used in shops to stimulate the purchase by raising some thoughts related to certain memories, holidays, or important dates. For example, chocolate aroma is used for the Valentine's Day (Drobnick 2006) since the exposure to certain ambience is supposed to influence customers' food choices (Stroebele and De Castro 2004).

Another example of scent marketing is impregnating the product package with some aroma to disseminate when the package is opened (Wansink et al. 2005). The advertisements of food presented in magazines may also have the pages enriched with some food scent.

Auditory Dimension of Company Identity

Music is part of many daily life activities, including shopping and dining. It has been proved in various studies that the type and volume of sounds influence beverages and food consumption. For example, slow and soft music is used in places where eating is supposed to take long, whereas loud and quick tunes accompany fast meals (Stroebele and De Castro 2004). Music is also used to stimulate some shopping behaviors, including the songs associated with holidays.

The other aspect of auditory identity is related to the sounds produced by food in the process of consumption. For example, the sensory assessment of crackers takes into account the loudness of sounds created when the cracker is masticated by teeth. To add, the perception of crispness and crunchiness determines the customers' opinions on product quality (Rahman 2009). Moreover, sounds that accompany food preparation may also stimulate food consumption. Sonic marketing is used in some restaurants and bars where customers can not only see but also hear the process of dish preparation.

Tactile Dimension of Company Identity

Apart from the auditory experience, oral-tactile sensations determine one's selection of food products. Tactile texture can be classified into oral-tactile texture, mouth feel features, phase stages in the oral cavity, and tactile experience related to using some object (e.g., utensils) by hands. Thus, such notion as slippery and roughness of food, certain feelings related to the change of the food state in the mouth (burning, hot, astringency), and the geometrical shapes of

utensils and sensory hand tactile attributes (fracturability, firmness, spreadability) determine the food selection made by customers (Lawless and Heymann 2010). Customer satisfaction related to food consumption is also connected with the tactile dimension of the environment where the food is served. Consequently, the surface of tables as well as the chair upholstery may determine the satisfaction with the served food.

Channels of Communicating Company Identity in the Food Industry Sector

The aim of a company is to make itself outstanding on the market and to efficiently appeal to potential stakeholders. Thus, the food companies should use both traditional and new media to contact customers and attract potential clients and stakeholders. Taking into account the fact that nowadays face-to-face relations are substituted with distant (even virtual) contacts, companies have to consider other ways of strengthening the relations with customers and stakeholders. Consequently, the role of Facebook, Twitter, and blogs is becoming more and more popular in the food industry communication. The most outstanding advantage of the new media is the low cost and high speed of addressing a large number of stakeholders. Company identity is, of course, also communicated in conventional media, including advertising campaigns, signs, and promotional events.

Summary

The issue of company identity in the food industry encompasses various notions. To take a broad perspective of the issue that allows for creating and maintaining the effective identity of companies representing food industry, all sensual dimensions have to be examined, paying attention to all spheres of human cognition. At the same time, diversified communicative channels should be used in order to communicate with various stakeholders. Moreover, it should be

remembered that the importance of selected characteristics depends on the type of food company and the tools adapted for creating and maintaining company identity should take into account the needs and expectations of diversified groups of stakeholders.

Cross-References

- Food Labeling
- Food Risk Communication
- Geographical Indications, Food, and Culture

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New EU law on food information to consumers. http://ec.europa.eu/food/food/labellingnutrition/foodlabelling/proposed_legislation_en.htm

New Zealand Food Legislation. <http://www.foodsafety.govt.nz/policy-law/food-regulation/nz-food-legislation/>

Conservation Agriculture: Farmer Adoption and Policy Issues

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Synonyms

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Introduction to Conservation Agriculture

Conservation agriculture (CA) reduces soil productivity loss through several practices that minimize the alteration of soil composition and structure, including activities that reduce, change or eliminate soil tillage, and avoid residue burning so as to maintain adequate surface cover throughout the year (ECAAF 2001). The line between conventional farming and CA often blurs as conventional agriculture utilizes many practices typical of CA, such as minimum or no-tillage. However, the conventional farmer believes that tilling the soil is beneficial and would increase tillage if possible, while the conservation farmer questions the necessity of tillage in the first place.

CA maintains a permanent or semipermanent organic soil cover consisting of a growing crop or mulch that physically protects the soil from the elements and feeds soil biota. Zero tillage with direct seeding is perhaps the best example of CA, since it avoids the disturbance caused by mechanical tillage. A varied crop rotation is also important to avoid disease and pest problems. Some examples of CA techniques include (i) direct sowing/direct drilling/no-tillage, where the soil remains undisturbed from harvest to planting except for nutrient injection; (ii) ridge-till, where the soil remains undisturbed but planting takes place in a seedbed prepared on ridges; (iii) mulch till/reduced tillage/minimum tillage, where the soil is disturbed prior to planting; and (iv) cover crops, where sowing of appropriate species takes place between successive annual crops to prevent soil erosion and to control weeds.

The last several decades have seen rapid advances in the technologies associated with minimum or no-tillage agriculture and their adaptation for nearly all farm sizes, soil and crop types, and climate zones. To date, CA has been implemented on approximately 125 million ha worldwide (Kassam et al. 2012), but adoption remains slow in some regions (e.g., Africa). As such, there is considerable interest in promoting further CA adoption around the world.

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 1 The distribution of benefits and costs associated with conservation agriculture across different spatial scales (check mark indicates presence of benefit or cost)

	Incidence at various scales		
	Farm	Regional/ national	Global
Benefits and costs			
Benefits			
Reduction in on-farm costs: savings in time, labor, and mechanized machinery	•		
Increase in soil fertility and moisture retention, resulting in long-term yield increase, decreasing yield variations, and greater food security	•	•	•
Stabilization of soil and protection from erosion leading to reduced downstream sedimentation		•	
Reduction in toxic contamination of surface water and groundwater		•	
More regular river flows, reduced flooding, and the reemergence of dried wells		•	
Recharge of aquifers as a result of better infiltration		•	
Reduction in air pollution resulting from soil tillage machinery		•	•
Reduction of CO ₂ emissions to the atmosphere (carbon sequestration)			•
Conservation of terrestrial and soil-based biodiversity			•
Costs			
Purchase of specialized planting equipment	•		
Short-term pest problems due to the change in crop management	•		
Acquiring of new management skills	•		
Application of additional herbicides	•	•	
Formation and operation of farmers' groups	•	•	
High perceived risk to farmers because of technological uncertainty	•	•	
Development of appropriate technical packages and training programs		•	

Sources: Knowler and Bradshaw (2007)

To effectively do so, it must first be demonstrated that, for society as a whole, the adoption of the new technology generates net benefits (however defined). While few studies have addressed this broader social welfare aspect of agricultural technologies such as CA, it is often assumed that the net benefits are positive.

Table 1 shows the spatial incidence of benefits from adopting CA. It suggests that there may be a substantial benefit beyond the farm itself for which the farmer may not be compensated. That is, divergences appear to exist between privately appropriable benefits and national or global economic benefits stemming from an expansion of the area under CA. In agriculture sectors around the world, government policy has long sought to address such divides in an effort to boost collective benefits. This situation would appear to similarly invite the promotion of CA by government agencies. However, questions exist around the effectiveness of particular policy approaches and whether CA is sufficiently attractive to

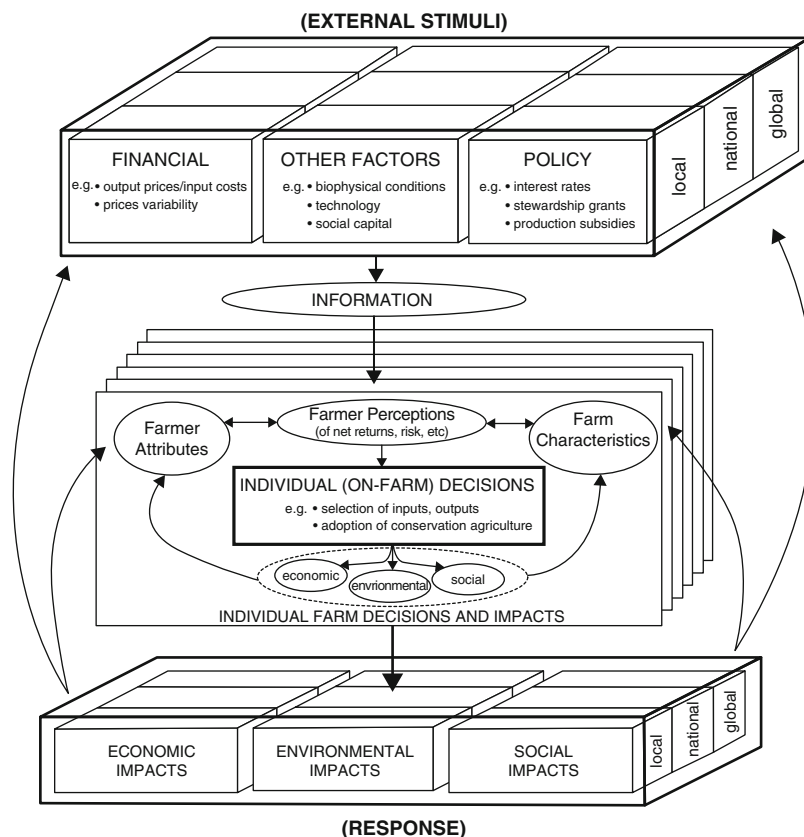
farmers and to society in some regions to warrant aggressive government intervention (Giller et al. 2009).

This question is not easily answered. The process of technology adoption at the smallholder level is complex, as demonstrated by the Fig. 1. Smallholders make choices about technology and resource use under the constraints imposed by their household and on-farm resources, as well as higher level factors at the local to global scales. Information about new technologies and financial conditions is a precursor to changes in farm practices. All these factors affect the net returns, risks, and other pecuniary elements that drive the decision-making process.

In the following sections, the financial and other factors that play upon the adoption of CA and similar technologies by smallholders are reviewed. While financial profitability can be necessary, it is not a sufficient condition for adoption as many studies have shown. More recent research has employed increasingly sophisticated

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Fig. 1 A conceptual framework for studying the adoption of conservation agriculture (Source: FAO (2001))



statistical tools to analyze the myriad influences on adoption, and some of this new research is presented here, as well as possibilities to extend research in new directions that include network analysis and social capital. Subsequently, the policy dimension is introduced into the discussion, and the various means of addressing suboptimal rates of CA adoption are discussed, considering both conventional government policy and more novel governance approaches.

Farmer Adoption of Conservation Agriculture

Financial Considerations in Adopting Conservation Agriculture

Since the seminal work of Crosson (1981), numerous financial analyses of conservation tillage have shown that typically it produces higher farm-level net returns than conventional tillage.

This is largely true because of reduced costs for machinery, fuel, and labor, combined with unchanged or improved yields over time. Beyond conservation tillage alone, a great number of soil-conserving practices typically produce net financial benefits for adopters, based on meta-analyses of farm-level financial analyses from sub-Saharan Africa and Latin America/Caribbean, as seen in Table 2.

The analysis reveals that for the sub-Saharan African and Latin American/Caribbean regions, on-farm financial analyses of CA-related practices produce a positive net present value (NPV) in a vast majority of analyses, while other conservation practices (non-CA) did so to a lesser degree. More recent research has raised concerns about the private and social attractiveness of CA under specific smallholder conditions, particularly in Africa (Giller et al. 2009). The debate around this point continues to stir controversy and is yet to be resolved.

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 2 Comparison of financial net present values for conservation agriculture versus other soil and water conservation technologies ($n = 136$)

Technologies	Total analyses	Number with positive NPV	Percent share (%)
Conservation agriculture and related agronomic approaches ^a	40	34	85
Vegetative, structural, and other management improvements ^b	96	55	57
Total, all analyses	136	88	65

Source: FAO (2001)

^aThese practices include (i) field-level agronomic practices that explicitly match the character of conservation agriculture according to FAO (2001) and (ii) farm-level agronomic techniques such as intercropping, contour farming, ridging, or strip cropping that although not formally defined as CA contribute similarly to improved soil condition

^bExamples include shelterbelts, terracing, bunding, and agroforestry

Other Considerations in Adopting Conservation Agriculture

If it is assumed that the practices associated with conservation agriculture are profitable, then their diffusion among farmers should occur on its own. However, the actual or perceived profitability of conservation agriculture can vary from place to place (Stonehouse 1995), so that there is a need to identify factors beyond just farm-level net returns that explain adoption or non-adoption. There is a long and rich tradition of research that seeks to explain farmers' adoption of particular agricultural innovations. Researchers typically select a number of potential independent variables for inclusion in their analysis based on prior theorizing and test, usually via logistic (logit) or probit regression, to determine which variables correlate with adoption in some statistically significant sense. Factors found to be important in such studies were reviewed by Knowler and Bradshaw (2007), and their findings are summarized below.

Farmer awareness or perception of soil problems is frequently found to positively correlate with the adoption of soil conservation practices

like no-till. More generally, assessments of the presence of conservation attitudes among farmers adopting conservation agriculture have revealed both positive and insignificant correlations. For example, the education level of a farm operator commonly correlates positively with the adoption of conservation agriculture practices; however, some analyses have found education to be an insignificant factor, or even negatively correlated with adoption. The farmer's age has been assessed often, but it is difficult to link to the adoption of conservation agriculture, as with assessments of "experience" that reveal both positive and insignificant correlations.

Assessments of the adoption of conservation tillage and similar soil-conserving practices have often included the biophysical characteristics of the farm itself. For example, it has been hypothesized that owners of larger operations are more willing to invest in new technologies such as direct seed drills. However, empirical studies demonstrate mixed results so that the overall impact of farm size on adoption is inconclusive. With respect to rainfall, similarly mixed results have been found. Some studies have found that the presence of soil erosion and other soil problems on a farm correlates positively with conservation tillage adoption. Related to this finding, various studies have shown that farm operations located within regions of steep slopes and erodible soils have a greater tendency to adopt soil conservation practices, but not always. Indeed, farmer awareness of, and concern for, soil erosion is probably the more critical factor affecting adoption.

Land tenure, farm income/profitability, and labor supply have garnered some attention in studies of conservation agriculture adoption. With respect to tenure, conventional wisdom suggests that owned land is better maintained by farmers than leased land. While some empirical results have supported this hypothesis, other studies have not. With respect to wealth, it is regularly hypothesized that the adoption of conservation agriculture, or indeed any new technology, requires sufficient financial well-being, especially if new equipment is required. Many analyses that have investigated the role of income and farm profitability on adoption have revealed

a positive influence. Complicating this picture is the presence of off-farm activities/income which has been found to have a mixed effect on adoption.

Without knowledge of the practices associated with conservation agriculture via some information or communication channel, adoption is improbable. Indeed, studies of innovation adoption and diffusion have long recognized information as a key variable, and its availability has been found to correlate with adoption. Information becomes especially important as the degree of complexity of the conservation technology increases (Nowak 1987). Government extension programs can do much to provide such information on CA and thereby influence farmers' decisions. As noted earlier, government programs aimed at encouraging the adoption of conservation practices among farmers can be justified by the potential divergence between the narrow interests of individuals and the broader interests of society (Pierce 1996).

In contrast, Lynne (1995) argues that farmer decision-making already reflects a compromise between private and collective utility. Producers often identify this latter interest as "the right thing to do," at least in those places where stewardship is part of the cultural norm. More generally, it has been recognized that individual actions related to the environment may reflect a society's social capital (Pretty and Ward 2001). In the broadest sense, social capital refers to the interconnectedness among individuals in society and considers relationships as a type of asset. Attributes such as "kinship," "connectedness to others," and related social capital characteristics have been argued to influence positively the adoption of conservation technology (Moore and Cisse 2005). Similarly, some analyses have identified membership in producer organizations and other social networks as a positive influence on adoption. Investigations of the role of social capital and networks in conservation technology adoption are increasing, but more needs to be done. More recent analysis of the adoption of broadly defined best management practices places a great emphasis on the role of agency and local networks of farmers or watershed groups (Baumgart-Getz et al. 2012).

In the end, the meta-analysis study by Knowler and Bradshaw (2007) found that few if any variables introduced into empirical analyses of adoption were found to universally explain adoption in a consistent way. They conclude that "it is possible that researchers have reached a limit in terms of contributing to a refined understanding of the reasons for conservation agriculture adoption" (p. 44). Instead, it is suggested that developing improved site-specific models may be a better avenue of investigation.

Problems and New Approaches in Studying Adoption of Conservation Agriculture

Some key issues arise in studying adoption behavior that have not been considered adequately in previous empirical studies. For example, how do we properly incorporate the constraints that farmers face in managing their operations (i.e., profits are not everything)? Should we be interested in *ex ante* analysis, *ex post* analysis, or both (i.e., most studies are *ex post*, but this has problems)? What about the time dimension (i.e., most studies are cross sectional and consider only a single point in time, whereas adoption is a dynamic process)? How do we explain the extent of CA adopted on a given farm (i.e., most studies only assess adoption versus non-adoption)? When the farmer faces a set of technology choices, how should we model the adoption of a given technology?

Recent analyses address some of these problems cited above but not all of them. For example, Knowler (2005) discusses methods to incorporate nonfinancial constraints in assessing prospects for the adoption of sustainable farming technologies (including CA). He finds that simple trade-off analyses can reveal important information about technology characteristics that may influence adoption by allowing the analyst to eliminate dominated or inferior choices. Duke et al. (2012) used hypothetical scenarios in a discrete choice experiment (DCE) to analyze potential adoption of no-till and several other technologies in Delaware without recourse to an *ex post* analysis of adopters. Similarly, the dynamic nature of adoption can be assessed using duration modeling developed by engineers to assess failure rates

in durable goods. Here, the rate of adoption is modeled using a regression model that relies on introduced variables to explain the observed pattern. Fuglie and Kascak (2001) used duration analysis to study conservation tillage adoption in the USA and found that adoption and diffusion of these technologies has experienced long lags due to differences in land quality, farm size, farmer education, and regional factors.

The addition of more advanced empirical studies and new perspectives in assessing sustainable farming methods is increasing our understanding of the adoption and diffusion of new technologies. But more can be done, as suggested above. For example, most adoption models consider only the “adopt/no adopt” alternatives and ignore how much area is converted to CA. Double hurdle regression models invoke a two-step nested procedure that can estimate first the probability of adopting, then the area converted to CA. Similarly, most adoption models consider a single technology that is either adopted or not, ignoring cases where farmers have choices. As a solution, a multinomial logit model can be used when the dependent variable is a set of non-ordered options and the farmer’s choice from these is regressed against a set of explanatory variables.

Policy and Conservation Agriculture

Conventional Policy Mechanisms to Promote Adoption

Governments around the world, but especially in Europe and North America, have implemented a variety of programs to encourage the adoption of agri-environmental stewardship practices including CA-type practices (see Table 3). Though a variety of mechanisms are available, financial incentives have dominated where conservation is the goal. The rationale for such assistance stems from the perceived and often real divergence between the on-farm and social benefits of conservation.

Assistance can take a variety of forms, such as tax credits on equipment, machine rentals, cost-sharing programs, and direct subsidies. Assistance is most suitable to help overcome

Conservation Agriculture: Farmer Adoption and Policy Issues, Table 3 A summary of policy approaches to promote agri-environmental stewardship including conservation agriculture

Category	Sample approach
Voluntary compliance	Stewardship agreements, education/extension services, research and development, resource centers, etc.
Economic/trade controls	Cross-compliance requirements, export bans, etc.
Financial incentives	Grants/subsidies, tax rebates, etc.
Regulations	Statutes, fines, zoning, taxes, etc.
Direct ownership/management	Public purchase, trusts, etc.

Source: Pierce (1996)

significant initial investments and transition costs and in cases where adoption is unprofitable from the individual farm perspective (McNairn and Mitchell 1992; Uri 1998). However, Nowak (1987) suggests that financial assistance may also be important where the adoption of a technology results in positive net returns for farmers. The author argues that institutional support tends to reduce the risk faced by farmers in adopting an “unknown technology” and thereby reduces their need for detailed information prior to adoption (Nowak 1987). That is, to overcome non-adoption because of onerous information demands, state support is useful. This argument is exemplified by Stonehouse and Bohl (1993), who use a model cash crop farm in southwest Ontario to show that a one-time subsidy covering 20 % of outlays would induce a farmer to convert from conventional tillage to no-till.

Instead of merely assessing the impact of one-off interventions for adoption, some analysts have sought to understand how best to promote adoption using a variety of tools in a more targeted way. For example, Uri (1998) identifies a strategy to promote conservation tillage that begins with regional policy makers identifying whether its adoption generally provides a positive or negative net return to potential adopters. Once this uncertainty is addressed, the author recommends education and technical assistance where conservation is profitable but the farmer is not aware of the technology or its profitability, or does not have the skills to

implement it; financial assistance where conservation is not profitable to the individual farmer but would provide substantial public benefits; and regulation and taxes where conservation behavior is required of all farmers, or for those participating in related income support programs (e.g., a cross-compliance measure).

From Government Intervention to Agri-environmental Governance

Alternative policy prescriptions that require less overt or direct state intervention in the agricultural sector have been increasingly identified in the literature. For example, Isham (1999) points out that parallel investment in social capital may help create a sufficiently enabling environment for the adoption of desirable practices, and this may apply strongly in the case of CA. This argument reflects a broader shift in thinking about the role of the state in society. In the agriculture sector, as elsewhere, the role of the state has begun to evolve from one of exercising direct authoritarian control to one of working collaboratively with a diverse array of stakeholders to enable preferred behavior. From a traditionally state-led and technocentric approach to dealing with agri-environmental problems has emerged a more holistic, inclusive, and empowering form of agri-environmental governance. This shift is evidenced in many examples of agri-environmental initiatives wherein participant involvement is no longer mandated from above but rather empowered from below. The Australian Landcare movement serves as a case in point, where complementarities in terms of strengths and capacities of state and community actors are capitalized upon in order to achieve conservation goals on individual properties that create public goods.

In the Canadian context, environmental farm planning has similarly emerged as an alternative approach to achieving collective goals at the individual farm level with modest public transfers. The Environmental Farm Plan (EFP) program began as a pilot project in the early 1990s in the province of Ontario. Developed for farmers by farmers, the EFP program is a voluntary environmental education and awareness program that engages farmers in a self-assessment of

environmental performance, including with respect to soil conservation, and seeks to foster a “duty of care” mentality among producers. The EFP program has been applauded on a number of grounds. In addition to enabling farmer participation in devising and implementing solutions to agri-environmental problems, the EFP program has also been extolled for its bottom-up dimension and learning outcomes. As applied to CA adoption more specifically, this approach would see governments work with civil society organizations and peer associations to create a culture of agri-environmental learning, responsibility, and action, with rewards that mix modest financial assistance with peer recognition and praise.

The “Ecological Goods and Services” Concept

Evidently, this bottom-up “duty of care” approach is not universally regarded as the only or even preferred means of enabling enhanced conservation by individual farmers. The last decade of evolving agri-environmental governance has also seen the emergence of the “ecological goods and services” (EG&S) concept, whereby environmental amenities and qualities stewarded by landowners are recast as commodities for trade (Gutman 2007; Engel et al. 2008). The concept clearly reestablishes the public good nature of agri-environmental stewardship: given that individual landowners or “stewards” are expected to bear the responsibility of meeting heightened standards of environmental protection through additional expenditures or foregone development opportunities, primarily for the benefit of society at large, these landowners must be remunerated by society. Setting questions of farmers’ “duty of care” aside, there are vexing questions of a pragmatic nature that emerge in considering what to pay landowners for the provision of ecological goods and services. How do we differentiate between private and public benefits? How do we value ecological goods and services?

Notwithstanding these challenges, programs for remunerating landowners for the provision of EG&S are proliferating. In Costa Rica, a nationwide framework of payment for ecological services is supported by the state, in large part through revenues derived from a fossil fuel

sales tax. Payments are available to landowners for the provision of water services, biodiversity conservation services, and carbon sequestration services. In Australia, “conservation tenders” are used to encourage and reward the provision of EG&S by landowners through programs like EcoTender and BushTender. Competitive bids are submitted by landowners to undertake an agreed-upon set of management actions in support of particular stewardship objectives. Throughout the world, there are many other examples of programs that reward landowners for the provision of EG&S: the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program (EQIP) in the USA, the Environmentally Sensitive Areas (ESA) Scheme and the Countryside Stewardship Scheme (CSS) in the UK, and the CAMPFIRE program in Zimbabwe.

A widely referenced Canadian example of rewarding farmers for the provision of EG&S is the Alternative Land Use Services (ALUS) program piloted in the Regional Municipality of Blanshard in Manitoba and in Norfolk County in Ontario and fully implemented in Prince Edward Island. ALUS is a farmer-driven, fee-for-service approach that offers farmers annual payments for the provisioning and enhancement of EG&S. Payments are based on land rental rates and address four landscape features: wetlands, riparian buffers, natural areas, and ecologically sensitive areas. While still in its early stages, emerging assessments point to the potential value of the ALUS approach in enhancing the flow of EG&S to society and in better recognizing and rewarding farmers for the critical role they play as environmental stewards.

While the viability and endurance of different policy and governance approaches to agri-environmental stewardship generally and conservation agriculture more specifically are open to debate, one thing seems evident: the complexity of the adoption process demands a range of approaches. Moreover, a concerted effort is needed to more thoughtfully consider the complementarities among approaches. In the words of Clark et al. (2007, p. 258), “...we should be wary of the ‘one best way’ reflex in institutional

design.” Achieving enhanced conservation agriculture adoption throughout the world will demand ongoing governance innovation among scholars, policy makers, conservation professionals, and the farm community.

Summary

For some years now, various international agencies have promoted a package of soil-enhancing practices under the banner of conservation agriculture (CA), though adoption rates remain low in regions. Many of the associated practices have been employed by farmers and studied by soil scientists for decades. More recently, social scientists have sought to understand the reasons for their adoption (and non-adoption) and the role of government policy in this process. This contribution reviews and synthesizes this area of research to understand better what explains CA adoption and to consider policy implications. The discussion begins with the case for the societal benefits of more sustainable farm technologies such as CA and highlights the arguments for and against this proposition, particularly in the context of smallholders in regions such as Africa. Subsequently, the factors that encourage or inhibit CA adoption are discussed, based on existing studies. A primary finding is that few, if any, universal variables regularly explain the adoption of CA and that efforts to promote CA need to reflect the conditions of particular locales. However, much of this research has not benefited from more advanced statistical and modeling methods, so opportunities for improved analyses in the future are reviewed. Finally, consideration is given to the possibility of enabling CA adoption through targeted policy and broader governance initiatives, most of which reinforce perceived divergences between privately appropriable benefits and societal benefits stemming from an expansion of the area under CA. Whether this perception is justified, enabling further CA adoption globally will require ongoing public contributions, be they in the form of conventional assistance measures or more novel approaches that remunerate landowners for their provision of ecological goods and services (EG&S).

Cross-References

- [Economy of Agriculture and Food](#)
- [Farmer Types and Motivation](#)
- [Sustainability of Food Production and Consumption](#)
- [Water, Food, and Agriculture](#)

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Conventionalization Hypothesis

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Introduction

Organic farming developed rapidly during the 1980s. By the late 1990, some researchers argued that the growth of organic farming had, in spite of its numerous positive consequences, started to lead to undesirable consequences as well

(Buck et al. 1997). These consequences were associated with efforts to incorporate structural elements of conventional agriculture. Scholars worried that in doing so organic farming would change and ultimately lose its alternative character.

Traditional organic agriculture was embedded in a social movement and was even associated with overcoming some traits of capitalist food production, for instance, by emphasizing the social relationship between producer and consumer (decommodification). In contrast Buck et al. (1997) expect the new organic agriculture to be restructured in accordance with the economic imperatives of commodity production. As they put it, agribusiness is entering the field and “finding ways to industrialize organic production” (p. 4). Thus, industrial organic farms introduce methods into organic farming that may follow the legal regulations governing organic farm production, but which are incompatible with organic ideology. Guthman (2004) describes organic mass production as “organic lite.” Hall and Moggyorody (2001) summarize the conventionalization scenario as follows: “Organic farming is becoming a slightly modified version of modern conventional agriculture, replicating the same history, resulting in many of the same social, technical and economic characteristics” (p. 399).

The groundbreaking article of Buck et al. (1997) sparked an ongoing debate about the empirical and theoretical validity of the conventionalization hypothesis. During that debate, however, the precise meaning of conventionalization has changed. As elaborated below, there are at least three different meanings: first, conventionalization as originally defined by Buck et al., which refers to macro changes in the political economy of organic agriculture; second, conventionalization of microlevel farming practices and farmers’ value base, usually conceptualized as differing attributes of new entrants as opposed to the organic pioneers; and third, conventionalization as a misspecification of modernization processes and consequences of more widespread adoption and diffusion of organic farming.

This entry will first review the conceptualizations of the process termed “conventionalization” and then describe empirical evidence of change in organic production in different countries.

What Is Conventionalization?

Based on an explorative commodity structure analysis of Californian organic agriculture, Buck et al. developed the concept that came to be known as conventionalization. They explicitly linked conventionalization to two important developments in organic farming: Rapid growth and the entry of new market actors: “[E]xplosive growth since the 1980s is both cause and effect of a proliferation of new entrants who are attempting to capture the lucrative niche markets lurking behind organic products and the organic label. Consequently, the field is experiencing rapid changes in production and marketing strategies, and a restructuring of economic imperatives. ... [A]gribusiness is finding ways to industrialize organic production, a process referred to in this paper as ‘conventionalization’” (Buck et al. 1997, pp. 3–4). The authors identify trends toward conventionalization in discourse, production, and marketing: The introduction of legal regulation of organic farming, emphasizing inputs over processes, in contrast with certification by grassroots-oriented agencies, encourages the participation of larger corporations interested in investing in organic food. Regarding production there are tendencies toward less diversification, with larger farms specializing in the mass production of a low number of high-profit crops, the increased use of migrant labor, changes in land use, and increased contract growing. Closely linked to the latter point are developments in marketing and distribution, resulting in Buck et al. stating that the industry “is beginning to look most like the conventional one” (p. 16). Here, they argue, power moves in the direction of large retailers. In reaction to these trends, more traditional growers may use coping strategies, such as focusing on direct marketing and

diversification and emphasizing artisanal production. This may ultimately lead to a bifurcation of organic farming, with “deep” organic on one side and industrial “organic lite” on the other side. It must be noted, however, that Buck et al. end their paper with a cautious note that their results may represent “individual cases more than clear trends” (p. 16).

Since Buck et al.’s groundbreaking study, the original definition of conventionalization – agribusiness is finding ways to industrialize organic production – has been frequently discussed, debated, and developed by scholars. For example, Coombs and Campbell (1998) point to the regional grounding of conventionalization theory and note that the “case studies have been extrapolated to form theories of change which have been advanced as universally applicable to organic farming in all capitalist societies” (p. 127). Hence, they question whether the concept provided by Buck et al. can be applied in a meaningful way to other countries with different structures of organic markets and of farming in general. In an influential paper on conventionalization, Hall and Moggy (2001) study a number of factors related to farming in Canada, including farm size and specialization, marketing, economic organization, and ideological orientations. They provide an extended operational definition of conventionalization that shifts the level of analysis to the farm(er). Following this operational definition, “conventionalization among producers would be reflected in increases in farm size, changes in the use of marketing channels, and less commitment to organic values and principles” (Padel 2008, p. 64), possibly without the active involvement of agribusiness corporations. This approach captured diffuse concerns shared by many researchers and grassroots activists and paved the way for many empirical studies. At the same time, it diluted the theoretical concept provided by Buck et al. (1997) and changed the meaning of conventionalization.

Padel (2001) interprets these changes in organic farming in connection with Rogers’ (1983) adoption and diffusion theory and thereby

provides an alternative explanation of the conventionalization process: The fact that new organic farmers differ from the organic pioneers should not be seen as a threat, but rather as a normal outcome of growth and expansion in the adoption and diffusion process. In the light of this theory, the “shift in motives, farm and social characteristics among those converting to organic farming is a typical feature of any diffusion process, and not an inherent shortcoming of those currently converting” (Padel 2001, p. 57). Organic farming organizations and advisors should therefore aim at developing information and support for the new adopters that supports the learning process during and after conversion (see also Padel 2008). Similarly, Darnhofer et al. (2010) call for “a more discerning approach to studying change in organic farming” (p. 71). They note that a farming style that is different from that of the organic pioneers does not necessarily undermine organic principles and that change is inherent in organic farming. While some changes in organic farming should rather be seen as professionalization, conventionalization would need to entail a departure from the principles of organic farming.

Empirical Evidence from Different Countries

There have been a large number of empirical studies designed to test the conventionalization hypothesis. Importantly, the initial article by Buck et al. (1997) was an empirical study that developed the theoretical argument based on an analysis of organic farming in California, USA. Using the method of commodity chain analysis on organic farming in New York, USA, Guptil (2009) finds evidence for conventionalization. Industry actors are oriented toward inputs and commodities rather than processes and systems, and they are able to participate in ways that alter the economic landscape for the whole sector. At the same time Guptil identifies a counter trend as cost-price pressures have motivated some

farmers to develop the alternative model and adopt farming and marketing practices that emphasize self-reliance and local marketing. Based on a case study of Ontario, Canada, Hall and Mogorodoy (2001) reject the hypothesis of agribusiness entering the organic sector. They do, however, find a tendency among field-crop farmers toward increased farm size, higher mechanization, and specialization on export-oriented produce.

Coombs and Campbell (1998) find that the penetration of organic farming by corporate actors in New Zealand has not led to a dilution of organic standards, but has caused organic agriculture to evolve in two directions: agribusiness relying on export-oriented production and a domestic market supplied by small-scale growers. Similarly, Lockie and Hapin (2005) find polarization in the economic scale of the Australian organic farming and note that the development concurs with only some aspects of the conventionalization hypothesis. Specifically, their evidence suggests that “there has been no conventional takeover of the Australian organic sector – at least not one that is evident in the thinking of organic newcomers. Newcomers and long-standing organic producers have more in common than the bifurcation concept allows. Indeed, both share the same degree of variability in terms of motivations and in terms of farm structure and scale” (p. 304).

De Wit and Verhoog (2007) study organic farming in the Netherlands. They find that influence of conventional commodity chains is increasing and the use of off-farm inputs is high, suggesting that organic agriculture in the Netherlands shows signs of conventionalization. However, they warn that their study “does not provide conclusive evidence for the conventionalization of [organic agriculture] as a whole” due to a lack of sufficient historical data (p. 460). In a study in Germany, Best (2008) finds that newer farms are more specialized and slightly larger than established ones and that there is a growing proportion of farmers who do not share pro-environmental attitudes. Additionally, a small number of very large, highly specialized farms have recently moved toward organic agriculture.

However, the vast majority of organic farmers, new and old ones included, show a strong pro-environmental orientation. Zagata (2010) presents a study of values of organic farmers in the Czech Republic. He identifies three groups among new organic farmers: farmers defining organic farming as a way of life, farmers emphasizing organic farming as an alternative to conventional food production, and farmers seeing organic farming as an occupation. Especially the last group shows some contradictory views, but even in this group, “being organic” is an important part of their self-description. The author emphasizes that business-oriented farmers cannot be seen as conventionalizers and the development of organic farming in the Czech Republic “cannot be reduced to binary categories in terms of a conventionalization thesis” (p. 288).

Evidence from developing countries is limited. Oleofse et al. (2011) report case studies on China, Brazil, and Egypt and find that the newly converted organic farms are business oriented and that their farming systems have not changed substantially during conversion from conventional to organic production. Rather, there is a heavy reliance on input substitution for pest and fertility management. The authors are skeptical about the orientation of the new organic farmers toward agroecology and organic principles. They state, however, that a redesign of the farm system may be a long-term goal for the recently converted farmers and that as of 2011 the organic farmers are not yet embedded in a network of organic producers. Their study provides an interesting contrast to the results of Blanc (2009), who presents a study on organic farming in the rural community of Sao Paulo, Brazil. She observes that there has been rapid growth in the organic sector as well as a broad penetration by actors with strong financial capital. Her assessment of the development of organic farming in the study region is that family farming “may be a way for organic farming to become a development lever for the millions working in Brazilian family agriculture. (...) Organic farming has restored perspectives of working and holding on to land for many families” (p. 331). The different findings of Oleofse et al. and Blanc

may be due to that fact that Oleofse et al. study newly organic farms that were isolated and not embedded in networks, whereas Blanc emphasizes collective dynamics, embeddedness, and the complex social process of conversion to organic farming.

Summary

Conventionalization is the idea that features of organic agriculture evolved to mimic those of conventional farming. There are at least three variations on definitions, depending on whether the focus is on macro structure, farm-level micro perspectives, or the adoption and diffusion of organic farming practices.

The empirical evidence on conventionalization is mixed. The most convincing support for conventionalization, as defined by Buck et al. (1997), comes from the USA. This is not surprising, since the concept was developed based on a case study of organic farming in California. In other regions, however, organic farming is embedded in a different institutional structure and, hence, conventionalization is more difficult to identify. Consequently, the concept of “conventionalization” is important for stimulating the discussion of recent changes in organic farming and for increasing the attention for possibly unwanted developments. It does not, however, provide a conclusive explanation for the development in different economic and cultural settings. At least with regard to microlevel farming practices, the adoption and diffusion process seems to provide a much better explanation of the data for most regions.

Cross-References

- [Agriculture of the Middle](#)
- [Biodynamic Agriculture](#)
- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Corporate Farms](#)
- [Farmers' Markets](#)
- [Farms: Small Versus Large](#)

- [Multifunctional Agriculture](#)
- [Sustainability of Food Production and Consumption](#)
- [Trade Policies and Organic Food](#)

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Cooking Tools and Techniques: Ethical Issues

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Synonyms

Cooking technologies; Ethical considerations of cooking techniques; Ethics of cooking; Philosophical implications of cooking tools

Cooking is the oldest of all arts: Adam was born hungry, and every new child, almost before he is actually in the world, utters cries which only his wet nurse's breast can quiet. Cooking is also of all the arts the one which has done most to advance our civilization, for the needs of the kitchen were what first taught us to use fire, and it is by fire that man has tamed Nature itself. (Brillat-Savarin 1986, p. 217).

Introduction

Cooking technology is noteworthy for ethics because the means and methods of cooking involve a product that is intended to be eaten. Food, by definition, is something to be ingested, and therefore it is to become part of oneself – part of one's being. This reveals that the ontology of the self and the world are intertwined. While a chair is an object in the world that is (and will always remain) separated from one's being and “not me,” food is an object that is “not yet me.” Food's ontology embraces the idea of potentiality, for it is not necessarily always going to be separate from me. Food is the potential me.

Cooking technologies enable one to do things that otherwise would be impossible. Were it not for tongs and long forks, grilling would be unthinkable. Oven mitts make handling hot items and vessels possible. Without a knife, one is reduced to ripping, tearing, and biting. Thus, the tools and technologies of cooking reveal the activities concerning food as involving degrees of

interaction of the self with a food item. How one chooses to cook, and with what appliances, reveals the attitudes and values one places on the involvement one has with one's food. When we pick up a bratwurst from the grill and turn it over using tongs, we are operating with an extension of our body. We can “touch and feel” the food, and we are involved in the cooking process. When we use a microwave, in contrast, there is a divorce of the self from the process and a retraction of one's self away from the food. The use of these different tools means something. Ultimately, the implications resulting from these situations reach into personal responsibility, for as the being of the individual is extended through the use of a tool (one's arm is extended through the gripping of tongs), so is one's moral accountability also extended.

The ethics of cooking technology/tool use is currently unexplored. It plays out in the arena of human interaction with/through a food-related environment. The tools, techniques, and instrumental methods which mediate (physically, mentally, emotionally) one's involvement with food are of primary importance in understanding the ethical implications of ethics and cooking.

This arena of consideration is full of potential for future scholarship and discussion. Of particular note will be the investigation of the connection between feminist philosophy and cooking technologies. As tool use in the kitchen has become more and more gadget-oriented, it has (ironically) furthered a class distinction based on gender, resulting in the loss of embodied knowledge by female cooks. Rather than liberating women to greater levels of equality, cooking technologies have resulted in the further subjugation of women in the context of the kitchen, for what “they” knew how to do by hand can now be done better by a gadget.

Why Food Matters

Philosophically, “food” is a label attached to the huge world of edible items that are then subclassed into the things one is willing to put in one's mouth and swallow. Said in another way,

while a tremendous amount of the natural world is edible, only a small portion of it is labeled “food.” The presumption is that “food” is going to benefit one in terms of physical health, resistance to disease, longevity, and general well-being. It’s both an ontological and epistemological label that identifies aspects or manifestations of “being” present in the world that one chooses to incorporate into one’s individual “being” and items that are deemed appropriate for that assimilation because of the knowledge had about them.

Humans are very selective regarding what they’re willing to eat. Food, as an ontological category, is small and relative to a number of factors, including culture, location, time period, personal history, temperament, physiological disposition, allergies, taste, and mood. Very much in play in determining what is and isn’t food is the philosophical idea of “seeing as.” Itself a combination of ontology and epistemology, “seeing as” is a way of identifying something as part of one’s conceptual framework, and as such, understandable in a particular way. To see something “as” food is to see it as not merely edible, but an edible item appropriate to incorporate into one’s own body through one’s mouth.

To see food as a physiological need is one-dimensional at best. Food is involved in one’s ontology on every conceivable level and arena – food becomes the self physically, but also emotionally, spiritually, and mentally – it has influence in social relationships (family, friends, colleagues, public), political relationships, environmental relationships, and the understanding of one’s place in the world. It is difficult to find a situation where food-oriented issues are not relevant. On the most fundamental level, food matters.

Technologies that have to do with one’s treatment of food warrant a particular kind of philosophical investigation. That investigation would involve both a careful consideration of the ontological status of food and also great sensitivity to all manners through which the food is treated in its journey to one’s body. That examination has yet to be carried out, but it could be, and the intention of this entry is to identify topics that would be involved in that project.

Technology and Ethics

Cooking technology is nestled within the larger arena of technology, and a brief sketch of the history of technology is relevant here. A philosophical understanding of technology focuses on what role it plays in one’s life. The locus of this role is not so much on what it is, but on what it does – what is the function of a technology? The primary perspective coming from twentieth-century philosophers is that technology in the form of tools is a means by which one is linked to the world. They are connections and linkages between humans and the so-called “external world.”

In serving as a connecting element, tools can be seen as mediating the experience one has with the objects that are not oneself. One of the significant implications of this view is that the mediation involved through technology influences one’s understanding and interpretation of reality. One’s perception is through the technology – it is through a telescope that one has a “telescopic” view. This perspective (of seeing technology as a mediating tool use), while certainly not the only philosophical understanding of technology, is one of the most helpful for exploring ethics and cooking technologies.

From this perspective, tools and technological objects are extensions of one’s body, but also more than that. Technology not only is a way to connect to, with, and through one’s environment but, as John Dewey held, is a way of living in and maneuvering through the world. “‘Technology’ signifies all the intelligent techniques by which the energies of nature and man are directed and used in satisfaction of human needs; it cannot be limited to a few outer and comparatively mechanical forms” (Dewey 1984, p. 270).

Technology and Ethics: Two Camps

The connections between technology and ethics are strong. As David Kaplan states, “All technologies raise implicit ethical questions. Anything humans make and do is subject to ethical evaluation about appropriate uses, acceptable consequences, and right or wrong actions” (Kaplan 2004, p. 169). This being said, there are two

basic camps when it comes to technology and ethics: either one follows the neutrality thesis, where technology is a neutral instrument, offering (in itself) no bias towards positive or negative affect, or one ascribes to the view that all technologies raise ethical questions because they necessarily involve human action and therefore are subject to moral judgment. Kaplan states that “Arguably, technology is itself moral. . . . That would mean that technologies and not just people are subject to moral evaluation. We could then speak of good-or-bad, right-or-wrong technologies and not just good-or-bad, right-or-wrong human actions” (Kaplan 2004, p. 169).

The distinction could be maintained by considering a wooden spoon. The wooden spoon itself is ethically neutral (for it is simply an object and, on its own, outside of moral consideration), but its use is ethically relevant depending on the context, intention of the user, application, and outcome of using the spoon. While it is debatable whether or not developments in technology, as such, may in themselves embody ethical issues, it is generally accepted that the use of these advances does contain moral and ethical import.

However, this distinction could be seen as simplistic, for it has been argued that technological instruments themselves may embody moral value (Kaplan 2004, p. 169; Verbeek, pp. 232–233). Certainly, technologies direct human behavior and also influence perception of the world. But also, the wooden spoon itself could contain moral elements which would be ethically relevant. The spoon could be seen as a moral object due to what it is made of, where it came from, how it was created, what it is intended for, and how many resources were used in the creation of the spoon.

One of the most influential philosophical views regarding the ethics of technology comes from Martin Heidegger. Heidegger saw technology as a means of understanding. To see it merely as a means to an end is myopic because the ways in which humans intelligently interact with the world cannot be value-free (Heidegger 1977).

For Heidegger, technology is also inherently problematic, for it is a method of transforming,

organizing, and systematizing nature in a way that allows one to view it merely as a resource. While that in itself may not be terrible, the danger involved is that if nature can include humans, then one runs the risk of being viewed as a mere resource as well. Further, since there is neither a comprehensive nor a clear understanding of the world and all its intricacies, efforts at control through technology are, at best, guesses. They are unclear and incomplete interpretations. Kaplan states, “The danger of technology (as *techne*) is that it is a partial and incomplete understanding of being; one that seeks more and more efficiently for its own sake. We interpret everything, including ourselves, as resources to be dealt with as effectively and efficiently as possible” (Kaplan 2004, p. 2).

In the context of cooking, the warnings surrounding technology and efficiency for the sake of efficiency are salient. For example, as the ways in which foods are manufactured and genetically modified to increase not only efficiency in production but also efficacy of taste, the nutritional value of the food often tends to decrease. Further, the regular consumption of hyperefficient foods (notably fast foods) is shown to be detrimental to one’s health and thus act counter to the natural purpose of food itself.

Seeing the technologies involved with food production as being value neutral would be naïve, for the result or “product” of the technology becomes incorporated directly into one’s being. The being of the other is part of one’s future being, and the technological mediation engaged cannot be free of ethical consideration. Food that causes ill health is dangerous and in some contexts could be seen as the result of immoral technology.

One of the strongest linkages between technology and ethics has to do with intent. As long as technology carries with it the activity of design, and design involves intent/purpose, then an element of normativity is involved in the creation and use of technologies. Objects that are created are created for a purpose. As Bruno Latour states, “. . . even without explicit moral reflection, technology design is inherently a moral activity.

By designing artifacts that will inevitably play a mediating role in people's actions and experience, thus helping to shape (moral) decisions and practices, designers "materialize morality"; they are "doing ethics by other means" (Latour 1999, p. 237).

Latour furthers this idea to claim that the artifacts of technology themselves can contain the moral element of intentionality. Technological mediation, he claims, is a form of intentionality, for "...their lack of consciousness does not take away the fact that artifacts can have intentions in the literal sense of the Latin word 'intendere,' which means 'to direct,' 'to direct one's course,' 'to direct one's mind'" (Latour 1999, pp. 232–233).

This view has great implications for cooking and technology, for "doing ethics by other means" implies that the ethics is in the cooking itself. Whether one realizes it or not, one is engaging in moral actions when one cooks, and the moral significance of the act is dependent on which tools are used, how they are used, and why. There would be no such thing as amoral, or morally neutral, cooking.

Cooking Technology and Ethics

When addressing the intersection of cooking, tools, technology, and ethics, a useful goal is to divide types of cooking technologies and tools under common tendencies or characteristics and then investigate the moral implications that arise out of them. A beginning list would include the following:

1. Fire
2. Hand-held linkages
3. Containers and preservation
4. Appliances
5. Fermentation
6. Things one uses to eat "off of" and "with"
7. Kitchen "gadgets"
8. Recipes

Here is a brief consideration of the list. While fire itself isn't a technology, at its most basic level, cooking is a technological control of fire

in various manifestations. Further, the control of heat through cooking is arguably the most significant cooking technology in human history.

Cooking tools involve objects that connect the human body to the food throughout the cooking process – things that extend one's hands and reachability. This category includes cutting instruments, sticks/spits, stirring things, spatulas, brushes, and tongs.

Containers and methods used to enclose, segregate, prolong, and preserve one's food all provide an artificial environment for it (even when the elements of that environment are natural). For example, an animal stomach, turtle shell, stone or clay pot, metal bowl, a refrigerator, plastic wrap, and vacuum-sealed bags all provide an environment in which food is held in some state of preservation, suspension, or controlled decay.

The category of appliances includes all machines intended to in some way modify a foodstuff through the application of a form of heat (braise, dry roast, flame, etc.) or physical manipulation. This includes ovens, stoves, grills, toasters, microwaves, bread machines, food processors, blenders, etc.

Related to preservation, fermentation is a "natural" occurring cooking method that can be controlled and augmented by human intervention.

Things used to eat off of/with include all of the instruments used to bring a food item to one's mouth: plates, dinnerware, forks, glasses, spoons, etc.

Somewhere between linkages, containers, and appliances are kitchen gadgets. These are items that are intended to make the food preparation process easier and less dangerous. Items such as choppers, garlic peelers/presses, food mills, and cherry pitters fill this category.

Finally, recipes hold an ontological status similar to a written piece of music. In itself it is not the food (just as the score is not the music), but instead is one of the means through which the product is created, directed, understood, and enjoyed. It may not be necessary, but it is often quite helpful. A recipe also has significance for historical, cultural, religious, and literary consideration.

The categories of fire and appliances are explored below.

Fire

While creating instruments (crude knives, spears, etc.) with the intent to kill an animal in order to eat it is one of the first food-related technologies that most clearly brings ethics into eating, it was cooking itself that had the most impact on humans' moral relationship with food. This is because cooked food opens up the natural world to humans as eaters and presents far more of it (in both plant and animal form) as digestible.

Prior to cooking, humans were limited not only to what could be found and eaten on the spot but also to what was easily digestible: berries, nuts, fruit, and a rather limited amount of protein – most likely in the form of insects. Cooking allowed objects in the world to become more available to humans as eating options, for more grains and plants could become digestible, as well as meats which, prior to the control of fire, had to be eaten raw. Ethically, this opened up two big arenas for humans: energy distribution (and therefore individual direction of human lives and goals) and ontology.

First, regarding energy distribution, prior to cooking, the energy gained through eating was spent primarily on immediate refueling of the energy spent on finding the food. After cooking, eating energy was directed more towards the brain and other functions that were not immediately involved with survival. What cooked food provided was a shift in how humans spent their energy. Whereas a tremendous amount of it was also previously spent on digestion (it takes a lot to process raw food), it could now be freed up for use by the brain (which grew larger) on other projects. Richard Wrangham notes:

The extra energy gave the first cooks biological advantages. . . . They survived and reproduced better than before. Their genes spread. Their bodies responded by biologically adapting to cooked food, shaped by natural selection to take maximum advantage of the new diet. There were changes in anatomy, physiology, ecology, life history, psychology and society. (Wrangham 2009).

Second, western philosophy has been dealing with a 2000+ year hangover regarding subject/object, self/other, and theory/practice dualisms that boil down to the distinction between the “me” and the “not me.” Ontologically speaking, food occupies a unique position in the so-called external world for it is unlike the average rock, tree, clouds, oceans, and even fire. All of these “things” are regarded as the “not me.” Food, on the other hand, is something that is, by definition, an object that is going to be assimilated into me, and therefore is the “not yet me.”

Food's ontological status is one of potentiality – it is the potential self. The range of objects in the world that one is willing to label as “food” denotes also the range of objects that one is willing to put into one's mouth and accept into one's being. The intimacy of the relationship humans have with food is therefore quite profound, and the ethical implications of what is called “food” are far reaching. The often-quoted line from Jean-Anthelme Brillat-Savarin, “Tell me what you eat, and I shall tell you what you are,” points both to the profound meaning in eating and to the fecund moral implications of eating.

With the gain of control over fire and its use, the realm of the “not me” got smaller and the “not yet me” became larger. With the expansion of the category of things now available as food, also came the expansion of the self and of one's identity.

Appliances

The use of cooking appliances reveals levels of interaction and involvement that one is willing to have with food, but also, various appliances highlight epistemological issues regarding the knowledge required to cook in certain ways. Without the knowledge of how to cook something “by hand,” there is a reliance on technology in the form of appliances to “do it for us.” Thus, it is often found that there is a removal of the self from the cooking situation. This could carry with it an attempted abdication of responsibility. Further, the use of some appliances highlights the “mere product” perspective on food.

Consider the basic differences between making bread by hand and making bread in a bread

machine. There is an embodied, tactile knowledge that comes from kneading bread, baking techniques, utilizing different types of yeast, and so forth. There is also a degree of knowledge that comes from using a bread machine – but it reveals something quite different from making bread by hand. Making bread by hand depicts a continuum of bodily meaning throughout the entire process, culminating in the finished loaf. The bread machine creates the bread without the user of the machine having to know much about what it takes to make bread. The bread machine is a near equivalent to taking the industrial process of making bread, in which one does not participate, right into one's own kitchen. The bread machine reminds one of a disconnection from the process that produces the bread eaten, even as it pretends to connect one to it. The emphasis on “not doing” it ourselves allows one to relinquish responsibility for the food produced. Clearly, even though some individual put all the ingredients into the bread machine and turned it on, the machine “made” the bread, and the resulting bread is not the responsibility of the individual.

Avoiding interactive, tactile bread-making processes such as kneading, rising, punching, and shaping reveals a split between means and ends and places value solely on the ends. The bread machine does not remove one from the cooking context entirely, because cooking is still happening. However, it alters the context such that one is no longer participating directly in the cooking – the cooking is happening without one's involvement. In this case, the bread machine bread is presented primarily as an object of consumption instead of the culmination of an interactive and meaningful process. Albert Borgmann notes that devices that do the work for us have divorced us from meaningful practices involving food and that the experience of dining together has been offset by grazing and “grabbing a bite to eat” (Borgmann 1995, p. 90).

Borgmann points to an important aspect of experience which is being devalued by the use of certain technological advances. The use of something such as the bread machine is not merely an instance of unburdening, efficiency,

or convenience. It indicates something much deeper in the experience in that the use of something such as a bread machine does not offer an enriched level of involvement with the process of cooking. There is experience, but it is disconnected or disjointed from the continuum of interactive meaning that comes from engaging one's environment.

One might wish to object to the severity of the above claims by comparing the bread machine and its task to another appliance such as an oven, which itself “cooks” the bread, turkey, potato, or cheesecake. But the oven really only accomplishes one task in the cooking continuum: it heats stuff. The bread machine is different because it is a multitasking appliance that mixes, kneads, controls the rising, and bakes the bread; it does not merely do all the work, it does all the work without the involvement of the skill, technique, or knowledge it takes to make bread. The machine does not have knowledge, it bypasses it. The oven is part of the overall process, the final stage, of baking the bread – which is also something that we cannot do ourselves, thus further distinguishing the use of the oven from the use of the bread machine. The bread machine can be used to bypass the process of making bread almost entirely. Therefore, with the bread machine the emphasis is on the product, and this emphasis becomes morally problematic because the bread machine replaces us and our actions and decisions.

Suggestions for Future Work

For Dewey, however, tools do not have the last say. Instead, technological innovations tend to rearrange existing alliances, tip balances of power, render some forms of community life obsolete, and encourage the development of others. (Hickman 2001, p. 216).

Technology both keeps up with and drives human culture. The topics to consider and pay attention to as cooking technologies and tools continue to develop are difficult to predict with assurity, but there are some areas which warrant special attention.

Of particular salience is the intersection of gender, cooking practices, equality, and technology. This convergence points to a need for a strong voice from feminist philosophers. This has already begun in the context of technology and gender equality, and the extension of it into cooking practices (and into food and agriculture as a whole) is a logical next step. Corlann Gee Bush has begun this dialogue by showing that societies that have established divisions of labor based upon gender also have differing technological effects on men and women. What happens is that the technologies tend to reinforce patterns of gender inequality already established within that culture (Bush 1983).

For example, “tech fixes” (new, quick, technological advances designed to solve problems, aka, “gadgets”), while superficially useful and morally harmless, ethically backfire in that they perpetuate a class divisions based on epistemological suppression. If groups (based on race or gender) are associated with the traditional tasks that have been “fixed” by the technology, then that class’ subjugation is further established.

Underlying the motivation of a tech fix is the idea that technology will provide all the solutions needed to ameliorate one’s troubles. So, where there is a widespread inability to utilize a knife in the context of a kitchen for chopping, dicing, etc., there are gadgets (tech fixes) that do the work for you and produce the “exact” same result as though the food were chopped by a home cook who knows how to use a knife. Rather than provide liberation, the tech fix ends up supporting traditional gender inequality (and perhaps make it worse) by further removing the (usually female) cook from the process of cooking and showing that she is intellectually incapable of figuring out how to chop an onion on her own with a knife. She needs an enclosed, plastic chopper to do it for her – all she has to do is hit it.

One could easily see the original encroachment of the tech fix into cooking through the first wave of TV dinners which showed female cooks that machines in factories far away were capable of cooking better, more efficiently, and more conveniently than she was able to do at home.

Summary

This entry provides an overview of some connections between cooking, technology, tool use, and ethics. This intersection has yet to be explored philosophically, and the author highlights several of the salient issues that arise in this context.

Cross-References

- [Agricultural Ethics](#)
- [Brillat-Savarin and Food](#)
- [Cooking, Food Consumption, and Globalization: Ethical Considerations](#)
- [Food Risks](#)
- [Food-Body Relationship](#)
- [Functional Foods as Commodities](#)
- [Recipes](#)
- [You Are What You Eat](#)

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Cooking, Food Consumption, and Globalization: Ethical Considerations

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Synonyms

Circulation; Colonialism; Free trade; Global governance; Imperialism; Internationalism; McDonaldization; Neoliberalism; Transnationalism

Introduction

Globalization refers to the movement of people, things, ideas, and capital across the world as well as the processes and structures that enable this circulation, the ideologies intertwined with it, and the resulting circumstances (Murray 2006; Mittelman 2004). Globalization entails an interdependence that affects many aspects of life for individuals in distant but nevertheless connected locales. A drought in one place may result in a dramatic rise in food prices, the implementation of export restrictions, and the occurrence of riots in other places. Globalization's impact on food production, marketing, distribution, preparation, and consumption abounds with ethical implications. Energy policies, economic subsidies, and other politico-economic factors influence what and how people across the world eat. What consumers in one part of the world purchase, in turn, affects societies that produce foodstuffs for global consumption (Mintz 1985). This introduction describes the globalization of food and agriculture in historical context, while subsequent sections examine ethical implications in greater depth.

Globalization did not begin at any particular time. Human migration across the globe, colonialism, and the spread of neoliberal economic ideas that has occurred since the late 1970s are events that have significantly shaped human interaction across the planet. Important events in the globalization of food that have affected the eating

patterns of human societies across the world include the spread of agriculture and domesticated plant and animal varieties across continents and the establishment of major trade routes such as the Silk Road in the second century CE. The Green Revolution, the process by which agricultural production increased exponentially in the mid- to late twentieth century as a result of the development and use of chemical fertilizers and pesticides, F1 hybrid crop varieties, irrigation techniques, and so forth, is another significant event.

Although globalization is not a new phenomenon, the current phase of globalization stands out in terms of the scale, reach, and speed at which movement across great distances takes place. Economists now calculate the daily turnover in financial markets at the scale of trillions of US dollars. Technological developments in transportation, communication, and information technology in the latter part of the twentieth century have led to a world that is more interconnected than ever before, albeit unevenly. International trade has expanded significantly over the past 50 years (Bruinsma 2003). New refrigeration technologies permit many perishable goods to be transported across continents without being frozen or processed.

The current phase of globalization is also notable for the prevalence, influence, and reach of transnational corporations. A-B InBev, for example, is headquartered in Belgium but has a workforce of 100,000 in 30 different countries. Many of its recent Executive Board of Management members have been Brazilian, but there have also been Portuguese, American, and Indian-German members. Its beers – from Budweiser, Beck's, and Stella Artois to Harbin, Brahma, and Bass – hold the number one or two slots in 19 key markets and have captured more than half of the market share in Belgium, nearly half of the US market, three quarters in Argentina, and almost the same percent in Brazil (A-B InBev 2011).

Globalization entails the circulation of capital, goods, individuals, and ideas across the world. Institutions such as the World Trade Organization (WTO), the World Bank, and the International Monetary Fund (IMF) have promoted the liberalization of markets, the creation of

international trade regulations, and the establishment of free trade agreements, though these have encountered opposition from activists and interest groups across the world. The liberalization of labor markets and the free movement of people across the globe have not been promoted in a similar fashion. In spite of this, people move around the world today in increasing numbers, to increasingly distant places, at unprecedented speeds. Many migrants find employment in the food industry, particularly in developed economies. Celebrity chefs like Jamie Oliver, Madhur Jaffrey, and Nobu Matsuhisa have appeal beyond their countries of birth. Less advantaged individuals may work on farms, in meat processing plants, and in kitchens. Tourists also travel across the globe, coming into contact with unfamiliar foodstuffs, dishes, cuisines, and foodways. The term “culinary tourism” refers to the industry that has emerged to cater to those who seek out gastronomic experiences in faraway places. Ideas have circulated the globe along with people, things, and capital. Neoliberal economic policies are especially noteworthy for their recent influence across the globe. The increased interconnectedness of distant locales via new technologies and social media has also made it possible to share knowledge about cooking techniques, management practices, and nutritional information. Globalization has also facilitated the organization of movements like the Christian hunger relief organization Bread for the World, the Worldwide Opportunities on Organic Farms (WWOOF) movement, and anti-WTO protests.

Although globalization has to do with circulation, not all places are equally connected to the flow of people, ideas, things, and capital. Famines, undernourishment, and food deserts are also aspects of globalization. These phenomena demonstrate that globalization is not transforming the globe into a homogeneous and equally resourced place. In the following sections, this entry will examine the ethical implications of the globalization of food and agriculture in terms of contemporary concerns about its impact upon economic systems, human health, cultural diversity, the environment, as well as democracy and the agency of disadvantaged groups.

Economics

Globalization is often equated with neoliberalism – a set of economic beliefs and policy proposals centered on deregulation, privatization, and pared-down state budgets for social programs. At the global level, neoliberalism emphasizes the liberalization of world markets and the implementation of “free trade.” In the latter half of the twentieth century, neoliberalism gained popularity with economists and policymakers the world over. A comprehensive transnational agreement eliminating subsidies and tariffs is lacking for agriculture and food. In spite of this, food prices have declined in real terms since the Second World War. In 2008, however, in what analysts and the media have termed a “global food crisis,” food prices rose dramatically in much of the developing world, creating a great deal of insecurity and stimulating food riots. As of 2012 prices have stayed high compared with earlier decades. Possible contributing factors include bad harvests for major producers, a reversed trend away from overproduction, and financial speculation in agricultural markets.

There are ethical motivations at the heart of free trade theory. Advocates argue that the liberalization of agricultural markets and the expansion of free trade would result in more efficient economies, savings for taxpayers and consumers, and benefits for countries in the developing world. The Organization for Economic Cooperation and Development (OECD), for example, holds that “simultaneous reform involving a halving of trade protection and domestic support across all sectors could potentially generate USD 44 billion in welfare gains globally. Most of these gains arise from agricultural reform and most of these agricultural gains come from reform of market access measures” (OECD 2006).

One criticism of the world trade system established under the WTO is that it hurts developing economies. Developed economies distribute substantial subsidies to farmers who subsequently “dump” commodities on global markets at artificially low prices with which farmers in developing economies cannot compete. Agricultural trade has grown much more slowly over the past half-century than has the

trade in manufactured goods (Bruinsma 2003). On average, tariffs on agricultural commodities are as high as industrial tariffs were in 1950. As a result, developing countries have become net agricultural importers, with the situation most dramatic in the least developed countries. If current trends hold, the Food and Agriculture Organization (FAO) of the United Nations estimates, by 2030, developing countries will reach a level of net imports of USD 31 billion. FAO analysts deem it probable that developing countries will import greater and greater quantities of food from developed countries while exporting larger amounts of agricultural products such as beverages, fiber, and rubber (Bruinsma 2003).

Ethical criticisms of free trade often focus on exploitative labor practices, wealth disparities, environmental degradation, and other negative conditions that may result from deregulation and trade liberalization. Movements and organizations such as the “trade justice” movement and the international nonprofit organization Fairtrade seek to alleviate harsh and exploitative labor conditions and ensure that more of the money paid for commodities from the developing economies, such as bananas and coffee, may actually reach those who produce them. Focusing on the power of consumer action, the Fairtrade model employs certification and labeling meant to distinguish agricultural and craft goods whose producers receive adequate compensation for labor they perform under conditions that are socially acceptable from those who do not. Today, the Fairtrade foundation is responsible for billions of pounds in sales in the United Kingdom alone. Fairtrade and its model, however, have come under fire for being ineffective, untransparent, deceptive, and even harmful to farmers who do not participate (Griffiths 2012). The ability of consumers to ascertain that their purchases of foodstuffs from distant places contribute positively to the lives of those who produce them is thus questionable.

Health

Globalization has had positive and negative impacts on people’s diets, resulting in a range of

health consequences. The circulation of foodstuffs, including perishable commodities, across long distances means that many societies today have access to a variety of nutritious foods. Crucially, fruit and vegetable availability has increased since the 1960s across the world (Mendez and Popkin 2004). As a result, nutritional status has improved since the 1960s, with the important exception of sub-Saharan Africa.

While the availability of foods from distant places enables some groups to diversify their diets, it can also threaten local foodways. Those who are less well-off often find they can no longer afford traditional foodstuffs after they have been turned into export crops and may have a difficult time finding acceptable alternatives. Quinoa, for instance, has long served as a source of nutrition for many Bolivians. In the late twentieth century, global demand for the crop surged, primarily because of increased consumption by the North American and European middle class. Though Bolivian farmers’ incomes improved as a result, lower-income groups could not sustain prior consumption patterns for this healthy traditional foodstuff because of the degree to which prices had risen.

Recent trends toward dietary convergence show increased consumption of sugar, salt, fat, and vegetable oil, and a decrease in dietary fiber intake (Kennedy et al. 2004). Indeed, the dramatic increase in obesity rates across the world, especially for children and particularly in Pacific Island nations, is believed to be at least in part the result of the tremendous growth in worldwide consumption of processed and high-calorie-content foods, including fast-food chicken, instant ramen, and soft drinks (World Health Organization Regional Office for the Western Pacific 2002; Sobal and MacIntosh 2009). This is worrisome considering links between obesity and high rates of heart disease, diabetes, hypertension, and other health complications, as well as the complexity of addressing the double burden of both undernourishment and overnourishment in developing countries. The World Health Organization has proclaimed a global obesity epidemic and along with state governments, and nongovernmental organizations,

and other international institutions, it is attempting to address the problem.

The flow of food and knowledge across the world does not reach all people in the same ways. Many multinational organizations and nongovernmental organizations work globally to spread nutritional knowledge – from the benefits of breastfeeding to notions of a “balanced” diet, alleviate food crises, and prevent future ones from occurring. Yet hunger and undernourishment persist despite sufficient global food production (Sen 1981). Famines have social causes as well as environmental and economic ones and increasing production will not eradicate famines or undernutrition. Indeed, global food production measures approximately four billion tons, but the FAO calculates that about a third of that food is never consumed (Gustavsson et al. 2011). “Food loss” refers to the decrease in food mass that occurs during the stages of agricultural production, postharvest handling, storage, and processing. “Food waste,” meanwhile, is applied to similar losses that take place during distribution, retail, and finally individual and group consumption. As these definitions indicate, food loss and waste occur at every point in the food supply chain. The FAO estimates a level of annual per capita food loss and waste of 6–11 kg of food in sub-Saharan Africa and South and Southeast Asian countries, in contrast to a much higher level of 95–115 kg in Europe and North America. Overconsumption may also be categorized as food waste that has negative repercussions for human health and the human ecological footprint (Blair and Sobal 2006). The inequalities perpetuated in the global food system are striking when one considers that 870 million people are chronically undernourished while billions of tons of food goes unconsumed and many individuals consume far more food than their bodies require (FAO, WFP and IFAD 2012).

Culture

Culture permeates every aspect of the global food supply chain. Even the forging of global agreements concerning food safety via international

institutions is complicated by cultural differences over how a food product’s safety is determined and to what extent items such as unpasteurized cheese, hormones in meat, and genetically modified (GM) foods can be deemed safe (Korthals 2004). One ethical concern evident in discussions about the globalization of food, cooking, and cuisine is that the contemporary processes of globalization are replacing the world’s vast food cultures with a heterogeneous food culture originating in the West and in particular the United States. The term “McDonaldization” is often used to represent this perspective (Ritzer 1993). Indeed, the Slow Food movement was catalyzed by the construction of a McDonald’s near the Spanish Steps in Rome. French farmer Jose Bove grabbed global headlines when, as a sign of protest against globalization, he led a movement to take a McDonald’s apart before it could open. The argument that mainstream American culture – epitomized by McDonald’s – is engaging in a kind of cultural imperialism is of ethical concern because it highlights threats to the agency and self-determination of disadvantaged groups (see section below on Democracy and Agency) and decreases in the richness of human cultural diversity. While American corporations such as McDonald’s, Doctor’s Associates, and Yum! Foods do dominate the global market for fast food in terms of market share, they are not necessarily engines of cultural homogeneity. Indeed, McDonald’s franchises adapt to the places they are situated. Thus, McDonald’s franchises in Mumbai, Kyoto, Santa Monica, Paris, and Moscow vary considerably in terms of menu, store design, and how customers use them (Watson 2006). The international spread of fast-food ventures is also not a simple cultural shift but related to factors that include trends such as urbanization and women working outside of the domestic sphere.

The circulation of foods across the globe has never been a unidirectional process (Plotnicov and Scaglione 1999). For instance, the establishment of trade routes and colonies that followed explorer Christopher Columbus’s arrival in the Caribbean spurred the movement of people, plants, animals, diseases, and ideas across

continents. This transformational event has been called the “Columbian exchange” (Crosby 1972). Though neither free nor fair, these exchanges brought cattle, citrus, and wheat to the Americas and corn, potatoes, and tomatoes to Europe. Spicy Korean cuisine, Italian marinara sauce, and Colombian coffee did not exist prior to this event.

The diffusion of foodstuffs, dishes, and cuisines has also been evident in more recent years. Dishes such as curry, fried rice, French fries, pizza, sushi, guacamole, and croissants are now commonly found in many countries. Water is bottled, branded, transported across the world, and consumed in places with abundant resources of their own. Restaurant menus as well as domestic fare demonstrate an international influence and a tendency toward adaptation and creolization.

Though globalization has not resulted in a uniform cuisine, certain trends have had a great deal of influence upon foodways across the globe. In the recent phase of globalization, the image of a “modern” city is one that is cosmopolitan enough for residents to eat in Ethiopian and Vietnamese restaurants, shop in Mexican and Chinese grocery stores, and browse in bookstores that carry Indian and Spanish cookbooks. Elites eat luxury foods like vintage wines, caviar, Kobe beef, and French cuisine, develop a familiarity with various “ethnic” cuisines, and adopt self-imposed food restrictions as in veganism, locavorism, or special diets. Markers of status such as these are sought after and derive their value directly from the difficulty required to obtain them, clear indications of inequalities in the global food system.

Technological advances in communication have facilitated the emergence of organizations like Slow Food International that have had a great deal of influence on the global discourse of food, cuisine, and ethics. Founded in Rome, Italy, in the late 1980s, Slow Food now claims to have 100,000 members in over 150 countries. Its aims include the safeguarding of local agricultural and culinary traditions and the promotion of sustainable farming. Critics of the Slow Food movement view it as elitist, antiscientific, anti-change, and

ignorant of the challenges involved in producing and preparing food to feed whole societies.

As migrants and tourists move across the globe, individuals and societies experience culinary traditions new to them. Such interaction can generate an understanding of specific food cultures and form the basis for respecting cultural differences. Though culinary tourism and the consumption of “ethnic” foods appear to sustain traditional foodways, they also engender change. New standards for what is authentic and what is desirable are established, with tourists and foreign food experts often imposing their judgments and consequently altering local food culture in the process. Although Asian cuisines have gained a great deal of popularity in recent years, for instance, whale meat and dog meat have been met with disapproval from many tourists and travelers and are now consumed far less frequently than they once were.

The Environment

One consequence of the dietary convergence that has accompanied globalization has been a loss of biodiversity. Rice, wheat, and maize have become the dominant grains, though the varieties of even these crops have also decreased. The decrease in global biodiversity is also the result of climate change, habitat change, the introduction of invasive species, overexploitation, and pollution, which all may be linked to globalization as well. The overexploitation of natural resources including marine fisheries continues to threaten global biodiversity (Bodiguel et al. 2009). Decreases in biodiversity render areas engaged in large-scale monocropping vulnerable when unfavorable ecological conditions, from drought to pestilence, develop. They can also negatively impact the health of local societies and cause cultural, economic, and social dislocation. The mid-nineteenth century Irish Potato Famine is a stark example of this.

Neoliberal economists and many state actors promote an industrial agricultural model characterized by large-scale monocropping. Such

agriculture is fuel dependent and releases greenhouse gases (GHGs) into the atmosphere, contributing to global climate change. Importantly, the countries responsible for the largest GHG emissions are not those that suffer the consequences the most. Thus, although the United States and the People's Republic of China release the greatest amounts of GHGs, it is nations such as Kiribati and the Marshall Islands that experience existential threats as a result. The purchase of industrial agricultural foodstuffs sustains such a model and contributes to the human ecological footprint. Food travels great distances – often thousands of kilometers – before it reaches consumers and a food item's provenance is easier to identify than the environmental impact involved in producing and transporting it. In this context, the notion of “food miles,” the measurement of the distance a food has traveled from place of production to the place the consumer procures it, is used to index its environmental impact and specifically the greenhouse gas emissions accrued throughout the supply chain. Calculating the contribution of discrete consumer purchases to the climate footprint in “food miles” has generated criticism because it omits the much greater amount of GHG emissions related to food production, resulting in a misleading view that foods that are produced locally have less impact upon the environment than those transported from more distant places (Weber and Matthews 2008). Consumers purchasing food on the basis of “food miles” may not only misunderstand the extent of their food's climate footprint, but by declining to buy foodstuffs that have traveled great distances, they may actually hurt producers in developing countries that are low emitters of greenhouse gases.

Large-scale farming for global markets may also contribute to environmental destruction that exacerbates other problems. This is the case with shrimp farming in places such as Thailand and India. Though they provide employment and bring economic benefits to the areas where they are located, shrimp farms are linked to pollution, the cutting off of communities from access to local resources, and the destruction of mangroves, which leaves local populations more

vulnerable to natural disasters like tsunamis and cyclones.

While the negative environmental consequences of the globalization of food are prominent, there have also been positive ecological developments that are linked to globalization. The sense of global awareness of transnational environmental problems such as climate change and the participation of state and non-state actors (including civil society) in trying to come up with measures – from treaties to new technologies – to address them is one positive development. The recent popularity of self-consciously “organic” farming and its products is one movement worth noting, though the term has been criticized for being ill-defined, used in ways that both lack transparency and established international standards.

“Local” food movements have emerged across the globe often as a reaction against the negative aspects of a global food system. Yet these are also a result of the processes of globalization that facilitate the flow of knowledge about food systems, the ideals behind local food movements, and the various means of creating localized food systems. These movements include community-supported agriculture (CSA) groups, areas seeking to be food self-sufficient, and farmers' markets and other means whereby farmers sell their products directly to consumers. Critics of local food movements identify xenophobic tendencies and the creation of boundaries that can have negative consequences for those excluded. Because what is considered “local” is not defined in many instances, the term is susceptible to overuse by marketers, resulting in a situation whereby local agriculture neither necessarily refers to a specific proximity between producers and consumers nor entails the implementation of environmentally sustainable practices.

Democracy and Agency

Another topic critical to the global discourse on ethics and the globalization of agriculture and food concerns the ability of each society to

determine its position vis-à-vis the world at large. This is evident in relation to the land acquisitions that some states have pursued in less-developed countries so that they can export agricultural commodities and secure their own domestic food supplies. Critics of such projects have called them “land grabs,” arguing that many of these less-developed countries experience undernutrition and receive aid from the World Food Programme. Some researchers have accused countries of causing famines by engaging in such land acquisitions.

The concept of “food sovereignty” has emerged as a challenge to neoliberal policies to food and agriculture, phenomena such as “land grabs,” and notions of “food security” that emphasize decision making by state elites, advancements in agricultural production, and the role of large corporations (Carney 2011). “Food sovereignty” is said to be the right that peoples and countries have to food and to determining how they will produce or obtain food in ways that meet their nutritional, ecological, social, economic, and cultural needs. It is deemed a violation of food sovereignty when an international institution or a foreign government coerces a state to open its borders to imports of commodities and food products. Proponents of “food sovereignty” are concerned that the liberalization of trade threatens domestic agricultural sectors, the livelihood of farming households, human health, and the stability of rural areas. Another objection is that food imports may include products such as genetically modified crops that may be socially undesirable but may not be identified as such in labeling. Food sovereignty advocates also emphasize the inequality inherent in a system that enables developed countries to export agricultural products at much cheaper prices because of subsidies and price distortions. As a result, they believe that societies should be able to determine their own policies without pressure from international institutions, powerful state actors, or domestic governments pursuing individual or political agendas at the expense of disadvantaged minorities. Critics find “food sovereignty,” however, to be open to interpretation, easily manipulable by elites, and difficult to gauge (Carney 2011).

Summary

Globalization is comprised of processes whereby people, things, ideas, and capital move across the globe. It does not have a definite starting point and its future mutations and consequences have yet to be determined. Contemporary ethical debates about the globalization of food largely relate to economic, cultural, health, and environmental concerns, as well those related to agency and democracy. As state and non-state actors as well as global civil society take measures to address the negative impacts of globalization and expand upon the benefits, new manifestations of globalization will emerge. Consumption has ethical implications, but the larger consequences of particular consumption patterns are not always clear. The global food system lacks transparency, traceability, and accountability, leaving consumers to make decisions based on the incomplete and sometimes distorted information available to them.

Cross-References

- Culinary Tourism
- Economy of Agriculture and Food
- Extraterritorial Obligations of States and the Right to Food
- Fair Trade in Food and Agricultural Products
- Food and Agricultural Trade and National Sovereignty
- Food Security and International Trade
- Slow Food
- Sustainability of Food Production and Consumption

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Corporate Farms

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Synonyms

Agribusiness; Farm incorporation; Industrialized farms; Large-scale farms

Introduction

Public concern about the consequences of “corporate” farms dates back to the early 1900s. While corporate farming has a technical or legal meaning about the form of business organization and ownership of farms, the term is usually used more broadly to refer to large-scale industrialized farms. Numerous studies raise the ethical issues about large-scale industrialized farms. One of the central concerns is the potential for these farms to have detrimental impacts on community life.

This entry provides an overview of the literature addressing the attributes and impacts of large-scale industrialized or “corporate” farms. It discusses the technical meaning versus popular usage of “corporate farms” and the manner by which scholarly research has conceptualized these farms. It also summarizes the many decades of research that has investigated the relationship between industrialized farming and public well-being. Extant research demonstrates a number of lines along which scholars have voiced concerns about industrialized farming. Finally, factors that might mitigate potential detrimental effects of industrialized farms are discussed.

Corporate Farms: Technical Definitions, Customary Conceptualizations, and Measures

Corporate farms are defined and studied in at least three ways, each one broadening upon the other. First, there are technical or legal definitions of these farms. As businesses, farms are classified by the form of business organization that the owners select on the basis of tax benefits and liability protection. Corporations are distinguished from typical small businesses organized as sole proprietorships, general partnerships, and other partnerships with various limited liability protections for owners. Goforth (2002) explains the legal differences between these different forms of organizing farms as businesses. Corporations are formed by filing articles of incorporation or corporate charters with state government. Farm corporations have built-in formalities such as by-laws governing daily operations, relatively rigid management structures, and shareholders with voting rights that must approve organizational transactions such as dissolution and mergers. Shareholders do not have liability for losses of the corporation and are not entitled to report any loss on their personal taxes as a result of losses at the corporate level.

Various federal agencies collect data on corporate farms. The Agricultural Resource Management Survey conducted by the US Department of Agriculture shows that 3 % of farms were incorporated in 2010, and they account for 21.6 % of total US farm sales (McDonald 2012). But the vast majority of these corporate farms (2.6 % of the total number of farms) are considered family owned with the majority of the shareholders being blood-related family members. Only 0.04 % of US farms are nonfamily owned corporations. The proportion of nonfamily held incorporated farms has grown little over the past several decades (Lobao and Meyer 2001). The minuscule number of nonfamily relative to family corporations contrasts with the popular perception about corporate farming. It further suggests that ethical issues raised by legal incorporation per se are limited: most farms that are incorporated are done so to

help families manage the operation and because of interests in estate planning, assurance of business continuity, limited liability, and potential tax advantages. The family criterion is important because it often forms some type of basis for corporate farm restrictions in different state laws.

A second conceptualization can be seen in the definitions used by states that have enacted corporate farming laws. These laws go beyond addressing whether or not a farm is an incorporated business. They are statutory or constitutional provisions limiting the power of corporations to engage in farming or agricultural production-related processes and to obtain land that is or could be used for agricultural production. Pittman (2004) provides a summary of these laws often called “anticorporate” farming laws. Varying by state, these laws involve criteria such as the number of and relationship among the shareholders, whether a family member “actually” conducts farming operations, and whether shareholders reside or work on the farm. Nine Midwestern states have these laws in place. They often provide exemptions for nonprofit entities who own farms and for corporations who entered farming prior to the passage of any anticorporate farming act. These laws are established in the attempt to reduce the potential negative impacts of absentee-owned, large-scale farming on communities and the public at large and to protect family farmers from oligopolistic agribusiness.

The third conceptualization, the one most frequently assumed in the popular literature, is the use of the term corporate farms as synonymous with industrialized farms. As explained above, most “corporate farms” are in fact family owned and operated farms – hence, as a term, “corporate farming” is a misnomer. But the broader industrialization of farming has been of extensive concern to researchers due to the potential for detrimental effects on the public well-being. Hence, ethical issues raised by “corporate farms” should be subsumed under the more general question of the industrialization of farming.

The industrialization of farming refers to the transformation whereby farms have become larger scale, declined in number, and integrated

more directly into production and marketing relationships with processors through vertical or contractual integration (Drabenstott and Smith 1996: p. 4). The industrialization of farming is often contrasted with the relative decline of traditional, moderate size family farming. Extensive research explains how farms have changed historically and the evolving patterns of farm size and structure (Buttel 2001; Lobao and Meyer 2001). Farming is often described as a dualistic system, composed of a few large farms with expanding market shares and many small farms that cannot sustain families. Over time, moderate size farms have been edged out of agriculture. Scale, measured in farm sales, is usually used as a measure of farm size. Very large farms (those with annual sales of over one-half million dollars per year) make up only 5 % of all farms, but they account for more than half (53.7 %) of total agricultural sales (Hoppe and Banker 2010: p. v). These very large farms have a median size of 1,062 acres as compared to the median for all US farms, 88 acres (Hoppe and Banker 2010: p. 8).

Accompanying the growth of scale of operations are organizational changes. These include an increase in the relative proportion of hired to family labor as well as greater use of incorporation as a form of legal organization, discussed above. Another organizational shift is the movement toward a more integrated industry from farm to grocery; this occurs through “contract production” and vertical integration that links farmers, food processors, seed companies, and other agribusiness (Barkema and Drabenstott 1996: p. 64). Vertical integration refers to operation of farms by firms that also operate in at least one other stage of the food chain, such as input supply, processing, and marketing. Examples of vertically integrated firms are large livestock producer/processor enterprises, such as Tyson. In addition to their direct involvement in farm production, agribusiness firms contract with farmers for goods and services. About 10 % of farms operate under marketing or production contracts with agribusiness corporations (Hoppe and Banker 2010: p. 38). Marketing contracts are used by independent operators to reduce exposure to market price swings; these contracts

stipulate a commodity price or pricing mechanism for delivered goods and are used mainly for crop and dairy commodities. Production contracts involve cost sharing arrangements and/or payment for operators’ services usually for hogs, poultry, and other livestock production except dairying. Production contracts extend agribusiness firms into direct farm production using the vehicle of the local farmer. In sum, agribusiness firms, depending on corporate strategy, may enter farming through direct operation of their own units and/or through employing local farmers to participate in production homework.

In classifying farms as “industrialized” or “family,” researchers distinguish between the construct (an ideal-type concept) and its actual measurement (variables used to define the concept in practice). When social scientists refer to “industrialized” farms, they invariably are referring to both scale and organizational characteristics of the farm unit. In general, but not always, scale coincides with organization. That is, large-scale farms (relative to smaller or family farms) are more dependent on hired labor and managers and more likely to have absentee owners, to be incorporated, and to be vertically integrated with agribusiness. By contrast, family farming as an “ideal type” is usually conceptualized as an enterprise where the family unit owns a majority of property, makes managerial decisions, and provides the bulk of labor.

In terms of measurement, social scientists measure industrialized farming by both scale and organizational variables. Scale is usually measured by sales but sometimes by acreage and real estate and for livestock operations, animal inventory. The actual dollar value for scale indicators used by analysts to indicate a “large-scale” farm will obviously vary by the time period of study, by regional context, and by commodity. Organizational measures of industrialized farming include vertical integration of corporations into farming; production contract farming arrangements; absentee ownership of production factors; dependency on hired labor; operation by farm managers, as opposed to material operation by family members; and legal status as a corporation (family or nonfamily). But in

practice, social scientists focus most on farm scale (sales) and use it as a general proxy measure to classify farms because it is simple, clear, and often correlated with organizational characteristics of units. In 2010, USDA categorized farms with over \$250,000 in annual sales as “large” farms and those with \$500,000 or more in annual sales as “very large” farms (Hoppe and Banker 2010).

Concerns About Public Well-Being

Numerous ethical concerns are raised about the potential for negative impacts on society due to the industrialization of farming, both globally and within the United States. The degree to which these concerns are warranted depends on the particular empirical case, including national and community context. Noted below are general issues that apply across nations and particularly developing nations. More detailed attention is then given to the US case.

Across Nations and the Developing World

Across nations, researchers have raised concerns about the industrialization of farming on public well-being. Farming systems globally are inherently uneven in their effects, conferring different costs and benefits across regions, communities, and social classes. Larger and fewer farms reduce the aggregate farm population within nations and alter farm and rural community class structure (Barret et al. 2010). In contrast to assumptions that rural areas initially fall behind in well-being as farming becomes industrialized but later catch up to urban areas in income and employment over time, cumulative, uneven development may occur. That is, rural communities or regions may suffer long-term outmigration and persistent poverty, never fully recovering.

More broadly, some researchers see the industrialization of agriculture as symptomatic of broader and largely negative changes in the global food system. McMichael (2012) articulates this concern well. He explains how the power of capitalist elites, multinational corporations, and governments’ acquiescence are leading

to the development of a neoliberal food regime that unfolds across nations. The neoliberal food regime jeopardizes public well-being through escalating past trends toward multinational corporations’ control of the global food supply. It raises profound questions within nations about agribusiness concentration, consumer health, food safety, and general sustainability of ecosystems. However, the most immediate effects of industrialized farms are on the day-to-day lives of people residing in the places where these farms are located. It is also at this level where social scientists have conducted a great deal of research over a long period of time.

For developing nations, the industrialization of farming has raised a series of specific concerns. A useful summary is provided by Schaeffer (1997). He denotes the following issues. Industrialization of agriculture creates a movement from subsistence farming to export agriculture. It may reduce domestic supply of staple food commodities. Periodic food shortages or even famine may occur as food prices rise. Farmers themselves become increasingly cash dependent and more prone to debt crisis as they seek to maintain households and expand operations in order to compete. Rural class structure undergoes change. Smaller farmers may become displaced, and there may be a rise in landlessness. Overall, economic inequality among the rural population tends to grow. As large-scale farming expands, habitats may be destroyed, and general environmental degradation may occur. Gender inequality in farming also occurs. Perhaps the most detrimental effects have been in sub-Saharan Africa where women who were once direct food producers tend to be displaced disproportionately from this role as land is commodified and sold. Industrialized farms also tend to recruit gender-specific labor forces. Men usually have the first new opportunities for employment on these farms, while women may have reduced access to land and earning opportunities. In regions where household income is not pooled, such as much of sub-Saharan Africa, children and women may have health, nutritional, and other problems as mothers lack access to income to provide for their families.

The Case of the United States

Public concern about the industrialized farming in the United States began in the 1920s–1930s. Boles and Rupnow (1979: p. 471) note that during this period, concern centered on the potential negative effect of mechanization, foreclosure of farm land mortgages held by corporations, and corporate monopoly of land. Since that time, much of the concern has been directed to the impacts of industrialized farm on communities.

The classic study which gave rise to modern research concerned with the ethics of industrialized farming was conducted by Walter Goldschmidt, an anthropologist working with the US Department of Agriculture. In the late 1930s–early 1940s, he conducted a research project on the effects of industrialized farming using a matched pair of two California communities, Arvin, where large, absentee-owned, nonfamily operated farms were more numerous, and Dinuba, where locally owned, family operated farms were more numerous. The purpose of the study was to assess the consequences of a California law with a provision placing acreage limitations on large farms located in California's Central Valley, so as to support family size farms in the region. Goldschmidt (1978: p. 458) notes that "Large landholders throughout the state and corporate interests generally opposed this provision while diverse church and other agrarian-oriented interests wanted this law applied to California. The comparative study of Arvin and Dinuba... was designed to determine the social consequences that might be anticipated for rural communities if the established law was applied or rescinded." Goldschmidt (1978) systematically documented the relationship between large-scale farming and its adverse consequences for a variety of community quality of life indicators. He found that, relative to the family farming community, Arvin's population had a small middle class and high proportion of hired workers. Family incomes were lower and poverty was higher. There were poorer quality schools and public services, fewer churches, civic organizations, and retail establishments. Arvin's residents also had less local control over public decisions, or "lack of democratic decision-making," as local

government was prone to influence by outside agribusiness interests. By contrast, family farming Dinuba had a larger middle class, better socioeconomic conditions, high community stability, and civic participation. Goldschmidt's initial research report, made public in the early 1940s, angered large farmers. It was first silenced by USDA and then burned publicly in California along with John Steinbeck's *Grape of Wrath*. Not until 1978 was it made widely available to the public, published in book form.

As the structure of US agriculture has evolved toward larger and fewer farms, government and academic researchers have continued to investigate the extent to which large-scale, nonfamily owned and operated industrialized farms adversely affect communities. Congress has conducted inquiries, such as that by Senate Subcommittee on Monopoly dealing with Corporate Secrecy and Agribusiness, in which rural sociologists and agricultural economists provided testimony in 1973 about the dangers to communities posed by increasing corporate control of agriculture (Boles and Rupnow 1979: pp. 468–469). The Office of Technology Assessment (OTA), concerned that the relative growth of large-scale industrialized farms might have adverse impacts on communities, commissioned a series of research papers on the topic. The OTA research came as a request from the Congress and was eventually published as a book by Swanson (1988). In the 1990s, public concern with industrialized farming began to be directed particularly on large integrated livestock producer/processor enterprises and to the issue of production contracts. Lobao and Stofferhan (2008) document four generations of work that have addressed the impacts of industrialized farming on communities, starting from Goldschmidt's qualitative work. This was followed by extensive quantitative research in the 1970s–1980s, revisionary work from the 1990s onward, and the most recent work focused on confined animal feeding operations (CAFOs).

The public concerns that industrialized farms raise are documented by Lobao and Stofferhan (2008) through a meta-analysis of 56 studies spanning over five decades of research. They classify

the results of studies by the outcomes found, denoting three types of impacts. Socioeconomic well-being is most frequently studied: typical indicators are standard measures of economic performance such as employment growth, income levels and growth, and broader distributional conditions (poverty rates and income inequality). Community social fabric refers to social organizational features that reflect community stability and quality of social life. Indicators include population change, social disruption indicators (e.g., crime rates, births-to-teenagers, social-psychological stress, community conflict, and interference with enjoyment of property), educational attainments and schooling quality, health status, and civic participation (e.g., voluntary organizations and voting). Environmental indicators include quality of water, soil, and air, and health-related conditions.

Out of the total 56 studies analyzed, Lobao and Stofferhan (2008) concluded that largely detrimental impacts with regard to large-scale, industrialized farms were found in 82 % (32) of the studies, some detrimental impacts were found in 14, and no evidence of detrimental impacts were found in 10. Such relative consistency continues to lead to the working hypothesis that industrialized farming jeopardizes well-being. Detrimental impacts are found across different measures of socioeconomic, social fabric, and environmental well-being and throughout regions of the country. Some examples of community quality of life that have been found to be adversely affected by industrialized farms are noted below:

Socioeconomic well-being. (1) Lower relative incomes for certain segments of a community: greater income inequality (income polarization between affluent and poor) and greater poverty, (2) Higher unemployment rates, (3) Lower total community employment generated relative to family farms.

Social fabric. (1) Population: decline in local population size where family farms are replaced by industrialized farms and smaller population sustained by industrialized farms relative to family farms. (2) Class composition: rural social class structure becomes poorer (increases in hired labor). (3) Social disruption: increases in

crime rates and civil suits and general increases in social conflict and increased stress or social-psychological problems among a community. (4) Civic participation: deterioration in community organizations and in less citizen involvement in social life. (5) Quality of local governance: less democratic political decision-making; public becomes less involved in local government as outside agribusiness increases its control over local decision-making. (6) Community services: fewer or poorer quality public services. (7) Retail trade: decreased retail trade and fewer, less diverse retail outlets. (8) Reduced enjoyment of property: deterioration of landscape and odor in communities with CAFOs. (9) Health problems: neighbors of CAFOs report upper respiratory, digestive tract disorder, and eye problems. (10) Real estate values: residences closest to CAFOs experience declining values relative to those more distant.

Environment. (1). Ecosystem strains: depletion of water and other energy resources. (2). With regard to CAFOs: safe-drinking law water violations, air quality problems, and increased risks of nutrient overload in soils.

In addition to the general issue of industrialized farms, specific concerns have been raised about production contracts, which as discussed above involve cost sharing or payments by agribusiness for operators' services such as in hogs and poultry production. First, production contracts are thought to alter agrarian social structure by creating a segment of farmers who are the structural equivalent of factory production homeworkers. Such contracts erode formally independent operators' autonomy in direct production, farm decision-making, and control over assets. Concern is also with the general well-being of contractees (operators) and their families given their asymmetrical relationship in bargaining power with agribusiness firms. There is an inherent structural imbalance in contract farming, and the degree to which this imbalance is manifest varies by specific contract arrangements. Ideally, production contracts are used to share risks and costs of production between contractee and contractor. But in practice, the bargaining power of external agribusiness is

likely to result in a greater share of risks and costs of production borne by contractees and their families.

Public Policy and Other Factors to Promote Well-Being

Researchers have long questioned the degree to which public policy can be a mechanism for reducing the potential negative impacts of industrialized farming. For developing nations, researchers have often denoted the positive role appropriate agricultural policy can play in improving economic performance and alleviating rural poverty (Barrett et al. 2010). By contrast, in the United States, the limits and problems with farm programs are stressed. Analysts tend to see farm programs as contributing to the growth of industrialized farms (Winders 2009). While 61 % of farmers receive no government payments (largely due to the commodities that are raised), for those that do, the largest farmers reap greater benefits, even though payments are capped for the largest farms (Hoppe and Banker 2010: p. 33). Researchers charge farm programs with contributing to rising land values and reducing the risks of farming which over time promotes the growth of larger and fewer farms (Browne et al. 1992).

There is some evidence however that public policy in terms of state laws can help. Welsh (2009) reports states that regulating corporate involvement in farming with “anticorporate farming laws” tend to have more robust family farm sectors. Industrialized farming is less likely to have negative impacts in farm-dependent areas in these states. He notes also that state regulations that enhance the bargaining power of farmers with processors in terms of increasing prices and other aspects of agribusiness contracts also should improve the conditions of farmers and communities.

If the goal is to improve the lives of rural people overall, researchers note that nonfarm programs are far more effective than farm programs. Farm programs tend to subsidize property owners, as opposed to the mass of rural people (Brown et al. 1992). Further, farm households

overall have higher median incomes than US nonfarm households (Hoppe and Banker 2010). Income transfers, food stamps, and other forms of federal intervention are beneficial to reducing poverty among needy rural people including farm labor.

Finally, researchers have identified general community attributes that may mitigate the potential for detrimental impact of industrialized farms. Stronger civic society, better quality nonfarm industries and firms paying higher wages, and a political-institutional environment that supports the workforce in general such as through support for unionized labor, higher minimum wages, and adequate public assistance tend to raise the well-being of all workers in a community. These same factors are likely to buffer the potential effects of industrialized farms (Lobao 1990; Welsh 2009).

Summary

The term “corporate farm,” while popularly used, is better understood as the industrialization of farming and growth of large-scale farms. In the United States, the vast majority of corporate farms are owned by families, and farm incorporation per se raises little in the way of inherent ethical issues. Rather, the industrialization of farming has been of concern to public well-being across the globe and has been studied in a vast scholarly literature. In a review of 56 studies, Lobao and Stofferhan (2008) found that in over 80 % of these studies, the authors reached conclusions that industrialized farms had largely detrimental impacts. These studies reported three sets of detrimental outcomes on socioeconomic well-being, social fabric or stability of community life, and environmental problems. Such relative consistency in findings continues to lead to ethical concerns and the longstanding hypothesis derived from Walter Goldschmidt’s work that industrialized farming jeopardizes public well-being. Yet the degree to which such concerns are warranted is context dependent and varied over time and place. Government policy, the nonfarm economy, local civic society, and



community institutions are contextual factors that appear to buffer potential impacts of industrialized farms while improving aggregate community well-being.

Cross-References

- [Economy of Agriculture and Food](#)
- [Farms: Small Versus Large](#)

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Corporate Social Responsibility and Food

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Synonyms

Corporate citizenship in the food industry; Corporate conscience in the alimentation sector; Responsible business dealing with food issues

Introduction

Corporate social responsibility (CSR) is connected with organizational accountability

related to the social sphere of corporate performance. CSR policies in the food industry include different activities that aim at protecting various stakeholders and the environment related in some way to the alimentation sector. CSR is also known as corporate citizenship, corporate conscience, or sustainable or responsible business. It aims to balance the expectations of stakeholders with legal, social, and ethical obligations. CSR in the food industry often concerns such issues as food-borne diseases, food poisoning, nutrition, fair trade, different alimentation needs, as well as cultural differences in food production and consumption.

There are both internal and external dimensions to CSR. The internal sphere is viewed from the perspective of employees, the external one is viewed from the perspective of various stakeholders. For example, the perception of individuals living near the food factories, mass media, suppliers, and customers is taken into account. CSR concerns various places, from factories to home kitchens.

There are several fields of interest in contemporary CSR in the food industry: (1) food quality, which includes such topics as nutritional composition, taste and visual aspects of food, certifications, and regional culture; (2) food sovereignty, which focuses on the right of local producers to manufacture regional food; (3) human welfare, which concentrates on conditions in the workplace; (4) animal welfare, which is connected with the proper handling of animals in food production; (5) ecological sustainability, which focuses on the usage of natural resources in producing food; and (6) transparency and traceability, which are connected with the opportunity to get acquainted with information on food production and various sources of food products (Deblonde et al. 2007).

The scope of CSR activities in various food-oriented business entities varies. Some of them stress all dimensions of their activities; they take care of employees, customers, natural environment, and society. As far as employees are concerned, companies from the alimentation sector highlight in their CSR policies that they are concerned about their workers, by offering them,

e.g., medical packages, nutritional meals at work, and flexible working hours. As far as CSR for customers is concerned, companies aim at promoting healthy nutrition and lifestyle, paying attention to quality, and offering additional services for purchasers. Another popular sphere of interest for CSR-oriented companies is taking care of the natural environment. The companies operating in the food industry stress that they offer products in ecological packages or they use limited water resources in food production. As far as the societal dimension is concerned, companies underline that they help people in need, by, e.g., collecting food in their shops or spending some percentage of their income on charities.

Corporate social responsibility in the food industry is connected with the perception of risks (Bielenia-Grajewska 2013a). The increased role of communication media has enhanced our awareness of food risks. Often people perceived risks as more dangerous than they really are. But often people perceive dangers as less risky than they are in reality. Thus, due to the optimistic bias, individuals may recognize risks in the wrong way or claim that some risks do not concern them (Miles et al. 1999).

In the case of potential situations related to risks, optimistic bias may concern, for example, the geographical area the food product stems, although nowadays food distribution is not restricted geographically. Another optimistic approach to food risks may be related to one's nutritional style or the age of already affected victims. Risks and CSR are also characterized by the potential juxtaposition of dangers, such as conflicting risks. For example, a factory may be the source of chemical risks in the neighborhood but, at the same time, it may be the only place of work for the local community (Heath 1994).

Methods in Analyzing CSR

There are various methodologies that can be used to analyze CSR in the food industry. Some scholars adapt qualitative and quantitative approaches, used in such disciplines as social

studies and humanities, to observe how CSR is identified by various interested groups. Another option is to rely on discourse studies to show how messages are created to tailor the communication needs of various stakeholders and how these messages are understood by the target audience. Apart from the mentioned methods, some research groups work on special scientific methodologies for examining ethical issues in the food industry. They have created such tools as the ethical matrix, the ethical Delphi, the consensus conference, and the corporate moral responsibility kit that can be applied to study ethics in the alimentation sector (<http://www.ethicaltools.info>). For example, the ethical Delphi method focuses on the exchanges of expert opinions and arguments on ethical issues. A series of questionnaires are sent to geographically dispersed experts to facilitate collecting and clarifying knowledge on ethical notions (Millar et al. 2006).

CSR Communication

In the case of food risk communication, dangers should not only be highlighted but the way they can be effectively combated by the company should be discussed as well. It is not enough to notice that some problems appear and inform potential stakeholders about possible difficulties but additional information should be provided on how an organization plans to deal with such crises. In addition, feedback and suggested actions should be tailored to diversified stakeholders. One of the factors shaping CSR communication is the type of risk and its relevance for diversified interested groups. Customer concerns in relation to food-related jeopardies can be categorized as follows. The first group of dreads is the one that is important to all consumers and focuses on food security. The second set entails the notions of interest only to some groups of people, taking into account their lifestyle or nutritional preferences. The third group is connected with public opinion and how food products influence community and society (Brom 2000). Depending on the type of risk, the source of CSR-oriented information should be selected.

Sources of Information on CSR in the Food Industry

Effective communication on CSR issues should focus simultaneously on various aspects, on external and internal dimensions, and on online and offline spheres of interactions. As far as information on food safety is concerned, the following sources can be mentioned: food packages, magazine articles, TV cookery programs, leaflets, TV documentaries, other TV programs, recipes, family, radio programs, doctors and health personnel, friends, school, posters, university, fridge magnets, and tea towels (Redmond and Griffith 2005). The popularity of the mentioned sources differs, taking into account the reason for searching data and the types of users who want to gain information. For example, older individuals are more likely to opt for standard media (newspapers, television, radio) than for online social networking tools in obtaining data on food issues. However, the selection of information source is often moment and context dependent.

As far as food crises are concerned, the dynamism of such situations makes online tools of communication more efficient since they are able to monitor the situation continuously. In addition, taking into account the mentioned sources on food issues, the process of knowledge transfer can be direct and indirect. For example, in the case of scientific articles, individuals read them to find relevant data. However, as far as television programs are concerned, learning on food aspects during programs related to other issues often takes place subconsciously.

With the growing role of the Internet in modern societies, the web constitutes an important tool of communicating CSR. There are various reasons why the online methods of communicating issues related to corporate social responsibility are gaining popularity. One of them is the relatively low cost of informing a potentially large group of stakeholders, regardless of their geographical location. Another hallmark is related with the possibility of changing content and inserting new information very quickly.

The last feature is especially important in the case of risk or crisis communication when

a company has to react to extraordinary situations and inform stakeholders about its envisaged activities. However, it should be stated that this feature can serve the function of a two-edged sword in communication; online networks can work as efficient tools for disseminating information but, at the same time, they can become the source of data about the failures of companies in dealing with food crises and the platform for exchanging news among stakeholders. Thus, online networking tools should be an important element of communication with the target audience to ensure efficient and reliable information sources.

Modern times can be characterized by *information overload* since data provided in various sources is excessive (Misra and Stokols 2012). Thus, organizations have to select effective tools within texts and messages to attract stakeholders to the published pieces of information or news. In the magnitude of offered informational sources, the written or spoken pieces of information must have features that make them outstanding among other informational sources.

Tools in Communicating CSR

There are various ways of informing stakeholders on CSR policies. One typology includes verbal and pictorial methods of communicating CSR. As far as the linguistic dimension of CSR is concerned, both literal and nonliteral methods of communication are used. Literal language encompasses all linguistic strategies that rely on their defined meaning; the selection of nouns, adjectives, and verbs is important in shaping CSR information. For example, the use of adjectives such as *careful*, *responsible*, and *reliable* shapes the positive attitude towards a company. The same applies to different verbs of action, such as *analyze*, *arrange*, *develop*, *improve*, or *participate*, that stress the active role of organizations in creating and sustaining responsible citizenship.

Nonliteral (figurative) tools of expression offer the unusual meaning of words and phrases. In the case of CSR communication in the food

industry, figurative language offers novel perceptions and own interpretations of communicated issues. Since nonliteral linguistic instruments have the element of surprise, astonishment, or curiosity in them, they generally attract one's attention easier than standard forms of expression. Although there are different types of nonliteral tools, such as idioms, puns, similes, paradoxes, and metaphors, the last ones belong to the most popular vehicles of organizational communication.

CSR Through the Metaphorical Perspective

There are various reasons for the popularity of metaphors in the CSR discourse. First of all, the usage of metaphors in sustainable dialogue facilitates quick and effective communication since images and symbols understood by the wide audience are used (e.g., Bielenia-Grajewska 2009). For example, some concepts from the domains of war, illness, or fairy tales are widely recognized by different stakeholders and offer immediate connotations. Secondly, in comparison with long and descriptive texts, metaphorical names are more efficient in terms of devoted time and used space. However, it should be noticed that symbolic language possesses some ambiguity in it and presents only selected aspects of some issues (Spicer and Alvesson 2011), and consequently, the responsibility is dislocated in communication. Some also claim that metaphors present meanings in a distorted mirror; they do not show the real situation and, consequently, the real danger connected with food risks is not described in detail.

Metaphors can be studied by taking into account the issue or the participants in the CSR discourse. The use of symbolic language in discussing food risks has the aim of exemplifying certain characteristics of them. For example, food-borne disease are pictured through war metaphors to show that food-borne illnesses are dangerous and, consequently, they require effective actions if one wants to defeat them. Their power is also stressed by comparing them to natural

disasters that can be difficult to predict, spread quickly, and affect a considerably large number of people. The food itself can also be pictured through, e.g., the perspective of a journey metaphor to show that alimentation can become a vehicle for transporting diseases (Bielenia-Grajewska 2013b).

In addition to the topic approach in the discourse on CSR, corporate citizenship can be studied by looking at organizations from the perspective of metaphors. Thus, such concepts as *organization as a teacher* are popular in CSR discourse. This symbolic interpretation stresses the educational character of a company that is directed not only at gaining profit but also at educating stakeholders on how food should be prepared or stored. In addition, an organization can be pictured as a protector that takes care of safety (Bielenia-Grajewska 2014). These discursive strategies create the company identity in the eyes of the public by showing the attitude of companies to CSR through organizational metaphors.

Future of CSR Research

Another possibility of researching the CSR communication is by applying the neuroscientific research. One example is neuroethics that studies morality in CSR and how individuals react to morally arguable actions. The interest of neuroethics depends on the type of industries taken into account. For example, medicine, together with such aspects as the influence of medical substances on human beings, potentially involves more risks than other business activities that do not possess any direct involvement with health (Bielenia-Grajewska 2013d). Consequently, the food industry is also likely to attract the attention of specialists involved in neuroethics, taking into account the risks connected with, e.g., food poisoning and food-borne diseases. For example, neuroimaging techniques can be used to study participants' responses to food risk communication conducted by CSR-oriented companies. Such studies may help in selecting the best method to communicate food-related issues to potential stakeholders.

These methods also offer the opportunity to study emotions and feelings concerning CSR that may not be disclosed by participants in the standard methods of questioning, such as questionnaires and interviews.

Summary

CSR in the food industry concerns different areas of investigation and concerns various stakeholders. Taking into account the growing competition in many sectors of the food industry and the accelerating role on social networking tools in exchanging information, organizations representing the alimentation sector should use diversified methods of communicating their attitude to the ethical, social, and legal sphere of organizational performance and establishing proper relations with the environment. Modern customers do not only take care of the quality and price of products offered on the market, but they become more and more aware of the sustainability of companies operating in the food industry. Thus, effective CSR policy is indispensable in the dialogue with diversified stakeholders.

Cross-References

- [Company Identity in the Food Industry](#)
- [Food Labeling](#)

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Cosmopolitanism, Localism and Food

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Synonyms

Global and local perspectives; Global ethics and local diversity

Introduction

Cosmopolitanism is the thesis that there are certain universal values and transboundary or global

responsibilities toward human beings anywhere. Localism is the thesis that local knowledge, local traditions, and local understandings of what is good for people are important to understanding and promoting well-being in any given locality. In respect to food and agriculture, typically a cosmopolitan is interested in questions like the following: since large numbers of people in the world are hungry or malnourished, what should be done to increase access to food, whether by aid, increased trade, or trade conducted under better rules; with new methods of agriculture; through reduction of food tariffs and other protectionist measures; and so on? Typically in respect to food and agriculture, the localist perspective will emphasize the importance of local knowledge and practical expertise and local experience of how to manage the land (agricultural techniques, what seeds work in what soils, etc.) and the importance of certain kinds of food that may have cultural, perhaps religious, meanings.

Do these two perspectives clash? The short answer is that they can but that they need not. If, for instance, a localist thinks that local values and conceptions are such that there cannot be a universal ethical perspective assumed by cosmopolitanism, then there is a clash. If, for instance, the cosmopolitan presents his/her view in such a way that local perceptions of value are judged to be wrong because they conflict with the cosmopolitan account of universal values, then there is a clash. But if cosmopolitanism is presented in such a way that its universalism is sufficiently sensitive to the local values and knowledge that localism points to, and if localism is so understood as merely to stress the importance of the local for the full understanding of human well-being and what is needed to promote or maintain it, but accepts a global framework of responsibility for promoting and not undermining those conditions of well-being so understood, then there is no clash at all. Indeed, the two perspectives somewhat complement each other in response to a third approach – or cluster of approaches – that reflects the projections of interest and power within national politics, in geopolitics, and in the agendas of many multinational companies.

This entry explores the issues framed in the way above in more detail. While the author does not conceal his preference for the latter complementary approach, the entry's main function is to map the issues, so it also identifies where the sources of tension arise as well. In the first half, the entry looks at cosmopolitanism and localism in general, and in the second half, it applies this to some issues to do with food and agriculture.

Cosmopolitanism

Cosmopolitanism comes from the Greek root “cosmo-polites,” literally “citizen of the universe,” but it is usually understood to mean “world citizen” or “global citizen.” For the Stoics in the ancient world, it was a metaphysical affirmation that human identity was as members of the community of all human beings subject to the natural law or universal moral law, not merely based on their contingent identities as members of particular states, families, etc. What is retained in later periods, such as the European Enlightenment, and in the twentieth century is the claim that human beings belong to one moral community, that all human beings are equal in moral status, and that they have in principle obligations toward all fellow human beings, both not to harm them and to some degree to help them (Brown and Kleingeld 2006).

This statement from Pogge, whose book *World Poverty and Human Rights* (2002) has become an important focus of cosmopolitan concern about world poverty, defines the position thus:

Three elements are shared by all cosmopolitan positions. First, individualism: the ultimate units of concern are human beings, or persons – rather than, say, family lines, tribes, ethnic, cultural or religious communities, nations, or states. . . . Second, universality: the status of ultimate unit of concern attaches to every living human being equally – not merely to some sub-set, such as men, aristocrats, Aryans, whites, or Muslims. Third, generality: this special status has global force. Persons are ultimate units of concern for everyone – not only for their compatriots, fellow religionists, or suchlike. (Pogge 2002, p. 169)

Thus, if one accepts the idea of being a global citizen, one may accept that one ought to support

aid projects, that is, positively to help. One may buy fair trade food in order to reduce one's dependence on economic systems that may be “free trade” but are either less fair or unfair. One may join an organization like Amnesty International to reduce the injustice and hardship experienced by particular individuals in other parts of the world. One's engagement as a global citizen may express itself politically as a “globally oriented citizen” (Parekh 2005), for instance, through membership of civil society organizations campaigning to get one's government's foreign policy changed over trade agreements, climate change measures, debt relief, and so on.

Cosmopolitanism also has profound implications for how institutions and corporate bodies are assessed, whether these are nation-states, international organizations like the UN and its agencies, legal systems, or commercial organizations. If the ethical starting point is accepted that all human beings are equal in moral status, then at the very least an assessment can be made on how well or badly such institutions further or thwart human well-being anywhere. Thus, cosmopolitanism often offers a critique of nation-states and their foreign policies or what transnational corporations do. Given, for instance, that secure and sustainable access to sufficient healthy food and clean water is among the fundamental goods that all human beings ought to have and have equally, do international trading policies help to realize this or help to do so as well as might be expected given political constraints, or not? If climate change is contributing to the reduction of such access for poor people, then does that fact add to the arguments for serious commitment from states to climate mitigation and assisting with adaptation?

There are two issues concerning cosmopolitanism that need to be identified, since how they are resolved will have a bearing on the relationship to localism.

First, insofar as cosmopolitanism is a commitment to the thesis that all human beings matter or that human well-being for any human being is of equal value, there is the question of how this well-being is defined, both in regard to

(a) how it is validated, e.g., by cross-cultural dialogue, philosophical theorizing, or whatever, and (b) what its content is, whether its content is thin(ner), leaving much to individual and cultural interpretation, or thick(er) in terms of richer conceptions of what real well-being consists in (whatever people themselves might think) often linked to the acceptance of some (commonly religious) worldview (Dower 2007). The danger with the former is that it may lead to allowing too wide a range of conceptions of well-being as being acceptable. The danger with the latter is that it leads to the projection or imposition of ideas derived from one culture or tradition, onto the rest of the world, thus constituting a form of cultural imperialism. But there is also a practical danger in the latter here, in that those with cosmopolitan ideals who are in positions of power or influence in respect to devising appropriate global policies, e.g., on food or agriculture, may, without wishing to so, make proposals that reflect universalist assumptions of a “one cap fits all” kind that are not sufficiently sensitive to what is needed in different circumstances. This is where in practice, whatever theoretical accommodation can be made, tensions between localism and cosmopolitanism can arise.

The issue of what kind of cosmopolitan conception of well-being is appropriate may not merely arise because cosmopolitans may put a very strong specific a conception of well-being into the picture; it can arise because those in power in national and international organizations come with a conception of human well-being which is actually very thin. The main example of this is the perspective of the libertarian, particularly the economic libertarian, whose conception of the central value of human well-being as being the exercise of liberty in a minimally fettered free market (Nozick 1974) leads to a disregard for the diverse nonmarket-driven values that localism often favors. The kind of cosmopolitanism that is consistent with localism is quite different from this, but it is worth noting that although free market advocates do not often present themselves as cosmopolitans, they are nevertheless cosmopolitans insofar as they have a core value – liberty – which they think is the key

to well-being everywhere and ought to be promoted everywhere.

The second issue concerns the nature and extent of cosmopolitan transboundary obligation. Cosmopolitanism can be presented in a strong form and as such can be in conflict with both localism and other theories that prioritize obligations to limited groups, but it can be presented in a less strong form and as such need not be in conflict with localism.

Two elements combine to create the really strong thesis; first, that if all human beings matter equally, then in moral decision making when people act for the good of others, they should not privilege the good of some human beings over that of others just because they belong to their country, their locality or community, or for that matter their family, or if they do (as people actually do!), there has to be some special justification for so doing. Second, they always ought to act so as to promote human well-being anywhere as much as possible. If these two claims are combined, a strong ethical demand is entailed that, for those who live in richer countries, since the suffering of so many people elsewhere in the world is so much greater than that in one’s own country, one ought really to devote most of one’s money and time to addressing these distant ills.

One version of this offered by Peter Singer in his article “Famine, Affluence, and Morality” (Singer 1972) is well known. He argues that just as a lecturer would at some cost to himself rescue a drowning child in a lake, acting on the principle “if it is in our power to prevent something very bad from happening without thereby sacrificing anything of comparable moral importance, we ought to do it,” so are those in richer countries ought to prevent deaths in poorer countries as much as they can. Countless articles are devoted to replying to its challenges. A similar kind of ethical challenge has become more prominent in recent years concerning individual’s responses to climate change. Should one do all one can to reduce one’s direct and indirect carbon footprint, with all that that entails for not just how (much) one travels, but what one eats (e.g., where food comes from, eat less or no meat, and so on)?

A weaker form of cosmopolitanism does not have these implications: it is the claim that one has significant but not overwhelming obligations to promote good anywhere and reduce one's contribution to harms anywhere and that while the privileging of the promotion of the good of some humans (especially family, friends, and oneself) can be justified, there are distinct limits to what is reasonable in this regard. Where the lines are drawn and how they are justified is a complex matter. What is important is the cosmopolitan perspective, which, if it were adopted by significantly large numbers of people, would lead to significant changes in public policy.

Localism

Localism refers to a range of approaches that prioritize the local (O'Riordan 2001; McIntosh 2001). The three main areas of prioritization may be seen as practical, cultural, and political. Localism may put emphasis on the need for greater production of goods – whether of food, furniture, arts and crafts, clothes, or whatever – combined with greater consumption of these goods by people in the same locality. The reasons for this may be environmental, for instance, in reducing food miles or goods miles or in reconnecting to the landscape (Cooper 1992); or they may be economic in that more economic functioning locally with less dependence on wider networks is good for people living in the locality because there is greater control (including the use of local currencies as in LETS) but also because it contributes to a stronger sense of community. Sometimes the production of goods locally is linked to a desire to preserve or reactivate traditional skills and crafts that are in danger of being lost. Particularly in poorer countries, the localist outlook may be expressed in a rejection of development models that are seen as coming from outside and the affirmation of local knowledge.

A communitarian basis for localism may sometimes be emphasized more generally – that people's identities are importantly grounded in the shared history and customs of a given locality. Furthermore, localism may stress the importance

of local governance and government with significant degrees of autonomy from larger political systems. Thus, in this respect, generally localism is contrasted with the idea of political control at a regional or nation-state level (though interestingly enough what is called bioregionalism is inspired by a form of localism).

More generally localism, at least in its modern formations often called *relocalism*, is a kind of reaction to the trends of globalization, insofar as globalization represents the pervasive impact of global economic forces on what happens locally in almost all parts of the world and also represents the penetration of global culture into the local, thus tending toward the homogenization of cultures (Scholte 2000). This response to the trends of globalization has led some writers to describe or advocate a process known as *glocalization*, in which the forces of globalization are counterbalanced by (re)localizing tendencies (Robertson 1992). But there may lie behind these localist ideas a deeper thesis, namely, that in emphasizing the local, one's prioritizing it either denies or downgrades the importance of what lies outside the local.

This kind of perspective is often identified as a form of communitarianism which may emphasize two things (Bell 2012). First, the values that are accepted in the locality are at least partly and significantly derived from that local community's shared history and traditions and get their validation from that fact, and as such, insofar as it is also claimed that values vary from one community to another, some thesis of relativism is accepted and therefore some skepticism toward the whole global ethics perspective (this is even more prominent in a view called ethical particularism which opposes the ethical generalism underlying cosmopolitanism (Dancy 2001)). Second, because of the reciprocal ties arising from people living together, the scope of people's obligations are first and foremost to members of their local community (or one's country as a political community), much less toward the world as a whole since it is not a community in the relevant sense. If people in a given local community (or for that matter the wider community of their state) feel some

obligations toward people in some other parts of the world, then this is an accident of the fact that some concerns have developed through their history, not a consequence of some cosmopolitan global ethics.

The Relationship Between Cosmopolitanism and Localism

It will be apparent from the account of cosmopolitanism and localism given that they can be consistent with each other but that they need not be. The reason for this needs to be spelled out.

If cosmopolitanism is presented in a strong form that asserts that a general and complete account of human well-being can be applied to any situation anywhere (so that local understandings, if different, are wrong), then it conflicts with localism in any form. If cosmopolitanism is the claim that all obligations have to be justified as consistent with or in some way contributory toward the promotion of well-being of humans anywhere, it conflicts with localism in any form that asserts locally based obligations. Conversely, if localism is asserted in a strong form (less likely) that all values are locally sourced and validated, it conflicts with any cosmopolitanism that asserts a universal account of value. If again localism claims that obligations are primarily with fellow localists, it conflicts with any cosmopolitanism that asserts significant transboundary obligations.

There is of course left the third, arguably more common, alternative. Cosmopolitanism is asserted in some form to the effect that whatever universal values there are, they are to be so understood that they are contextually sensitive and open to many local interpretations (Pogge 2002); and indeed, it welcomes in general the maintenance of or return to what localists favored – local sourcing of food and other goods, a strong sense of local community, robust local governance, and so on – as furthering human well-being. Cosmopolitanism also asserts that however much new scientific and technical developments are promoted, that is done in such a way that allows for the input of local wisdom

and knowledge, and that global obligations are not so strong as to undermine the range of rights and obligations people have in local communities. Localism is asserted in such a way that while it resists pressures from outside toward uniformity or unduly economic or consumerist models of well-being that may come from the state or wider processes of globalization or resists excessive loyalty to wider entities such as the state, it does acknowledge a common global value framework and the idea of transboundary or global responsibility in principle and indeed welcomes it, particularly if that cosmopolitan perspective actually supported local communities that resist pressures from other sources such as central governments and big business.

The entry now turns to some issues concerning food and agriculture to illustrate further the above framework (Blatz 1991).

Access to Food

Whatever else cosmopolitans insist on, they insist on claiming that all human beings should have access to the conditions of a reasonable life or a life one has reason to want to lead (Sen 1999) and that this includes minimum access to such things as adequate healthy food, enough potable water, proper shelter and clothing, security against attack on one's person or property, education into relevant life skills, medical care, participation in communal decision making, etc. (Pogge 2002). The aspect nowadays that is made explicit (what was implicit before) is that access to those things is sustainable. If a cosmopolitan uses the language of rights – which he/she need not – he/she will talk of the human right to food, water, etc.

Almost everyone would subscribe to such claims or at least to the ideal of a world in which these things were realized. Why then do over a billion of the world's population remain in absolute poverty with so little access to food that they are starving or malnourished? It is generally recognized that currently the problem is not that there is not enough food in the world – and indeed, many would argue that with improved

methods of agriculture or switching to much more nonmeat-based diets (since feeding grain to animals is a very inefficient way of producing protein), even more food could be produced.

However, one dimension of the planet's finiteness is its finite capacity to produce on a renewable basis food for humans, and at some point, increasing human populations will bump up against these limits; and indeed, this capacity may be being reduced through land degradation. The other two dimensions of finiteness are the planet's finite capacity to provide nonrenewable resources and its finite capacity to absorb the effects of human activities without deleterious effect, as can be seen with species loss, pollution, and CO₂ emissions. But the three dimensions are all interlinked in practical terms to the challenge of devising appropriate strategies for "feeding the world" and so on. In some ways, especially in light of the likely effects of climate change, this aspect – the global capacity to produce enough food – is beginning to play a role in global thinking about food under the banner of "food security," an agenda which is as much driven by concerns of wealthy countries about their continued access to the foods they want as by concerns for access to food for the very poor. Food insecurity has been the lot of the very poor on a large scale for decades.

The reason currently however for lack of access to enough food for the poor is not one of absolute scarcity but one of distribution, in which very poor people do not have access to sufficient food either because they do not have enough fertile land to grow it or because they do not get it from others through either having enough resources to acquire it in economic transactions or happening to be the recipients of food through aid programs. Since these are not natural facts (such as acute shortages caused by natural disasters) but facts for which the causes lie in human *decisions* which could be different, it is from the point of view of many cosmopolitans an issue of justice, including global justice (Pogge 2001), since the actors involved include actors elsewhere. These are nation-states, business companies, citizens, and consumers in other parts of the world, all of whom could act differently.

It is one thing to say that people all have a right to food (or, e.g., water), and another to say that this right to food (or water) has a priority over other rights because it concerns the basic minimum conditions of life. Consider property and land rights within any country including poor countries. How far do they impede fair distribution? Should there be a radical land reform? Consider intellectual property rights such as those enshrined in TRIPS (Trade-Related Aspects of Intellectual Property Rights) agreements, which now form a major part of the WTO (World Trade Organization) agenda in which large companies are able to exert such powerful influence in determining the price of seeds that poor farmers have to pay. Consider the perspective of countries pursuing their economic interests individually or collectively, as in the case of EU's (European Union's) CAP (Common Agricultural Policy), with protectionist measures. This is commonly seen as asserting their rights to national self-interest behind which is the right of their citizens to enjoy a much higher standard of living than that experienced by the very poor. Are these acceptable, given the effects on the very poor?

Controversies exist over whether such regimes with their embedded rights contribute to extreme poverty and the poor's access to sufficient food and, if so, whether they are justified if they have these effects. On the whole, most modern cosmopolitans – other than those who are libertarians in their approach or think that in the long run such regimes tend to the general good (as an aspect of what is sometimes called "trickle down" development) – question to varying degrees such regimes and see their claimed justifications stem mainly from alternative paradigms of international relations or business ethics.

Be that as it may, whatever the arguments are in what is sometimes called the "politics of food" (Tansey and Rajotte 2008) – for and against political and institutional changes as a significant contributory factor in enabling poor people to be less poor and to have more food, it is commonly assumed, both by those who see it in cosmopolitan terms and those who do not, that a major contribution to reducing food shortages

for poor people themselves is practical change, for instance in agricultural methods.

Aid programs – whether national bilateral or multilateral or government based or NGO based (nongovernmental organization based) – of course play their role, not merely in emergency or humanitarian situations but in providing development assistance. The difference between emergency aid and development assistance can be illustrated by a quotation from De Schutter, “Save in situations of natural disasters or civil strife, the right to food is not the right to be fed; it is the right to feed oneself in dignity” (De Schutter 2009, p. 8). The aim of the latter is (or ought to be) to empower poor people either to produce more food themselves or to acquire more wealth so that they can buy more food. Such aid programs will often involve the provision of agricultural equipment, providing better access to water – a critical factor not just for drinking water but agriculture itself – or the introduction of new agricultural techniques.

This now leads to localism. Localists living in poorer countries may protest at a lot of what is done or alternatively not done as contributing to their not having enough access to food. Poor people may feel that their opportunities to grow food are thwarted by larger economic forces over which they have no control – property investors from the cities, large-scale operations of transnational companies, the development of monoculture regimes producing cash crops driven by export markets, seeds they have to buy at high prices, and so on. The Green Revolutions have been seen as having their downsides – for instance, the very poor not being able to afford the fertilizers or pesticides that are needed to get the extra benefits of the high-yield crops. In other words, they may protest at the lack of control they have in their communities.

In respect to the aid given by donors, again there may be concerns that not sufficient attention is paid to local knowledge about farming techniques or about local seeds (which may be well adapted to local terrains, etc.). The outside expert may not recognize that sometimes the poor are not disempowered by their lack of appropriate agricultural knowledge but by other factors.

Much of the attraction to the approach of E.F. Schumacher’s *Small Is Beautiful* (Schumacher 1973), later continued in the work of Practical Action, which he founded under the name the Intermediate Technology Development Group, was the recognition that high-tech solutions were not right for many local conditions.

It should be apparent that these concerns of a localist kind are not as such opposed to cosmopolitan concerns about “feeding the world.” Rather what they are up against are tendencies that stem from other ways of thinking connected with inter alia: the rights of nation-states to pursue their national interests even at the expense of what would be better from a global point of view, the rights embedded in economic regimes within countries that trump the rights of the poor, and the rights of companies to maximize profits. Of course some cosmopolitans might have some sympathy for these rights, but generally nowadays cosmopolitans are as concerned as localists about these factors.

The Environment

There are many environmental issues that have an impact on food and agriculture, but the focus here is on two issues – climate change and water. Clearly climate change is likely to affect, if it is not already affecting, the capacity to grow food in particular places and areas, because, for instance, of reduced rainfall, and much of this change is occurring or will occur in parts of the world where poor people live. So whatever general arguments there are for mitigating emissions to reduce the collective impact on human well-being in the future, there are good reasons both to mitigate the particular impacts on the world’s poor now and also to help with adaptation (Garvey 2008). Here, there is largely convergence between the cosmopolitan who says that one has serious reasons to reduce one’s emissions in various ways for the good of all in the world and the localist who, other things being equal, wants his/her environment to remain a “field of significance” he/she positively values (Cooper 1992).

A more complex relationship emerges in the case of food miles. If there are significant carbon costs from long-haul transportation, then one way of discharging one's environmental responsibility to reduce emissions is to reduce dependency on such foods. There are two other kinds of reason; first, as noted before, localists may argue for this since locally sourced food contributes to local economy, identity, and community; second, as a measure in a country's food security policy, it makes it less dependent on imports from other parts of the world.

However, if such preferences for local food and less reliance on imports from distant countries were to become widespread, it would have major implications for what happens in the countries where these foods are produced, which might not always be well received by local communities there. Thus, certain measures may not be to the advantage of all localities. Localism is not an approach that produces a preestablished harmony of interests, and a cosmopolitan's wider perspective may be needed to help lessen conflicts of interest where they arise. For example, the fair trade movement is not premised on reducing food imports but making them more consistent with the principles of global justice, so what's good for one community – more locally sourced food – might not be good for another, namely, less food wanted that is fairly traded. In this case, a resolution might be a reduction only of goods traded otherwise, that is, goods that come from business corporations in poorer countries that are not pro-poor and indeed may take up land in competition with what people want in local communities in poorer countries.

An interesting aspect of this relates to the issue of water. Access to water is a critical issue for the future of agriculture since agriculture depends heavily on the amount of water available in given areas. It is well recognized that one of the sources of conflict in the future will be competition between countries for water, particularly water that runs in rivers through several territories. But at another level, from an ethical point of view, the most critical issue has to do with what is needed so that all people have secure and sustainable access to sufficient potable water

and sufficient water for the production of crops that they need, etc. The right to water as the right to sufficient potable water for health and for adequate economic livelihood needs to be contrasted with and prioritized over any claimed right to water as a right that one has to any amount of water one wants (and can pay for) to satisfy one's desires for affluent living and to maintain the industries that produce the goods associated with affluent living. It is not that it is wrong to want these things as such, but an entitlement to the water necessary to these things is not of the same moral order as the basic right to water. At least this is what a cosmopolitan who was not a libertarian would claim.

This is not just a theoretical point. Increasingly it is recognized that what happens in one part of the world has an impact on other parts of the world even in regard to water. The amount of water one actually uses needs to be distinguished from the amount of water "embedded" in the goods that one uses (called "embedded" or "virtual" water). Consider a cup of tea with milk and sugar: maybe there is 1/3 l here. But consider the water used to grow the tea and sugar and to rear the cow, estimated to be over 30 l (BBC 2010). This is a rather dramatic example of what is called one's indirect environmental footprint. Its relevance to what happens in other parts of the world is this: if large amounts of water are used elsewhere to produce things that people want – not just food but the whole range of goods and components for goods – what impact does that usage have on the distribution of access to water in the other parts of the world where the goods come from? Sugar and tea plantations may not necessarily be the best use of agricultural land or the water needed for them from the point of view of what would be best for the very poor who may have very limited access to water needed for life and livelihood.

Another example sometimes given that illustrates these issues and others raised in this entry is that of cut flowers flown from developing countries. Whether the development of this kind of use of agricultural land is to be welcomed raises big issues. It is something that can be questioned for all sorts of reasons, not just over the use of water

of course, from both cosmopolitan and localist perspectives. Should land be used for “luxuries” for distant people where people are starving? What about the environmental costs of air transportation? Does not however the very raising of these questions strike at the heart not only of the international free market but also of the rights of entrepreneurs to use land to grow whatever they want – whether it is flowers, tobacco, or foods – for which they see that there are markets, local, national, or international? Arguably these questions do not do this. Rather they provide a reminder that there are many considerations other than the exercise of economic liberty that ought to influence the decisions people make, whether as individuals or as members of commercial or political institutions, locally, nationally, or globally.

Conclusion

Cosmopolitanism and localism offer very different perspectives on what is ethically important. In examining issues to do with food and agriculture, it can be seen that sometimes they are in tension with each other. But more generally there are convergences of ethical concern in the face of economic and political pressures from other sources.

Summary

Cosmopolitanism asserts that there is a universal value framework which includes significant transboundary obligations. Localism asserts the importance of local values and knowledge. They can conflict if cosmopolitanism questions the importance of local values and knowledge or localism questions significant transboundary obligations. But they can be combined as the thesis of global responsibility to promote the conditions of human well-being partly defined in localist terms. Often they provide a common approach opposed to trends derived from national politics, geopolitics, and the global economy. In the second half of the entry, these approaches and

their relationship are further illustrated with discussion of issues to do with food and agriculture, especially access to food, climate change, and water.

Cross-References

- [Biotechnology and Food Policy, Governance](#)
- [Climate Change, Ethics, and Food Production](#)
- [Environmental Ethics](#)
- [Ethical Activism with Consideration of the Routine of Food Culture](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Food assistance and International Trade](#)
- [Food Security](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [Public Institutional Foodservice](#)
- [Water, Food, and Agriculture](#)

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Cross-Contamination of Crops in Horticulture

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Synonyms

Adventitious presence; Coexistence; Gene flow; Genetic drift; Genetic pollution; Transgene escape

Introduction

Cross-contamination of crops in horticulture is an old phenomenon. Farmers have long experienced

genetic material from a neighbor's fields finding its way into their crops. However, the recent development of transgenic crops, often referred to as genetically modified (GM) crops or genetically modified organisms (GMOs), is the source of much recent controversy regarding cross-contamination. While many countries have experienced rapid adoption of GM technology, other countries have received it with suspicion and precaution. The varied reactions to GMOs have for the last several decades given rise to conflict and debate on scientific, political, and ethical issues. Cross-contamination has become a frontline in these debates. For example, in 2011, the US Department of Agriculture (USDA) approved GM alfalfa for use. Due to predicted widespread contamination of organic alfalfa with GM material, organic producers felt that the organic status of their crops was under threat. The USDA's decision led to heated debate and litigation where organic and environmental groups were pitted against the government and biotech industry.

The goal of this entry is to identify and clarify the moral and ethical issues arising from the inevitable movement of genetic material between GM and organic and non-GM crops. This goal will be achieved by (1) listing the ethical questions that must be answered if GM, non-GM, and organic producers are to coexist, (2) highlighting the importance of the role that the precautionary principle and the principle of substantial equivalence play in coexistence policies, and (3) discussing two moral theories that can be used to frame the debate over cross-contamination of crops in horticulture.

Cross-Contamination and Coexistence

Like cross-contamination, coexistence is not new to horticulture. However, the advent of GM crops has made coexistence a controversial issue and an area where ethics research is needed. Coexistence roughly refers to different production systems operating in proximity in ways that minimize the negative impacts one system might have on the other. The concept of coexistence is essentially ethical, as it implies a just or fair

distribution of the risks, benefits, and costs of coexistence. In the case of GM crops and cross-contamination, coexistence largely means mitigating the amount of GM material that inadvertently finds its way into non-GM and organic crops. GM material can contaminate non-GM and organic crops in several ways (e.g., seed impurities, cross-pollination, volunteer seeds from previously planted crops, and residual material in harvesting machinery and storage facilities). The extent of cross-contamination can vary greatly depending on many factors. For example, papaya pollen is heavy and does not travel very far, whereas canola-rapeseed pollen is light and can travel long distances. There is, then, a greater threat for cross-contamination in canola-rapeseed than papaya due to pollen flow.

Adventitious presence has long been used to describe the occurrence of impurities (e.g., weed, dirt, and insects) in agricultural products. Since it is all but impossible to harvest a pure crop, maximum levels of adventitious presence (impurities) in an agricultural product can be regulated. The coexistence framework assumes that GM material in non-GM and organic crops can be treated as adventitious presence. It also presupposes that GM and organic crops are in principle compatible, and the way to resolve conflicts is to find the strategies that minimize conflicts created by economic losses due to adventitious presence. However, some opponents of GM technology see transgenes as dangerous pollutants that cannot be recalled once they have escaped into the environment. These opponents do not think it is legitimate to apply the concept of coexistence to the problem of cross-contamination and GM crops; they argue that describing GM material as relatively benign adventitious presence underestimates the risks associated with transgenic technology.

However, the problem coexistence designed to resolve is the possibility that organic and non-GM producers will suffer economic loss due to contamination with GM material. For decades, the number of consumers willing to pay higher prices for organic products has been increasing. Moreover, organic consumers expect, among other things, that organic products do not contain GM material. Simultaneously,

production of GM crops has rapidly increased. The growth of these two industries has brought them into conflict. The crux of the coexistence problem, then, is that organic and non-GM producers hoping to receive a price premium for growing “GM-free” crops can suffer economic losses if their crops become contaminated with GM material from impure seed batches, cross-pollination, etc.

Coexistence and Philosophy

While discussions of coexistence often focus on economic and technical issues, the debate over coexistence is often driven by deeper philosophical commitments. Many who oppose GMOs and agricultural biotechnology see this new technology as unnecessary, inherently risky, and ethically suspect. Further, it is often seen as a means for further advancing the hegemony of industrial agriculture, which they believe is environmentally unsustainable and socially unfair. A Spanish organic farmer summarizes these views, remarking “Why do we need to have GMOs if this technology creates uncertainties, contamination, homogenizes agrarian cultures, the consequences concerning health effects are not clear enough and there are huge questions related to ethical issues” (Binimelis 2008). For these reasons and others, many people and groups have taken a precautionary approach to GM crops: they are assumed to pose a threat to health and the environment until proven otherwise. The International Federation of Organic Agriculture Movements has come out against biotechnology “because of the unprecedented danger this presents to the entire biosphere, and particular economic and environmental risks it poses to organic producers” (Verhoog 2007). On the other side of the debate, biotechnology advocates see GM crops as substantially equivalent to conventional crops. From this view, no agricultural crop is natural or pure, and GM material should not be labeled as an exceptionally hazardous pollutant (Bruce 2003). In addition, scientific promoters of transgenic technology see it as a major breakthrough in the history of agriculture. This is in

large part a philosophical debate over the essential nature and morality of organic agriculture versus GM agriculture: it is politically polarizing and not easily resolved.

Coexistence “brackets” these philosophical issues by presupposing a liberal moral philosophy, guided by the principle of liberty and the harm principle. The principle of liberty requires the state to be neutral on questions of moral and philosophical significance to individual people and groups, i.e., questions about the good and the good life. It allows individuals the freedom to pursue their personal convictions on how to best live their lives, unless they harm others. At this point, the state can no longer remain neutral and has an obligation to intervene to prevent harm. The coexistence framework, then, attempts to be politically neutral on the moral and metaphysical dispute between organic and GM agriculture. Coexistence as a liberal concept means creating a system that is fair to a plurality of cropping choices.

Coexistence and Ethical Questions

Due to the growth of the organic and GM industries and the problem of cross-contamination, the liberty of organic and non-GM producers has come in conflict with the liberty of GM producers (Verhoog 2007). While the principle of freedom of cropping requires the relevant government agencies to be neutral and fair in creating a regulatory environment, in reality, neutrality and fairness are difficult to achieve. Regulations aimed at coexistence can easily prejudice one agricultural system over another. Furthermore, regulations do not admit straightforward technical solutions; regulatory frameworks for coexistence rest on moral and political decisions that distribute risks, benefits, and burdens. For instance, setting of standards (or not) for levels of purity in organic and non-GM crops requires compromise.

Many organic farmers and consumers hold that the integrity of organic products requires them to be 100 % GM-free. However, if a GM crop is grown near a sexually related non-GM or organic crop, some contamination is all but certain. It is not economically practical to keep crops

in complete isolation. Coexistence requires organic farmers and consumers to compromise and accept some level of GM adventitious presence. But if the levels of purity are set too high, the measures required to mitigate cross-contamination are too costly to make coexistence possible. Coexistence removes the liberty to choose completely “pure” organic products, and stringent standards of purity remove the liberty of farmers to choose to grow GM crops.

For policymakers to navigate this ethical dilemma, they must answer the following types of questions: What levels of GM material in organic and non-GM crops are acceptable? What measures should be implemented to meet these standards? Who has the duty to implement these measures? Should the burden be on GM farmers to “fence-in” their crops or should the burden be on the non-GM and organic growers to “fence-out” GM material? If contamination occurs, how should organic and non-GM producers be compensated for economic losses? The USA and the European Union are approaching these questions very differently, which has led to contrasting approaches to coexistence. To understand the ethical issues here, it is instructive to contrast these two approaches.

Coexistence in the European Union

The EU is officially committed to coexistence and freedom of cropping. However, the adoption of the precautionary principle to regulating biotechnology seems to have created an environment where some feel the burden on GM is too large. The EU has adopted a two-tier approach to setting thresholds for GM adventitious presence in products. In regard to the question of thresholds, the EU has regulated that there is a 0.9 % limit applied to approved GM products and a zero tolerance threshold applied to unapproved GM products. This is a fairly stringent standard for purity – the USA has no maximum standard, and Japan’s threshold is 5 %. The 0.9 % limit, then, is a practical, political compromise within the European context that has left some people on both sides of the GMO debate unhappy.

Questions about measures used to meet these standards and who has the duty to implement them are left to the EU's member states progress toward coexistence varied across Europe. For example, Spain has made the most progress on implementing a legal framework for coexistence, whereas Austria has sought to remain GM-free. There are several techniques that can be used to mitigate adventitious presence below the 0.9 % threshold, for example, creating buffer zones around crops, staggering the planting of crops so flowering occurs at different times, and cleaning harvesting and processing machinery and storage facilities.

The question on compensation for financial losses due to GM contamination is also decided at the level of the EU's member states. Because there are so few GM crops grown in the EU as of 2013, this is not a significant problem. However, the liability schemes throughout the EU place the burden on the GM industry and GM growers. If an organic or non-GM farmer can show that contamination leading to economic losses occurred due to negligence on the part of a neighboring GM farmer, that GM farmer can be held liable for full restitution of losses. If contamination occurred accidentally, the organic or non-GM farmer would be reimbursed through a compensation fund. The mechanism for endowing the compensation fund varies by member state, but in all cases, compensation comes in some way from GM growers or the GM industry.

In Europe, coexistence has become "a focus of opposition to GMOs," since it "arguably constitutes the last rampart against the full commercialization of the GM crops that have now passed through the authorization stage" (Bodiguel et al. 2010). Several authors have objected that the way coexistence is being implemented in the EU is placing an unfair burden on the biotech industry and those who wish to grow GM crops. They assert that many countries' approach to coexistence is constraining farmers' liberty to grow GM crops. In the journal, *Nature Biotechnology*, a 2008 article asserts that EU is going to "ridiculous lengths" to prevent cross-contaminations (Ramessar et al. 2010). In the same journal, a 2010 article wonders if the coexistence policy

in the EU, which was intended to remove the moratorium on GM crops, was simply a backdoor way of reinstating the moratorium (Devos et al. 2008). One major complaint is that some countries in Europe require excessively large and inflexible distances between GM and non-GM crops to prevent cross-pollination. They claim that these isolation distances are not scientifically justified and make it too difficult and expensive for farmers to grow GM crops (Ramessar et al. 2010). Ramessar et al. assert:

The scientific process appears to have been discarded by the EU and its member governments in the case of GM agriculture. Not only are the thresholds for adventitious presence far stricter than for conventional crops, but the isolation distances implemented to achieve such thresholds are arbitrary, excessive and appear to be politically motivated rather than to reflect scientific reality (Ramessar et al. 2010).

In summary, some argue the way coexistence is being implemented in the EU, specifically, the large isolation distances required by some member states, is "jeopardizing farmers' freedom of choice to grow GM crops" which "contradicts the European coexistence objectives" (Devos et al. 2008).

Coexistence in the USA

Like the EU, the USA is officially committed to coexistence and freedom of cropping. But unlike the EU, the USA rejects both labeling GMOs and establishing thresholds for GM adventitious presence in organic and non-GM products. This is largely because the USA applies the principle of substantial equivalence to biotechnology, whereas the EU applies the precautionary principle. The argument against labeling asserts that labeling GMO crops implies that GMOs are different than traditional crops and may pose greater risks to human and environmental health, which contradicts the principle of substantial equivalence. Furthermore, because organic standards in the USA are process based, as long as GMOs were not used in the production process, GM adventitious presence does not violate standards,

and products containing GM adventitious presence can be labeled USDA Organic. Thus, on the issue of threshold levels of GM material in organic product, the relevant US regulatory agencies are currently silent. For many organic advocates, regulatory silence does not equal neutrality. They believe it is creating a system that places an unfair burden on organic and non-GM producers to achieve coexistence.

In the absence of government labeling and mandated thresholds, a nonprofit, natural foods advocacy group has stepped into that role. To honor consumers' expectations and the philosophical commitments of organic producers and wholesalers to exclude GMOs, organic companies are starting to participate in the Non-GMO Project. The Non-GMO Project is a third-party verification certification program that sets standards for detection of GM material and reduction of the risk of cross-contamination. The Non-GMO label follows the EU's 0.9 % threshold. Crops exceeding this level cannot be certified non-GMO. Many large organic companies are participating in the program and refusing to purchase organic products that do not meet this standard.

Because the USDA does not label GMOs, there are no regulations mandating measures to prevent GM adventitious presence. However, organic consumers still have an expectation that organic products are "GM-free." This means that the burden of preventing GM contamination falls on organic and non-GM producers. The argument for placing the burden on organic growers and non-GM producers to "fence-out" GM material asserts that because these farmers receive a price premium for organic and non-GM crops, it is their duty to take the necessary measures to meet the standards of their contracts. If that requires minimum levels of GM material through non-GMO certification or by meeting EU standards, it is the grower's responsibility to assure they meet those levels. In the USA, adventitious presence is a risk that the organic and non-GM farmers must accept. To mitigate this risk, organic farmers must learn if their neighbors are growing sexually compatible GM crops and take measures like creating buffer zones and staggering planting to mitigate GM contamination.

Many organic and environmental groups believe that the current system in the USA is unfair. They argue that the biotech industry and GM farmers should bear more of the burden for keeping GM "pollution" out of organic and GM crops. For example, in a 2010 position paper titled "GMO Contamination Prevention and Market Fairness," the National Organic Coalition asserts that "Farmers who seek to avoid GMOs must not continue to be solely responsible for contamination prevention and cleanup and/or be forced to give up growing certain crops. For this to happen, direct government intervention is needed to protect livelihoods and local economies."

In 2012, the USDA Advisory Committee on Biotechnology and Twenty-First Century Agriculture (AC21) published "Enhancing Coexistence," a report to the Secretary of Agriculture that sheds light on the debate over cross-contamination and coexistence in the USA. The Advisory Committee is composed of a diverse group of stakeholders representing both the organic and GM sides of the controversy. The consensus recommendations focused on measures to facilitate coexistence and compensation. Importantly, the report affirms the principle of substantial equivalence as a foundational premise for regulation, stating that "the presence of genetically engineered crops does not create risks that are novel in agriculture" (AC21). (Several committee members in the comment section objected to this premise and referred to the precautionary principle instead.) In general terms, the report places the major emphasis on educational outreach to farmers and others involved in the food production system as a means of achieving coexistence. These efforts would aim at building farmer-to-farmer cooperation and local voluntary solutions. In addition, the report recommends further research on promoting coexistence in US agriculture. Interestingly, those on the committee associated with the agricultural biotechnology industry had far fewer reservations with the report than those who were associated with the organic industry. In the comment section, the opposing committee members voiced that these recommendations favored the GM industry.

One member commented that “‘successful’ coexistence means that the USDA must take its finger off the scale in favor of biotechnology.” This member felt that the biotech industry and GM producers have “no skin in the game, and the financial burdens remains squarely on the backs of non-GMO agriculture.” Several who signed the consensus report did so to support the effort as a “step in the right direction,” but felt that it fell far short of recommending a system that would be fair to organic and non-GM farmers. One member felt that the “[the committee] did little to allocate responsibility for minimizing and preventing problems.” Another commented that “The farmer choosing to grow non-GM crops should not be expected to bear the primary responsibility and costs for avoidance strategies and/or possible market loss due to something they have no control over.” In summary, the above comments reflect the opinion of many involved with the organic industry in the USA: the system is unfair to organic growers, and the report’s recommendations for education, voluntary cooperation, and further research fall short of distributing the burdens of coexistence fairly.

In regard to the question of compensation, the report recommended that “compensation mechanisms should be modeled on existing crop insurance.” This means that organic and non-GM producers would bear the burden of buying crop insurance to be protected from the risk of financial loss due to GM adventitious presence. The report also recommends that the government take steps to keep the insurance affordable. While all but one member signed the consensus report, there was widespread disagreement on the compensation mechanism.

In general, the reaction to the AC21 report from the organic industry was largely negative. There was a feeling that both the coexistence recommendations and the compensation mechanisms favored the biotech industry and GM growers.

The contrast between the EU’s and US’s approach to coexistence makes clear that the decision to apply the precautionary principle versus the principle of substantial equivalence is a watershed issue. To review, the precautionary

principle places a burden on innovators to demonstrate that new GM crops are safe. GM crops are treated differently than traditional crops because they are seen as creating novel health and environmental risks in agriculture. Substantial equivalence assumes that GM crops pose safety threats that are similar traditional crops. In broad terms, GM crops should not be treated differently than traditional crops. As demonstrated above, using the precautionary principles or the principle of substantial equivalence leads to conflicting answers on the four basic coexistence questions regarding setting threshold levels, instituting mitigation practices, assigning duties, and providing compensation.

Despite the large body of literature on cross-contamination and coexistence, more research needs to be done on ethics of applying the precautionary principle versus substantial equivalence to this issue. Further, more inquiry and discussion are needed on the ethical issues arising from the four basic questions (listed above) requisite to achieving coexistence. The final issue that requires attention is the moral theory used for framing the conflict over cross-contamination, which is the subject of the final section.

Two Moral Theories for Framing Cross-Contamination

The long-standing debate in political philosophy between liberalism and communitarianism provides a lens through which to view the controversy over cross-contamination and an area for further ethical research.

As has been seen, the notion of coexistence is grounded in liberalism as it is premised on freedom of choice, state neutrality, and the harm principle, thereby leaving the difficult moral and metaphysical debates between GM and organic agriculture for individuals to decide. By way of contrast, the moral theory of communitarianism holds that it is not possible or desirable for the state to remain neutral on questions of the good or the good life. It asserts that liberalism’s focus on individual choice misunderstands the nature of the relationship between human agency,

morality, and politics. For communitarians, political structures and human character are ultimately shaped by conceptions of the good and the good life. Below the surface of the controversy, the debate about cross-contamination is driven by deep disagreements about food, agriculture, and the good life. The coexistence framework may not be adequate to resolve these disagreements.

Individuals on both sides of the debate argue that coexistence between organic agriculture and technologically driven, intensive agriculture, which includes biotechnology, is ultimately not possible or desirable. On the one side, advocates for biotechnology have argued the organic movement is a dangerous impediment to the scientific and technological progress needed to feed a rapidly growing world population sustainably (Trewavas 2001, 1999). This position is more than a technical argument about solving the equation of production and population through innovation: it entails a vision of the relationship between science, technology, food, agriculture, and the good society. On the other side, organic advocates argue that biotechnology furthers an unsustainable and unjust agricultural system. Advocates for organic farming, agroecology, and neo-agrarianism hold that GMOs are incompatible with a vision that harmonizes the relationship between food, agriculture, the environment, and the good life. One of the central points of contention between these competing visions of agriculture and the good life is the goal of cultural and biological diversity.

Technologically driven industrial style agriculture has greatly increased crop yields. Production and efficiency are the central values associated with this vision on the relationship between food, agriculture, and the good life (Thompson 1995). However, in increasing efficiency, this approach has reduced cultural diversity (e.g., the preservation of small farms and farming communities) and crop diversity, both considered as goods by organic farmers and agroecologists (Altieri 2005). The norms inherent in these contrasting visions of food and agriculture may be incompatible. On this deeper level, then, the cross-contamination controversy is

about the meaning and significance of agriculture and food. If this is true, then communitarian moral theory might be a more profitable way of framing and investigating this controversy. Therefore, along with research on the ethical issues arising from the application of the concept of coexistence, another line of research would question the liberal framework that undergirds coexistence using communitarian moral philosophy.

Summary

This entry describes the controversy over cross-contamination of crops in horticulture due to the conflict between organic, non-GM, and GM crops. It also identifies the central ethical questions that need to be answered to make coexistence between these different cropping systems fair or just. In addition, it points out the importance of the precautionary principle, and the principle of substantial equivalence has played in providing alternative perspectives in distributing the risks, burdens, and responsibilities of achieving coexistence. This was done by contrasting the EU's and the US's approaches to coexistence. Finally, this entry suggests that research into alternative moral theories, liberalism, and communitarianism and the controversy over cross-contamination could shed light on the nature of this important moral and political debate.

Cross-References

- Biodiversity
- EU Regulatory Conflicts Over GM Food
- Food Labeling
- Transgenic Crops

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Cuban Agriculture

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Synonyms

Biofertilizers; Castro; Cuba; Green revolution; Integrated pest management (IPM); Reanimation of the economy; Revolution; Special period; Sugarcane

Introduction

Cuba has a complicated history which has shaped its landscape and impacted its people in many ways. Due to its geographical location as an island in the Caribbean it has had an extraordinary level of dependence on its lands and natural resources for commerce and trade as well as

support of its people. Cuba's landscape is highly heterogeneous including high mountains, steep grades, long low grassy fields historically used for grazing animals and wide flat expanses with rich soils that have been used extensively for agriculture. The land use practices on the island have varied quite significantly over time ranging from a focus on cattle, tobacco and sugar. Cuba's recent agricultural history is intricately linked to its international relations with the Soviet Union as well as that country's collapse in 1990. Cuba's total dependence on the Soviet Union for such a long period of time made the period after 1990 especially difficult for the Cuban people. There is also the ethical side of the Cuban people's struggle linked to food security issues.

To fully understand the complexities of Cuban agricultural history and its ethical implications for the Cuban people and other involved parties, it is necessary to provide a brief history and evolution of agricultural land use before examining the important ethical issues. First, the major significant foci of Cuban agriculture in terms of key imports and exports through time will be discussed. Second, the scientific advances that have been made in organic agriculture due to lack of expensive pesticides and herbicide availability will be considered. These advances have been necessitated as a result of an absence of funds to import chemical treatments for pests and fungi infestations. Third, the ethical dimension of Cuban agriculture in terms of modernization possibilities and who is partnering with Cuba to improve their food security is examined. Finally, recommendations are offered for a way forward and lessons learned in Cuba for the people and the potential political paths that Cuban leadership could take to lead their people towards a more stable food economy.

Background and History

Significant Historical Foci of Cuban Agriculture

Cuba's import and export history begins with the establishment of towns along its coast in the early 1500s. The first settlements were established by

Diego Velázquez, a lieutenant to the Governor of Hispaniola: Nicolas de Ovando. Nuestra Senora de la Asuncion (now Baracoa) was the first settlement from 1511 to 1512. From 1512 until the mid-1700s most new cities were established near Havana, although Velázquez selected Santiago de Cuba as Cuba's first capital because it had an outstanding harbor and was near the major trade routes at that time (Gebelein 2012). During this early colonization the initial settlements were either near ports or close to natural resources that could be easily transported to a port city. It was also during this time that one of the first major examples of human subjugation occurred on Cuba. The Spanish needed labor to exploit their newfound resources in Cuba and the native Indian population was proximally, if unwillingly, available. The labor needed at that time was diversified and hands were needed to plow and maintain the agricultural sites for the settlers in that area.

Velázquez first enslaved the local Indian populations and forced them to labor for the Spanish. A local chieftan who had seen the inhumane methods Velázquez employed to subdue and exploit the Indian population in Hispaniola attempted to lead an opposition against Velázquez failed when he was caught and burned at the stake. Over the next several decades the Indian population fell because of illness passed on by the settlers, escape from the island, integration into the settlers' population, death due to brutal slavery practices, or from revolts (Gebelein 2012).

Tobacco was one of the crops grown before Spaniards settled the island. Columbus witnessed the Cuban Indians smoking it before he knew what it was and was a regular trade item between the Spaniards and the Indians. The Spaniards did not recognize its potential until well after colonization was established. They discovered the further west tobacco is grown, the better the tobacco. Drawing a quality line from east to west the tobacco industry has the *Mayari y Gibara* in the Oriente Province. One of the factors that separate tobacco from other crops is that it is labor intensive to grow. There are many small and time consuming steps to cultivating a quality tobacco

plant. A second and far more important example of high maintenance crop is, of course, sugar.

Sugar was not immediately impactful on the Cuban landscape or to its economy. Despite the fact that sugarcane was introduced to the island in the early 1500s, it was not until 1590 that sugar mills were introduced to produce commercial sugar. Sugar then became a very popular export but the fact remained that it was extremely labor intensive to get the final product to market. From clearing forested area to planting, maintaining and processing the cane took many laborers and much time. Herein was the problem of available ready labor. However, when the British captured Havana they also introduced black slavery to Cuba. These thousands of African slaves became the labor force that Spain needed to support an increased production of sugar. This and other related events began a chain reaction in Cuba in response to an increase in labor force and a rising demand for Cuban products.

The demand for sugar has not been steady or altogether predictable. The rise and fall of sugar has directly impacted Cuba's foreign relations, the economic security of the island and its people as well as the stability of the government and its ability to provide for its people. For example, sugar prices rose steadily in the early 1900s, and by 1913, the majority of the U.S. investment in Cuba was in its sugar valued at approximately 200 million U.S. dollars. Cuba was also producing 12 % of the world's sugar supply at this time. The First World War caused a dramatic increase when The English Royal Commission began importing raw sugar from Cuba. This trading relationship lasted throughout World War I. By 1918 Cuba had the largest sugar enterprise in the world, however from June 1920 to December 1920, the price of sugar dropped approximately 14 cents per pound due to European competition. This was devastating for the Cuban economy, laborers left, and banks on Cuba closed; forcing President Menocal to declare a moratorium (Thomas 1998). Things did not get much better as years passed. The United States' share of the Cuban sugar market dropped from almost 50–25 % by 1933. These conditions, not surprisingly, led to economic crisis on Cuba with more

mills closing, employment opportunities in Cuba fading, labor fleeing the island for better opportunities elsewhere, and a dismal international market reflecting bad financial times for the island. Cuba's economy then began to improve while its people, particularly its poor, began a slow decline. When Batista returned for a second term as Cuba's president, foreign investors began reinvesting in Cuba. Mining operations increased with substantial U.S. investment for extraction of cobalt and nickel. Tourists began returning to Cuba and the tourism industry became one of Cuba's most important sectors of revenue. Under Batista the cattle industry increased to compete with the highest ranking cattle industries in Latin America. Despite this, for 9 years, until 1958, sugar accounted for 85 % of Cuban exports. This monoculture approach was a huge weakness in terms of being totally dependent on the international market's price fluctuations. The second major flaw in Batista's economic structure was the majority dependence on the United States for imports and exports. Approximately 75 % of Cuban imports came from the United States and almost 65 % of Cuban exports were consumed by the U.S. market (Suchlicki 2002). Most of Cuba's people did not fare well under Batista's rule either as he ultimately befriended and rewarded the largest sugar plantation owners resulting in a larger disparity between rich and poor Cubans, continually exploited Cuba's many commercial investments including agreements with the American mafia that were linked to nefarious businesses based in Havana (Olson 2000). He also quelled riots and public discontent with violence and murders using his secret police to instill fear into a populace already discontent from continual economic downturns and his oppressive regime. Cuba was poised for another revolution.

When Castro took power from Batista in 1959, major changes took place that directly and fairly quickly impacted the Cuban economy and its people. One of the first and most devastating to the economy was the quick erosion of the U.S. Cuba political trade agreements. For the first few months of Castro's presidency, he continually reiterated his opposition to U.S. financial

interests and control of assets in Cuba. However, he allowed business to continue as usual during this period. During this time the Eisenhower administration waited to see what would ultimately become of Castro and his policies, and had no real response to Castro's condemnation of the United States' involvement in Cuba. Yet the relationship between Cuba and the United States became far more strained when the Agrarian Reform law was enacted. It initiated agricultural expropriations which the U.S. formally objected to but these complaints had no influence. The Reform Law was quickly followed by other attacks on U.S. foreign investments including mining and petroleum interests. The relationship between the two countries deteriorated further when, in February 1960, Castro signed a key trade agreement with the Soviet Union that stated Cuba would receive oil for sugar. However, a few months later both U.S. and English refineries declined to process Soviet oil. Concurrent to this, the U.S. president was granted authority to curtail foreign sugar quotas as his discretion. In a reactive retribution, Castro nationalized those oil companies that had refused to process the Soviet's oil. One month later the U.S. eliminated its request for its remaining order of sugar imports from Cuba for the year. Castro continued to nationalize all oil companies on Cuba for the next few months. In retaliation the U.S. pronounced an embargo on most goods exported to Cuba, withdrawing its American ambassador to Cuba shortly thereafter (Suchlicki 2002). The U.S. amended the Sugar Act of 1948, which has given preferential treatment to Cuba in the form of the majority of the sugar market quota, to *only* restore Cuba's sugar quota if it returned to a "free world", or free of socialist ideologies. Shortly thereafter in July 1960 the Soviet Union stated its willingness to buy the U.S. quota share of sugar. In fact, the Soviet Union and Cuba came to an agreement whereby the Soviets would buy at least five million tons of sugar at a much higher price of US\$125/mt (5.67 cents per pounds) (Alvarez and Castellanos 2001). Additionally, since Cuba no longer had access to the imports it needed from the U.S. in terms of farming fertilizers, equipment, food, et cetera; it now

began to depend largely on its new trade relationship with the Soviet Union for these requirements.

One of the key things to note here is that without the Soviet's saving relationship with Cuba, Castro would have been in dire straits to provide for his people and find such an all inclusive importer of Cuba's goods. This situation should have highlighted the fact that dependency on a monoculture is not safe or predictable in a world market especially when political ties become strained. Cuba's major exports in the early 1960s were sugar, tobacco, nickel and rum, with sugar eclipsing all others. Instead of diversifying however, and heeding this clear economic warning, Castro continued with a focus on increasing sugar production and exports. In fact, not only did Cuba not diversify its exports, it increased its sugar quota markets to include Eastern Europe, China, and other countries which added to the total export demand. These new demands amplified sugar output levels to just over eight million metric tons of sugar per year. Castro's economic plan was to achieve ten million metric tons of sugar by 1970. This did not happen mostly due to his miscalculation of agricultural production potential and underestimation of essential manufacturing investment (Alvarez and Castellanos 2001).

The Special Period

The next phase of Cuban agricultural history was spurred by the fall of the Soviet Union and the strengthening of the United States blockade. With the Soviet Union in complete disarray, Cuba lost its greatest trading partner. This was underscored by the fact that 85 % of Cuban trade had previously been with the socialist bloc of Mutual Economic Assistance (CMEA) and almost all of those contracts were done in nonconvertible currency. The combination of these things was devastating to the Cuban people because commercial trade fell by more than 90 % after the fall of the Soviet Union. For example trade with Cuba dropped from \$8.7 billion in 1989 to \$750 million in 1993. Furthermore, Soviet oil imports to Cuba plummeted 90 % from 13 million tons in 1989 to 1.8 million tons

in 1992. Every basic foodstuff, grain and all previously available consumer goods became scarce or unavailable and the importation of raw materials and spare parts critical to multiple industries in Cuba became completely unobtainable. Impacts to agriculture were also significant. Fertilizer imports to Cuba declined 80 % in only a few years. The consequences of these combined events led quickly to fuel shortages resulting in closed factories and many industrial plants as well as a serious shortage of consumer goods (Gebelein 2012).

This phase was coined the Special Period (*periodo especial*) and lasted from 1990 to 2000. Farming equipment such as trucks and tractors were replaced by livestock and farm animals since there was no further access to spare parts or fuel. Out of necessity there was a much greater focus on maximizing organic farming methods such as IPM (Integrated Pest Management), and vigilant crop rotation to get the most out of soil nutrient retention and minimize weed invasion (Gebelein 2012). However, despite these efforts, this period was marked by economic depression, agricultural stressors, and a forced end of a dependence on the Soviet Union. Cuba became truly marooned from the global marketplace when trade relations with the Soviet bloc disappeared (Pérez 1995).

Cuba's isolation was not complete however. In 1992, the United States issued an executive order which prohibited ships that had traded with Cuba to enter U.S. ports. This resulted in a major decrease in the number of countries (and companies) willing to conduct trade with Cuba (Thomas 1998). Compounding an already serious situation, that same year the United States passed the Torricelli Bill, also called the "Cuba Democracy Act." This act required that subsidiaries of U.S. companies that operated in third countries were not allowed to trade with or invest anything in Cuba. If a country were caught doing so in violation of this act, the U.S. stipulated that it then had the right to withhold debt relief, free trade agreements and any economic assistance with countries that gave aid to Cuba (Pérez 1995). This situation became quite dire very quickly for the Cuban people.

The Green Revolution

Just before the crash of 1990, Cuba had established steps towards its Green Revolution, with the assistance of the Soviet Union. It has also been called the “Soviet Agricultural Revolution” as well due to the Soviet assistance in this project (Warwick 2001). This period occurred from 1984 to 1991 and the goal was, not surprisingly, focused on increasing agricultural output by permitting farmers to grow crops in areas that had been previously protected by law. Sadly, this led to extensive forest clearing and the destruction of other native vegetation communities that had previously been protected and left undisturbed. The Green Revolution was mostly focused on the expansion of sugarcane cultivation, again adding to the dependency on the Soviets for their sugar exports, and increasing the need yet again for imported pesticides, farm equipment and oil, and hybrid seeds (Rosset 1997; Warwick 2001).

Reanimation of the Economy

The final period of discussion is the Reanimation of the Economy which also began in the late 1990s lasting until, some would argue, 2011. Here is the first inkling of hope in the transition from the heavy dependence on chemical intermediates to more natural biological agents in the agro-ecological conversion process that scientists have exploited for large scale farming areas (Funes 2002; Febles-González et al. 2011). There were also successful transitions to organic pesticide management approaches and use of organic nutrients for fertilizer as well. In spite of these advances, in 2007, there were only approximately 4.9 million acres of land actively cultivated, even though there were just over 9.8 million acres of fertile land available for farming. The Cuban government made massive efforts to encourage farmers to plant food. Nonetheless this did not last throughout the Reanimation period and was largely unsuccessful. From 1999 to 2007 Cuba's total cultivated land fell 17.5 %. While this decrease is an island-wide average, there were decreases in every province of cultivated lands during this period. Thus while Cubans may have had access to fertile lands and wanted to farm them, they had no access to the necessary

farming tools or resources to produce any kind of crop yield. The Cuban government had set completely unrealistic goals with the Reanimation Proclamation and the Cuban people had no way of achieving these lofty aspirations (Febles-González et al. 2011). However, while this historical background has painted a dire picture of the conditions in Cuba regarding food security for its people, there have been impressive innovations and creative movements by the government and its people to improve conditions.

Scientific Advances in Organic Agriculture Due to Lack of Expensive Pesticide and Herbicide

After such a historical downturn of the economy based largely on heavy foreign dependence and a commercial monoculture, Cuban agriculture has refocused on sound agro-ecology practices. The main goals of this include fostering rural employment, strengthening the social network between rural and urban dwellers, utilizing appropriate technologies to increase productivity and above all achieve food security and greater independence from foreign countries (Febles-González et al. 2011). There have been many attempts, some successful and some not, of Green Farming approaches. Interestingly, these greener, organic approaches were in existence for many decades, but they were never mainstreamed because of dependence on the soviet imports for pest control, herbicides and pest management. For instance, the parasitic fly *Lixophaga diatraeae* was used against a cane boring pest in approximately 95 % of the cane on the island since 1968. Predatory ants (*Pheidole megacephala*) were used in the 1980s to control the sweet potato weevil *Cylas formicarius*.

IPM (Integrated Pest Management) was integrated into national policy in 1982 but not mainstreamed until the beginning of the Special Period. IPM successfully uses a number of specific insects for weed control and plant disease approaches to reduce reliance on chemical pesticides. For example Cuban scientists have created pesticides which are extracts from plants like the neem tree. At the close of 1991, roughly 56 % of Cuban agriculture was treated using organic biological controls (Gebelein 2012). Another

example of better agro-ecological practices is crop rotation. During the height of the monoculture boom, this was not done much throughout the countryside. One of the little known reasons for rotating crops is to out compete the weed community. For example planting sorghum or corn, after its harvest, planting potato, harvest the potato, and then back to sorghum or corn again. Planting these crops in this particular order in combination with natural herbicides, was discovered to prevent feverfew or Mugwort (*Parthenium hysterophorus*) and additional Dicotyledonous annual weeds (Rosset and Benjamin 1994).

Ethics in Cuban Agriculture

The Cuban People and Potential for Food Security

The history of agriculture and food security in Cuba demonstrates that the Cuban people have been victims of failed leadership in and political enemies of the socialist state of Cuba. It is a testament to them that IPM has succeeded in several types of crops. More recently, the leadership of Cuba has realized that in order to feed its people and succeed without total dependence on another country, it must *involve* its people in land ownership and provide the tools and policies necessary to support local efforts rather than a top down approach. The Soviet-style, large-scale food production system worked fairly well with the substantial economic backing of the Soviet Union and importation of farm machinery, pesticides and herbicides that were not available internally. However, when these resources and support disappeared the people suffered in terms of obtaining basic nutritional needs for a very long time. In 1990, Castro further defined the Special Period as the Special Period in Peacetime, which proved to be the basis for a new structure to support basic food necessities for the Cuban people. More specifically, this was the turning point for Cuba towards a low external input production, and an organic agro-ecology approach which included reconstructing Cuba's agricultural infrastructure to break up large scale

state farms into smaller entities under more direct supervision by local managers. This new management approach also included government support of private sector farmers' markets and the development of urban agriculture in the cities, towns and more rural areas. Involvement of the people was also realized with attention to a new importance placed on farmer-to-farmer exchanges, on farm research and agro-ecological training for scientists and farmers (Rosset and Moore 1997).

Ethical Lessons Learned

There are two main lessons we may draw from Cuba's agricultural history. The first is couched in political dominance. Given the history of Cuba's decision to be completely dependent on a monoculture of sugar, it eventually led to almost total dependence on the Soviet Union to sustain an inflated economy. The economic success was not sustainable due to inflated sugar prices in exchange for Cuba's agricultural imports. The crash of the Soviet Union put the entire Cuban economy in dire straits for many, many years. The reason such dependence is linked to ethical concerns for Cuba's people is food security. Because of poor long-term planning by the Cuban government, its people have suffered and have had to quickly develop ways to sustain themselves at bare minimum standards of living and caloric daily intake. The people have also been prevented by Castro from expanding into revenue generating opportunities for themselves to increase their standard of living by a dictatorship of forced socialism. The important links here between Cuba's agricultural history, its leadership and its people is an issue of economic equity. There should have been an effort made towards a reduction of poverty through improved access to such entrepreneurial opportunities as well as access to improved farming technologies and sustainable practices. Unfortunately this did not occur and inequity increased dramatically between Cuba's few rich and many poor. Having first the United States and then the Soviet Union as a primary benefactor did not ultimately prove viable in the long term. Therefore the alternative is a more sustainable way forward.

The second major lesson is addressing the lessons learned and potential application of those lessons in the future. How has Cuba begun to recover from this failed status? Currently, while smaller scale growing culture is increasing in the farming communities, urban agriculture is a fast growing segment of getting nutritional requirements to the Cuban people. While urban agriculture is not the only answer to the nutritional deficiencies of the Cuban people, it is fast becoming a sustainable solution to food security in Cuba and indeed is encouraged by the government. And while the allowance of this practice is not the solution to Cuba's food crisis, it is playing a large part in Cuba's recovery from the crisis caused by the collapse of the Soviet Union (Allen 1999).

The Recognition of Change

The Grupo Nacional de Agricultura Urbana (GNAU) now recognizes and supports four major types of urban agriculture. The first is called *patios* that Cubans are encouraged to plant for their own households, although they are allowed to sell surplus vegetables and fruits. As of 2012 there were 400,000 *patios* officially registered which entitles the owner to reduced prices on plant supplies. *Parcelas* are unused parcels of land that an individual is granted access to plant and may keep for his own as long as a certain level of crop production is met each season. There are also the *organopónico*. This unit is for production in long rectangular plots approximately 1 m by 15–30 m. They are slightly raised beds. These units have irrigation, superior soil and other modifications beyond the normal plot of land given to an individual. Finally, there is *huertas intensiva* (intensive garden), which are comparable to the *organopónico* except they are at ground level and are not raised. The important things to note here is the first two are recent evolutions of space that recognize the importance of the self-supporting individual. This is a stretch from the total domination of agriculture several decades ago. The second two have been in existence since the 1980s and their success is a tribute to their continued existence (Koont 2011).

Summary

Cuban issues of food security and ethical concerns are vastly complex. The history alone has occupied hundreds of pages in journals, books and other scholarly works. The overall lesson learned here is based in diversification of economic interests and remembering to empower the individual as well as the collective. When Castro took power, he took back the capitalistic stance that had controlled Cuba's interests for so long. However, history seems to have proven that he swung too far towards total control over his people, the land and focused to closely on a monoculture that proved ultimately to be the country's demise due to the trade of capitalism for a total dependence on a country with similar values. The background and way forward presented here are only a small pixel of a portrait that we hope, over time, paints a picture of sustainable living, a healthy population and independent country that can stand strong and support its people.

Cross-References

- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Economy of Agriculture and Food](#)
- [Food Security](#)
- [Food Security and International Trade](#)
- [Urban Agriculture](#)

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Definition

Cosmopolitanism is an openness to and willingness to engage with cultural Others. *Culinary* comes from the Late Latin *culina*, meaning “kitchen,” derived from Classical Latin *coquere*, or “cook.” The “culinary arts” are popularly understood to be the art of cooking, in this case, a fine art, or sometimes equated with *haute cuisine*.

Culinary cosmopolitanism can be understood to refer to practices of consumption and production (provisioning, cooking, eating, and feeding) that are linked to the development or manifestation of cosmopolitan attitudes. Although culinary cosmopolitanism is sometimes used synonymously with “gastronomic multiculturalism,” the latter is simply descriptive of practices of dining within multicultural settings, whereas the former is posited as a moral project of sorts, a conscious aspiration to genuine openness and engagement with cultural Others.

Culinary Cosmopolitanism

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Synonyms

Gastronomic multiculturalism

Introduction

The meaning attributed to practices of consumption and production of food that are deeply tied to identity and community. While “food adventuring” or “culinary tourism” may be forms of colonialism and means of accruing cultural and social capital, they may also contribute to the formation of cosmopolitan subjects. This entry provides an overview of the history of cosmopolitanism as a philosophical construct and moral project and details the ways in which cosmopolitan engagements with multicultural foodways can be spaces of “hopeful intercultural encounters.”

A History of Cosmopolitanism

The concept and promotion of cosmopolitanism are generally credited to the Cynics and the Stoics before being taken up again by Kant during the Enlightenment. Diogenes, considered one of the founders of Cynicism, when asked where he came from, said, “I am a citizen of the world [kosmopolitēs],” thereby flouting the importance and exclusive rights of citizenship of his time. Kant’s moral cosmopolitanism posits that all human beings are worthy and deserving of moral concern and that they are also all capable of understanding this principle and creating a universal system of law to which all nations should ascribe.

Arising out of this moral universalism is “political cosmopolitanism,” which subsequently establishes cosmopolitanism as oppositional to nationalism (Hannerz 1990). According to this formulation, one cannot simultaneously be both nationalist and cosmopolitan or form strong attachments to both the nation-state and the world. If one is a cosmopolitan and therefore a “citizen of the world,” then how can one also

be committed to what is essentially an exclusive particularism (the nation)? However, this concept has been critiqued on a number of points, for example, as “rootless” (and so unable or unwilling to engage with the location in which they mostly exist, where they might hope to do the most “cosmopolitan good” were they more attached) and as “deracinated intellectuals” and elitists (Robbins and Cheah 1998; Beck 1998; Werbner 2008; Nowicka and Rovisco 2009). Yet many maintain that cosmopolitanism and nationalism are still antithetical, largely due to the exclusive imaginary inherent in nationalist discourses, but that more local attachments can work to undermine nationalist belonging by creating “a critical space of local care across difference” (Wise 2009).

The most recent theories of cosmopolitanism come under the rubric of “cultural cosmopolitanism,” broadly defined as an openness to and willingness to engage with cultural Others. Emergent theories encompass what Clifford (1992) described as “discrepant” cosmopolitanisms, most maintaining that cosmopolitans may retain local, particularized, and even nationalist identities and attachments. Some, such as Werbner, deliberately rescue the conceptual framework from elitist discourse – Werbner (2008) uses the phrase “demotic cosmopolitanism” in order to directly oppose the notion of it being purely elitist. Beck goes so far as to claim that “there is no cosmopolitanism without localism” (1998), rejecting the earlier elitist distinctions made by Hannerz (1990) between the cosmopolitans and the locals, where cosmopolitanism was painted as essentially the “class consciousness of the frequent traveller” (or the domain of the white, male, middle class).

Beck has generated a significant oeuvre on cosmopolitanism, in which he argues that it is a process of “internal globalization” that creates what he calls “cosmopolitanization,” the third of five stages in the social sciences’ treatment of globalization (2009). When he first proposed his theory of “cosmopolitanization,” Beck argued that nationalist thinking presupposes a monologic imagination, whereas cosmopolitan thinking is dialogic. That is, the cosmopolitan perspective

is “an imagination of alternative ways of life and rationalities, which include the otherness of the other” (1998); it is “thinking and living in terms of *inclusive oppositions*.” He goes on to argue for the social sciences to move on from “methodological nationalism” to “methodological cosmopolitanism,” which will replace “the currently prevailing ontology and imaginary of the nation-state” (2009, p. xii).

Beck claims that the collection *Cosmopolitanism in Practice* (Nowicka and Rovisco 2009) “introduces a fifth phase, namely the question of what does cosmopolitanism in practice mean” (Nowicka and Rovisco 2009). He and the other contributors to that volume attempt to move beyond merely “prescriptive” or “descriptive” conceptions of cosmopolitanism and to “illustrate some of the ways in which cosmopolitanism can be used as an analytical tool to explain certain identity outlooks and ethico-political practices that are discernible in a variety of social and institutional settings” (Nowicka and Rovisco 2009). It is this fifth stage to which culinary cosmopolitanism belongs, identifying cultural and cosmopolitan identities and practices through everyday engagements with multicultural foodways.

Unravelling Food Adventuring from Culinary Cosmopolitanism

A risk in any study of cosmopolitanism is to mistake discourses of cultural adventuring, something seen frequently in culinary realms, for openness to and willingness to engage with cultural Others. In Ghassan Hage’s view, “Anglo-” (shorthand for “Anglo-Celtic” or “Anglo-Australian,” i.e., “white” in Australia) enrichment discourses create a sort of “multiculturalism without the migrants,” which “conceives of ethnicity largely as an object of consumption” (1997). In this same vein, bell hooks has famously argued “. . . within commodity culture, ethnicity becomes spice, seasoning that can liven up the dull dish that is mainstream culture” (1993).

In Bourdieu’s seminal work on social stratification and “taste,” he gave us terminology such as cultural, social, and symbolic capital and the

concepts of habitus and fields (1979). Bourdieu's sociological study from the late 1970s argued that a person's cultural and social capital will be almost exclusively determined by inheritance, that is, by the class and situation into which one is born, with some effect from education. Hage (1997) makes a Bourdieuan argument that people not only consistently accrue cultural capital as they maintain their social distinctions, but that this does symbolic violence to ethnic Others in making them invisible or existing only insofar as they can "perform" their authentic ethnic selves for elite Others (usually Anglo in Hage's work in Sydney).

Hage argues via Heidegger that the discourse of value "places the dominant culture in a more important position than other migrant cultures" and that "while the dominant White culture merely and unquestionably *exists*, migrant cultures exist *for* the latter" (1998). In his discussion of the "White multiculturalist fantasy," Hage claims that in positioning migrant cultures as "exhibitions" in a sort of "multicultural fair" and Whites as the tourists "being enriched," the Whites have "blocked" the "reality of the ethnic eater" (1998).

On the one hand, this particular discourse is indicative of Anglo hegemony through discursively valuing Others' foods that "enrich" their lives. On the other hand, if one looks back to the history of most migrant restaurants, it is clear that the "ethnic eaters" were there first, and in many or most cases of such eateries, they remain present in significant numbers. In truth, many habitués of multicultural restaurants seek out those establishments that have a visible presence of "ethnic eaters" as a sign of "authenticity" and therefore, presumably, a higher quality (more pleasurable) dining experience (and, of course, a sign of their own distinction (Bourdieu 1979) as cosmopolitans possessing considerable knowledge of the Other).

Hage himself acknowledges this, claiming that "Cosmo-multiculturalism expresses a clear liking for ethnic cultural products that appear to exist in and for themselves. The experience is one of entering a restaurant that is not aiming to satisfy western needs but an ethnic clientele" (1997).

Here Hage is contradictory on a number of points. First, if "cosmo-multiculturalists" have "blocked the reality of the ethnic eater," how can they be seeking verification of authenticity in the presence of the same? Second, according to Hage, the ethnic provider of food is interpellated as a powerless object of the nation if the cosmo-multiculturalist centers his discourse around eating, rather than focusing on the production and "gift" of the food. However, he argues that enjoying food that is (ostensibly at least) prepared not for the Anglo eater, but for a communal ethnic experience to which the Anglo feels privileged to partake as a sort of "trespasser," is "perverse." It's unclear what option Hage leaves the (presumed Anglo) culinary cosmopolitan that won't do symbolic violence to the migrant producer.

It is critical to the development of culinary cosmopolitanism to understand the ways in which all versions, Anglo or non, bourgeois or working class, and knowledge class or not, deploy cosmopolitanism as a way of making sense of a multicultural reality.

Heldke has written of the "culinary traveller" as someone "who moves into a cultural location other than one's own, either temporarily or more long term" (2003). She includes travellers overseas, domestically, or even just to "ethnic" restaurants in one's own town. Jennie Germann Molz, writing about culinary tourism in local Thai restaurants, argues that:

by participating in a food system, the culinary tourist is expressing and reinforcing his or her own identity while exploring the identity of the other that is represented by that food system. [...] As Lucy Long suggests, while culinary tourism is "the intentional, exploratory participation in the foodways of an Other", it often results in "teaching[ing] us more about ourselves than about the Other." (1998:185). (Molz 2007)

To illustrate an example of Hage's "cosmo-multiculturalist" or Heldke's "culinary traveller," here's a sample from a post on a Sydney food blog:

Sydney siders are well versed in all things Italian, if the number of pizzerias, trattorias and "Mama Mia's" are anything to go by, but there's always room for more eating, drinking and dancing in this town so "Viva Italiano," I say. (Leong 2009)

Here, Leong's celebration of "all things Italian" is exclusively Italian food – this is Hage's "multiculturalism without the migrants." And yet, importantly, does the reader know whether Leong in fact *only* celebrates "Italianness" for what it offers her in social distinction? Or does one also gain a better understanding of and therefore greater openness to Other cultures through their interest in the foodways of those cultures, even if that wasn't the initial goal? Can elitist practices of food adventuring be a mechanism that enables more cosmopolitan attitudes?

Hage's "cosmo-multiculturalism" has also been called "cosmopolitan capitalism," which Leong (2009) has critiqued as a "glossy magazine" version of cosmopolitanism – like Hage, Littler views this as a an elite lifestyle choice usually defined by habits of conspicuous consumption. Corpus Ong (2009), in his work on globalized media practice, cynically labels it "instrumental cosmopolitanism." In each of these arguments, the people in question would fit into Hannerz's (1990) opposition of "cosmopolitans" to "locals," where he went so far as to claim that transnational migrants were not "real" cosmopolitans as they so frequently have little choice in the migration (economic or humanitarian refugees, essentially) and only engage with the "host" culture in the manner of tourists, which is to say, a very shallow engagement.

In Bell and Valentine's (1997) chapter on food consumption in communities, the authors define cosmopolitanism as involving "the cultivating of 'globalised cultural capital' as a form of lifestyle shopping which, crucially, involves possessing considerable knowledge about the 'exotic' [or] 'the authentic'" which they point out is often referred to as a "colonisation or an intellectualisation of popular culture." Kothari and Pearson (2007) mull over the same concern, using the terms "boutique multiculturalism" and "culinary cosmopolitanism" to worry about the elitist and colonizing tendencies of such systems of valuing. However, they point to a more hopeful conclusion when they comment that "While the mainstream may seek to fashion itself as more interesting and cosmopolitan by eating ethnic

food, this type of consumption can also signal an important openness to cultural difference."

While it is easy to see the Bourdieuan distinction of the knowledgeable cosmopolitan above, arguments such as Hage's or Bell and Valentine's leave cosmopolitanism in a rather cynical and sad theoretical space, leaving the ethnic Other little potential for agency and in fact seeming to contribute to the silencing of the migrant voice. Such a version seems to be critical of "possession of considerable knowledge" of the Other, which is surely in direct contradiction to ideas of belonging, in which being able to make meaning is essential (Williams 1961). It seems that what Hage is really criticizing is the cavalier attitude of those who are distinguished by their knowledge of the exotic, which is closely tied to Heidegger's discourse of valuing, rather than Raymond Williams' discussion of making meaning and belonging. In this case, it is perhaps more useful to interrogate individual, everyday attitudes rather than making sweeping generalizations. It is important to work with and against the potential contradictions inherent in the acquisition of cultural capital in order to understand what cosmopolitanism is and what benefits it can offer a multicultural society.

Rescuing "culinary cosmopolitanism" from its more recent elitist connotations by taking it back to its philosophical roots offers a way forward to understanding the importance of engagement with multicultural foodways in the development of cosmopolitan subjects.

Generally speaking, those who maintain that Hage's "cosmo-multiculturalists" are not "genuine" cosmopolitans are typically writing about elite Anglo populations, and much of the most contemporary theory around "banal" or "vernacular" cosmopolitanisms has focused on transnational migrant groups who are typically not of Anglo descent. Some of the most interesting work in this newer field comes from nonmetropolitan or "southern" academics and seeks to decenter the metropolitan, elite, white discourses in order to demonstrate instances of cosmopolitanisms all over the world (Werbner 2008; Nowicka and Rovisco 2009).

“Hopeful Intercultural Encounters” and Culinary Cosmopolitanism

In Amanda Wise’s (2009) ethnography in the Sydney suburb of Ashfield, she argues that where she found “hopeful intercultural encounters,” a common element was:

certain forms of manners, recognition, gratitude and hospitality, which have the capacity to facilitate the development over time of forms of interethnic belonging, security and trust. Such interethnic social capital, as I term it, is an essential prerequisite for the creation of dispositions of the open, joyful and hopeful kind, full of possibilities for opening up to otherness.

Food and eating, which “are central to our subjectivity, or sense of self, and our experience of embodiment,” (Lupton 1996) are therefore central to opportunities in which it is possible to develop “interethnic social capital.” Not only is food an everyday visceral aspect of life, involving taste, emotion, and memory, it is a site of frequent exchange, whether as a commodity, a gift, or an act of nurturing. As Duruz puts it, “‘eating together differently’ [. . .] has become a recognition of the (here, mildly) disruptive politics of exchange – of food, of histories, of memories – at the table of global–local belonging” (2006). It is critical to the project of culinary cosmopolitanism, then, to understand just what does happen at the “glocal” table and to identify the points in the continuum of shopping/growing, preparing, feeding, and eating that offer the most enabling spaces for cosmopolitan praxis.

Summary

Culinary cosmopolitanism is part of a long history of people’s attempt to be open to and engage with cultural Others. Through practices of production and consumption of food and foodways, people of all classes and ethnicities seek to understand and belong to a global community, often through very local attachments, and critically, over the table.

Cross-References

- [Authenticity in Food](#)
- [Ethnicity, Ethnic Identity, and Food](#)

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Culinary Tourism

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Synonyms

Cultural tourism; Food tourism; Gastronomic tourism; Sustainable tourism

Introduction

Culinary tourism is the focus on food as an attraction for exploration and a destination for tourism. Although food has always been a part of hospitality services for tourists, it was not emphasized by the tourism industry until the late 1990s. It now includes a variety of formats and products – culinary trails, cooking classes, restaurants, farm weekends, cookbooks, food guides, and new or adapted recipes, dishes, and even ingredients. While most culinary tourism focuses on the experience of dining and tasting of new foods as a commercial enterprise, it is also an educational initiative channeling curiosity about food into learning through it about the culture of a particular cuisine, the people involved in producing and preparing it, the food system enabling access to those foods, and the potential contribution of tourists to sustainability.

Culinary tourism involves numerous issues; many that accompany tourism in general as well

as some that are specific to food. Because of culinary tourism's economic potential as well as its role in spreading and shaping food cultures, the ethics attached to it are very real concerns. It is a significant force in globalization and offers rich possibilities for intercultural communication and understanding. It is essential then that both scholars and practitioners recognize its complexity and potential. This entry offers an overview of issues connected to culinary tourism and some of the solutions that have been suggested for dealing with them. It also addresses competing definitions of culinary tourism as a field of study, since different approaches focus on different issues.

Issues: Definitions

Tourism based on food is known by several terms, and these terms reflect different approaches to it as a field of study as well as an industry niche. Perhaps the first was “gastronomic tourism,” suggested by cultural geographer Wilbur Zelinsky in 1985 in an analysis of ethnicities prevalent in restaurants in the United States. Similarly, Bell and Valentine used “kitchen table tourism” in 1997 to address the virtual exploration of other food cultures through modern technologies. “Culinary tourism” was introduced in 1996 by folklorist Lucy Long as a humanities perspective on the meanings and implications of eating out of curiosity and was later refined to “the intentional, exploratory participation in the foodways of an other; participation including the consumption, preparation, and presentation of a food item, cuisine, meal system, or eating style considered to belong to a culinary system not one's own” (2004:21). Culinary tourism from this perspective is a negotiation of exotic and familiar, with otherness depending not only on an individual's or group's experiences but also including domains such as region, class, gender, religion or ethos, age, along with ethnicity or nationality of a food. It also includes all the activities and practices associated with food consumption.

Long's edited volume, *Culinary Tourism* (2004), helped establish the phrase in both the

humanities and the tourism industry, where it was adapted by the American-based International Culinary Tourism Association for tourism that features unique and memorable dining experiences. This shift to professional and commercial interests around tourism raised issues common to the distinctions between applied and “academic” approaches to scholarship and tourism in general, particularly in the idea of knowledge being used to exploit resources and tourists to profit the tourism industry.

Meanwhile, scholars in tourism studies and other fields, notably anthropology, were also studying the phenomenon and using other terms. Tourism scholar C. Michael Hall defined “food tourism” in 1997 as tourism in which the prime motivation for the tourist was a “...desire to experience a particular type of food or the produce of a specific region.” Hall and Sharples refined that definition to: “visitation to primary and secondary food producers, food festivals, restaurants and specific locations for which food tasting and/or experiencing the attribute of specialist food production regions are the primary motivating factor for travel” (2003). The extensive publications by Hall and his colleagues take cross-disciplinary approaches in examining motivations of tourists and the development, management, and marketing of food tourism products. They also recognize the potential impacts of tourism beyond the industry, encouraging a research-based model for ethical tourism.

“Gastronomic tourism” used in 2002 by Anne-Mette Hjalager and Greg Richards is similar to “food tourism” in involving travel to food but is also presented as an emerging discipline recognizing both gastronomy and tourism as dynamic cultural constructions reflecting specific histories and contemporary interests. Pricilla Boniface’s term “tasting tourism” is similarly used to understand the broader forces that have turned food and drink into tourism attractions (2002). She draws upon work in cultural studies to understand the nature of tourism in the modern world and how tourism can change the meanings of food. She also offers a framework for understanding the motivations of tourists, a significant issue within tourism studies.

Scholarship on culinary tourism has continued to grow so that it is now frequently discussed in journals and conferences in tourism studies as well as other disciplines, exploring the role of culinary tourism in identity construction, maintenance of cultural and culinary heritage, and defining cultural boundaries. Much of this scholarship also now emphasizes an understanding of how such tourism can be made sustainable and beneficial to all who are involved in it. This requires examining the impact of tourism on economies, environments, societies, and cultures of both the host communities and the tourists involved.

Issues: Economic

Tourism in general is a major global industry, expected to be worth \$10.8 trillion and provide 296.2 million jobs by 2018. Culinary tourism is a growing niche within the industry, estimated to becoming stronger as more providers and tourists become aware of it. Culinary tourists are thought to belong to higher income levels, able to spend more money on other hospitality services accompanying dining experiences (lodging, tours, etc.), and to be better educated and more culturally sensitive. This makes them a desirable clientele, and governments and policy makers see this type of tourism as a positive force for economic development. Along with providing employment opportunities, it also creates markets for particular foods and food events. Because of the current emphasis on locally sourced ingredients, it also supports local food producers and can be seen as a way to insure that the food system in general is intertwined with and supporting local economies – the “multiplier effect” in which businesses supplying and supporting the tourism industry benefit from tourism activities (Gmelch 2010; Chambers 2010). This would, in theory, include such things as the farmers who supply the restaurants feeding tourists or schools training students in hospitality management or culinary arts.

The economic benefits of culinary tourism seem clearly positive; unfortunately, it is never that simple. Tourism in general depends upon the spending of individuals from wealthier nations.

This source can change due to weather, political events, natural disasters, and a host of other variables. Not only can host cultures' economics become dangerously dependent on such unstable tourism monies, but local food systems (and social structures in general) may also adapt to accommodate tourists' needs. Also, tourism is frequently controlled by companies outside a host community who bring their own suppliers and bring in their own staff (Gmelch 2010; Chambers 2010). This results in economic "leakage," with the money brought in by tourism leaving that community. Similarly, there is no guarantee that money made from culinary tourism is shared in equitable ways within the host community or used in ways that benefit the larger group. Furthermore, "branding," which is seen as a way to successfully commodify and market a region, locale, culture, or group's food, often focuses on one food or ingredient to the detriment of others, creating a monoculture, so to speak, again, an unreliable basis for an economy.

A particularly significant issue in culinary tourism is the possibility it has for "recoupling the food chain," bringing producers and consumers closer together without the middle links of processing, packaging, distributing, and marketing of food. Since culinary tourism can make tourists more aware of the food they are eating, it can also turn their attention to where that food comes from and how it is grown. Tourists can then create a demand and a market for food that is produced sustainably and locally. This, in theory, puts more money in the pockets of producers, by focusing on locally produced foods. This then "recouples" the food chain, moving consumption closer to production.

In theory, culinary tourism focused on local producers is more likely to spread the money equitably through the community. One issue, however, is that standard culinary tourism focuses on high-quality and memorable dining experiences. That means an emphasis on artisan production. Not all producers are able to fit those criteria, and not all foods will be attractive to tourists, so those producers are then left out of the tourist economy even though they may be necessary and integral to the local culture.

Culinary tourism is now being tied to economic development in a number of countries as well as in the United States. This is coming from governmental initiatives as well as the tourism industry itself. Some of the most interesting (and probably, most viable) are cooperatives of growers who band together and market their products along with their farms as tourism destinations. In this way, they ensure that they are all collaborating rather than competing with each other. They also then have more variety of products and activities to offer tourists, therefore attracting more tourists as well as giving them reasons to stay longer at their destination.

Within the tourism industry, ethical issues tend to boil down to a perceived need to balance competitiveness and sustainability. **Competitiveness** refers to the industry as a whole competing with other industries for markets and resources as well as individual businesses competing with each other within the tourism industry (and hospitality and travel industries).

Sustainability refers to the endurance of the resources used for tourism. This includes the physical resources (environment) as well as the economic ones. Tourists themselves are actually seen as a resource since businesses compete for them and ultimately depend on them for survival. Sustainable resources also include the local culture, traditional expressive forms that "add value" to a destination, and the social stability of the host community. The last is important since it translates into less crime, friendlier interactions between tourists and "natives," and better trained workers for the service industries connected to tourism. A broader perspective on sustainability identifies four "pillars" needed to ensure the endurance of resources: economies, environments, societies, and cultures. Culinary tourism involves and can potentially contribute to each of these domains.

In practice, these two issues are frequently in conflict with each other: short-term monetary profits oftentimes take precedence over long-term endurance of resources, particular in areas in which the local economy is inequitable. Also, the costs (negative impacts) and benefits (positive impacts) differ according to each participant

(stakeholder) – hosts (tourist destination culture and society), guests (the tourists), tourism providers (businesses), local governments, and the natural environment – in a particular tourism initiative, so that issues surrounding culinary tourism often have no single simple resolution. The World Tourism Association provided guidelines in 1996 defining sustainable tourism, and these are promoted, with varying success, for culinary tourism as well.

Issues: Environmental

Tourism in general can lead to depletion and degradation of environmental resources – land, water, air, flora, and fauna – when those resources are improperly or overused or if the amount of tourism activity exceeds the “carrying capacity” of a host community. Culinary tourism can have similar issues as well as ones specific to food if it promotes products that are threatened or unsustainably produced. (Travel to China for consumption of sharks fin soup would be an example.) Although some culinary tourists seek such “extreme eating” experiences or focus primarily on the aesthetic experience of food free of morality, many are aware of the environmental implications/impacts of their food choices.

Because culinary tourists, for the most part, want to experience food in its native habitat and sociocultural context, they offer an incentive to maintain those habitats. Also, they tend to want high-quality and artisan foods, both of which are frequently produced in sustainable ways – smaller farms, handmade rather than relying on technology, and possibly organically grown. They also tend to want to eat a variety of foods, which, in theory, can encourage protecting the biodiversity of an area. (Unfortunately, this last desire on the part of tourists often translates into importing foods that are not native or locally grown.) As the industry continues to grow, though, more businesses and tourists are aware of the potential impacts it can have and are more willing to work within the guidelines of sustainability.

Because of the obvious connections between food and the environment, culinary tourism

projects by 2010 frequently emphasize locally grown food produced with sustainable farming methods. This brings money to those growers and helps to establish them as viable links in the food chain. This in turn can have a positive impact on the environment since fewer resources tend to be used with fewer links. Culinary tourism is also combined with ecotourism, a niche that focuses on tourism practices beneficial to a local environment.

Issues: Social

Tourism in general, but including culinary tourism, is frequently critiqued as reflecting colonialist power structures that have historically created and maintained inequitable social systems (Gmelch 2010; Chambers 2010). It does create a class system based on “hosts” and “guests” in which guests are perceived as having more social and cultural if not economic status. This in itself can be problematic, especially since hospitality and friendliness can then become part of commercial transactions, leading to misinterpretations and interpersonal conflicts. Also, although the tourism industry oftentimes offers employment opportunities, except for a select few, these jobs tend to be low-paying and low-status in service industries in which workers have little say in their activities and must cater to the needs and whims of upper management and tourists. This can then breed social discontent and attitudes of resentment and distrust on the part of workers and does little to enhance cross-cultural experiences of tourists. Furthermore, jobs in tourism frequently are seasonal, so cannot be relied upon. The industry in general may also draw workers away from more stable, traditional, or socially significant jobs, disrupting traditional networks of exchange and impacting the community as a whole. Similarly, culinary tourism can also be intrusive by bringing outsiders into private and domestic spaces, such as neighborhood markets, home kitchens, and in-group oriented dining establishments.

Simultaneously, culinary tourism can also offer opportunities that would never occur

otherwise or for individuals who traditionally would not be given such possibilities. For example, domestic cooks may be able to now earn money by sharing their skills with tourists, perhaps elevating their own social and economic status. Similarly, tourist sites may change since some culinary tourists are now seeking out farms, markets, and small, family-run restaurants rather than the traditional tourist attractions. This can help to spread tourist dollars more equitably within a host community and allow for more socially sensitive interactions between hosts and guests. This might unfortunately be offset by the industry's emphasis on "unique" and "memorable" dining experiences since they tend to feature high-class foods as well as those that are more exotic and rare, regardless of their actual place within the local food culture.

Culinary tourism can actually be seen as a positive force in some instances in which it brings attention to healthier ingredients and preparation styles and more sustainable production methods. Many tourists now seek out local and organic foods, actually creating a market for foods formerly ignored or supporting farmers who were struggling to compete in the more industrial agriculture-based global food system. Belize provides an example of culinary tourists shifting from the British-based cuisine of tinned and imported foods to locally grown, native fruits and vegetables. This can be interpreted as a positive change towards environmental and economic sustainability in the local food system.

Another social issue connected to tourism in general is its role in cross-cultural communication and understanding. It is hoped that by being exposed to another culture, individuals become more sensitive to that culture, more aware that members of that culture are fellow human beings so that tourism can be a way to understand other cultures and to resolve conflict. Food, in particular is perceived as a way to learn about and bond with another culture. The simplistic assumption is that if people eat one another's food, they will better appreciate each other. Although food can be a window into another group's beliefs, histories, and practices, it is not an automatic bridge between different

cultures or even different individuals. Too often, tourists focus on what is either exotic or tasty to them and fail to learn to appreciate the everyday foodways of a group. Also, "breaking bread" together is not always a pleasant or fruitful experience, but requires a deeper understanding of the food cultures of all participants as well as sensitivity to the social patterns connected to meals and food.

Issues: Cultural

The cultural issues surrounding culinary tourism are complex, partly because culture itself is complex, dynamic, and constantly being reconstructed and reproduced according to the interests and resources of individuals but also because so much of culture is intangible and interpretive, dependent on the perspective of the individual. This also means that the cultural impacts of tourism cannot be assessed quantitatively or conclusively. Because food has "material presence," it offers a way to explore many of these issues. It is helpful, though, to think of cultural issues in terms of both the conceptualizations around food and the actual practices of foodways.

Tourism in general tends to exoticize or "other" a group of people, commoditize their culture, and shape their traditions in a variety of ways that then make them more attractive to tourists. As a force of globalization, it can also speed up the processes of modernization and industrialization, homogenize and "sanitize" the host culture, weaken cultural identities, and spread an invented "tourist culture" lacking historical authenticity. At the same time (Gmelch 2010; Chambers 2010), it can also create markets for cultural practices; bring attention, recognition, and affirmation to cultural groups and traditions; and create opportunities for cross-cultural interactions and understanding. One of the issues, then, is whether tourism is qualitatively different from any other exchanges between cultures. Critics point out that the difference in economic, political, and cultural status gives the tourist power to shape the public identity and image of the host culture in any way that suits them

(Heldke 2003; 2005), and it is this imbalance of power that is the problem that means that tourism “colonizes” other cultures. The food cultures of both hosts and guests are then changed because of that colonization.

To “other” a group of people means to set them apart from oneself and to focus on their differences rather than their commonalities. This then allows tourism to treat individuals and cultures as “resources” rather than human. A popular phrase used in tourism marketing and planning is “exotic but safe.” Applied to culinary tourism, it means that the food needs to be presented as exotic or strange enough to make people curious but familiar enough that they feel safe trying it. Food then is manipulated to fit those expectations, oftentimes changing it in some way or highlighting a food in a way not usually done within that culture or giving it new meanings.

This leads to issues of authenticity, another problematic concept connoting continuity with a culture’s past, core values, or expressive forms. On one hand, culinary tourism often emphasizes foods and foodways experiences thought to be “authentic,” that is, historically representative of a locale, but this emphasis can also ignore the dynamic quality of food cultures to change over time. Certain ingredients, recipes, or preparation methods then become canonized as the only accurate representatives of that culture, and the cuisine becomes “crystallized” into that form. Culinary tourism also may encourage “inauthentic” representations of the food culture by paying attention to foods perceived as the most unique, exotic, and interesting, requiring specialized culinary skill, high quality, and memorable. This in turn can create a “tourist cuisine” shaped to meet tourists’ expectations.

Culinary tourism also commodifies food and foodways. While food is oftentimes the center of monetary exchange, tourist activities emphasize the value of a food to attract tourist dollars. This then trivializes and “trinketizes” cultural practices and forms, turning them into “playthings” and souvenirs for tourists. Apart from being demeaning to the host culture, this process potentially weakens the emotional and social associations they carry, causing them to shift away from

expressing cultural histories, identities, and beliefs. The luau in Hawaii, for example, has become a tourist production with stereotypical foods, shifting from the sacred meanings held within the community to simply a party and feast for the tourists (O’Connor 2009). Such impacts can ultimately weaken cultural identity.

At the same time, commodification, and tourism in general, may affirm those cultural identities and meanings. As outsiders, tourists often notice regional and cultural boundaries as well as distinctive practices. This attention can have positive impacts in defining and strengthening the identities behind those practices and can even shift the place of those identities in public consciousness to a higher status (Long 2010). Tourists may also provide financial and social support that enables participation in local culinary traditions.

This challenges the critique of tourism as homogenizing host cultures, making them all the same in order to please tourists. Some researchers argue, though, that culinary tourism actually discourages homogenization since it features foodways distinctive to specific locales, encouraging hosts to maintain or revive those local traditions (Meethan 2001; Wilk 2006). Culinary tourism can also encourage “glocalization,” the adaptation of global products to local forms (Ritzer 1993).

Food being a commodity also changes the relationship between the producer–host and consumer–guest. It is not just a matter of good hospitality to offer food that one’s guests will like; it is also good business. Recipes may be changed, ingredients substituted, and new foods invented to attract tourists. Also, festive dishes and meals tend to be featured rather than everyday foods, misrepresenting the food culture as a whole.

Culinary tourism raises questions of intellectual property rights connected to intangible cultural heritage. Can the recipes, preparation methods, or cooking styles of a culture be used by anyone who wants to for profit? Do members of that culture have legal ownership of those traditions, so that only they can claim them as representing their culture? Furthermore, who within a cultural group has the right to define what is a tradition or a characteristic of the culture?

Similar questions can be asked of entire cuisines and are being addressed in attempts to protect heritage from modernization and globalization. Geographical indicators are used in many countries to designate the accurate origin of a food product, with France establishing the Appellation d' Origine Contrôlée in the early 1900s to protect cheeses and wines. This is based on the older concept of terroir (taste of place) and allows regions to claim certain types of produce as belonging to them. An arm of the government also sets standards by which any produce from a designated region can carry an AOC stamp of approval.

Summary

Culinary tourism has significant impacts on food cultures, food systems, and the economies, environments, societies, and cultures surrounding them. These impacts are potentially beneficial but can simultaneously be harmful, depending on the perspective of the evaluator. It is essential that the complexity of culinary tourism be recognized so that issues can be addressed.

Cross-References

- [Authenticity in Food](#)
- [Intellectual Property and Food](#)

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D

Derrida and Eating

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Synonyms

Hospitality and food; Meat: ethical considerations

Introduction

Jacques Derrida makes an analogy between eating other beings or substances and assimilating others' values and ideals. He makes a distinction between assimilating others – whether food or other people – in ways that nourish and ways that conquer them as trophies. Through this analogy, Derrida is concerned to develop an ethics that respects one's differences from others while acknowledging that one needs to eat or assimilate others in order to live. He makes a connection regarding what is good to eat in both physical and moral senses.

What Is Good to Eat?

In the interview "Eating Well," Derrida wonders whether a head of state (*chef d'Etat*) could gain office by declaring him (or herself) a vegetarian and concludes, "the chief (*chef*) must be an eater of flesh" (Derrida 1991, p. 114). In the United States, political leaders are often seen hunting,

particularly bird hunting, which seems to demonstrate their manly fortitude and bloodlust that can keep citizens safe. Hunting itself as a trope has become a trophy of sorts within the rhetoric of political image making. And meat eating or eating flesh is a sign of strength and fortitude. It is interesting to note that Derrida was an "eater of flesh." In this same interview, Derrida associates eating well with ethical obligations that separate moral and physical nourishment from trophies. There, Derrida maintains that the oppositional limit between animal and man, and even between living and nonliving, has been challenged to the point that the ethical question in relation to animals is not whether they are subjects, sentient or feeling, and so forth and therefore should not be killed but rather how to eat them in the most respectful way. For Derrida, one can no longer draw rigid borders between humans and animals because one can no longer define any absolute boundary between self and other. The question of the relation between man and animal comes back to the question of the relation between the self or subject and the other. He concludes:

...the question is no longer one of knowing if it is 'good' to eat the other or if the other is 'good' to eat, nor of knowing which other. One eats him regardless and lets oneself be eaten by him... The moral question is thus not, nor has it ever been: should one eat or not eat, eat this and not that, the living or the nonliving, man or animal, but since *one must* eat in any case and since it is and tastes good (*bien*) to eat, and since there's no other definition of the good (*du bien*), *how* for goodness sake should one *eat well* (*bien manger*)? (Derrida 1991, pp. 114–115).

By *eating*, Derrida means not only the physical act of ingesting food but also the metonymical act of interiorizing symbols, language, and social codes. Experience and sensation are also implicated in this eating. All forms of identification and assimilation in relations to the Other (language, meaning, and so forth) and others (including animals, plants, rocks, and so forth) are literal and/or metaphorical forms of eating. Derrida argues that all relationships invariably literally or symbolically assimilate the other; assimilation is necessary not only for war but also for communion and love: communication depends upon the assimilation of the Other (especially language and meaning) and others (friends, family, and loved ones). One learns language through assimilating words, one understands others and communicates with them by assimilating traditions and values, and so forth. Both words and food move through the orifices of the body, most particularly the mouth.

Derrida says “as concerns the ‘Good’ (Bien) of every morality, the question will come back to determining the best, most respectful, most grateful, and also most giving way of relating to the other and of relating the other to the self” (Derrida 1991, p. 114). For Derrida, the *good* of morality or ethics is explicitly linked with the *good* of eating as in *tastes good* and *eating well*. Derrida emphasizes that one *must* eat. It is both a need and a desire, and the *must* is both a natural necessity – living organisms must eat to live – and a moral obligation; in some cultures suicide, even by starvation, is considered immoral. In addition, all community or communion requires some form of assimilation – common language and customs – that Derrida metonymically links to eating. One must eat. And since one must eat both by need and by desire, the question is not whether or not to eat but how to eat.

What to Eat and How to Eat

Derrida presses the question of what to eat given that ultimately any lines one might draw between man and animal, animal and vegetable, living and nonliving are always fluid and open to debate.

The “what” of “what should one eat?” is a moving target as both needs and desires change: one is told to change diets for the sake of life and health, and customs and sensibilities oblige one to make dietary changes for the sake of ethical obligations to other creatures and renewing the resources of the planet. Also, on the metonymical level, languages and symbolic resources are shared. So the question of what to eat is never answered once and for all; it has to be continually asked in the vigilant, and ultimately undecidable, way required by hyperbolic ethics. Following Emmanuel Levinas, Derrida proposes what he calls *hyperbolic ethics* in order to insist on urgency and the necessity for constant vigilance. Its imperatives and responsibilities are hyperbolic because they demand the impossible: that one be hyper-aware of the ways in which actions and decisions fall short of ideals. Like the infinite curve of a hyperbola, we can only continue to approach the asymptote that is our ideal. Moreover, we must be hyper-aware of the ways in which ideals themselves exclude others, even others whom one may not recognize. So, although one must eat, one also has an ethical obligation to decide how to eat in a way that respects others, even those whom one ingests. Moreover, one must choose a style of eating, a lifestyle, in the face of ultimately undecidability and uncertainty about relations to others. In other words, the question of “what” is a metaphysical question that is essentially undecidable; a question that must be answered but cannot be answered with any certainty. The question, then, “is it good to eat?” is fraught with ambiguity in the face of which one has ethical obligations that one does not even recognize as such. The ethical question par excellence for Derrida, then, is not whether or what but how: how to eat-assimilate well. It is crucial, however, to point out that the questions of what and how are intimately linked. One decides how to treat other beings on the basis of presuppositions, beliefs, and conclusions about *what* they are: are they sentient, are they human, are they capable of suffering, etc. *How* one treats them – or eats them – is determined in large part by *what* they are.

Does Deconstruction Imply Vegetarianism?

Discussing Derrida's ambivalence toward vegetarianism, philosopher David Wood says, "Derrida is reported to have said at the Cerisy conference in the summer of 1993, 'I am a vegetarian in my soul'. The proper place for vegetarianism is not in the soul but in a complex reworking of the investments of the oral sphincter and all its personal and political ramifications. Carnophallogocentrism is not a dispensation of Being toward which resistance is futile; it is a mutually reinforcing network of powers, schemata of domination, and investments that has to reproduce itself to stay in existence. Vegetarianism is not just about substituting beans for beef; it is—at least potentially—a site of proliferating resistance to that reproduction" (Wood 1999, pp. 32–33). Against what he suggests may be Derrida's "beautiful soul," Wood argues for vegetarianism as a "symbolic substitute for unlimited and undelimitable responsibility—the renegotiation of our Being-toward-other-animals" (Wood 1999, p. 32). Wood refuses to accept what seems to be suggested by Derrida's remark that "vegetarians, too, partake of animals, even of men." It is not so much that Wood denies that vegetarians also participate in systems of domination and live in various essential ways off of killing and eating animals, including other human beings.

Rather, on the one hand, Wood imagines a more "deconstructive" form of vegetarianism – or perhaps a more vegetarian form of deconstruction – through which one might rethink all relationships to others; and on the other hand, he insists that there is a difference between eating beef and eating beans that cannot be so easily disregarded, even in the name of keeping vegetarians honest. In other words, although all are implicated in killing and eating the flesh of others, it still matters ethically and politically whether or not one decides to eat beef or beans. As Wood insists we have to be able to distinguish really eating animals from eating them symbolically. Even if, as one learns from Derrida, conceptually the real and the symbolic are inseparable (they have their meaning only in

relation to each other), on the level of practical ethics and politics, it is imperative to keep them distinct, which, according to Derrida, can be done only by acknowledging the ways that one is implicated in the other. In other words, one can separate really eating from symbolic eating only by recognizing how the two are always already mixed.

In his criticisms of Wood, philosopher Matthew Calarco emphasizes this later aspect of deconstruction, namely, that one cannot stop questioning investments in killing others, including other animals and other people, just because one quits eating meat. Deconstruction, as Calarco suggests, requires ongoing self-interrogation into both how and what to eat. The ethics of deconstruction must radically question what Calarco calls "the undisclosed anthropocentric and carnophallogocentric limits of the dominant discourses in animal ethics and vegetarianism," which base human responsibilities to other animals on similarities with them (Calarco 2004, p. 197). Calarco concludes that deconstruction may provide a way of thinking about ethical obligations to animals beyond what one might call taking the easy way out by finding similarities. While deconstruction may provide a much needed antidote to rights discourse based on identity, Calarco's beef with Wood sometimes seems to degenerate into a debate over the virtues of veganism over vegetarianism. As both Calarco and Wood acknowledge, however, Derrida's point is that ultimately where the line is drawn between oneself and others is radically undecidable in any certain metaphysical terms and yet at the same time unavoidable. Ethics cannot be founded on counting how many species are sentient or suffer, whether one eats shellfish or so-called animal products like dairy. What about bacteria, viruses, and fungus that feed on humans? Aren't they living beings too? Should one kill them? Can one be open even to the other who feeds? Derrida is adamant that an extreme ethics allows that one can never know from where – or from whom – an ethical call will be heard. Ethical responsibility is motivated by radical differences that multiply rather than

diminish or calculate the species of ethical calls. Derrida seems to ask “Can we eat the other in a way that nourishes her as well as nourishes us?” In other words, is there a virtuous way of eating the other? This question involves both the how and what, not to mention the why, of ethical eating.

Eating Well

For Derrida, ethics comes down to the question of eating well or in a sense good taste. Derrida says “The Good can also be eaten. And it must be eaten well” (Derrida 1991, p. 115). It is not just a matter of interiorizing or assimilating the Good but rather learning the lesson well, taking it to heart, but not by making it second nature or habit. Eating well requires vigilance and must resist becoming merely a habit. If it does become a habit, then it is no longer ethical because it does not continue to question and to “learn.” If morality becomes a habit, then one is like a trained animal, reacting rather than responding. Derrida takes the ideal of the pure heart and embraces it, but only in its impossibility; it is precisely this impossibility of the pure that separates (radical or pure) ethics from morality. But for Derrida, taking to heart is an impossible ideal that can never be realized, yet must be attempted anyway and always. Indeed, if it were realized in the sense of becoming a moral or mental habit, then it would no longer be ethical. In Derrida’s writing, the romantic faith in the purity of nature becomes a rejection of that very purity in the name of an impure purity or a taste for impossible purity, forever deferred, a purity of the future, a purity to come. For Derrida, an ethics that remains open to surprise or open to the other requires giving up moral habits along with the notion that morality is a matter of habit. Doing good as a matter of habit or convention reduces ethics to nothing more than a reaction to stimuli, and man becomes a well-trained horse or dog, doing clever tricks to impress his master.

In spite of his departures from the romantics, Derrida embraces ideals of generosity that

suggest the individual’s inherent and intimate relations with others. Derrida says that in order to be good, food must be shared. To eat well, one must share not only food but also nourishment; one has an obligation to attend to the other’s nourishment even as one feeds oneself:

The infinitely metonymical question on the subject of ‘one must eat well’ must be nourishing not only for me, for a “self,” which given its limits, would thus eat badly, it must be shared, as you might put it, and not only in language. ‘One must eat well’ does not mean above all taking in and grasping in itself, but learning and giving to eat, learning-to-give-the other-to eat. One never eats entirely on one’s own: this constitutes the rule underlying the statement, ‘One must eat well.’ It is a rule offering infinite hospitality (Derrida 1991, p. 115).

In this regard, one could learn something about eating well at table from the metonymical “eating” of speaking and vice versa (there is no private language), or one could say that to speak only to oneself or for oneself is to speak badly because (even when talking to oneself) language presupposes an addressee. Language entails response ability insofar as it is always addressed to someone, in particular or in general, near or far, radically other (like the time capsules launched into space from earth intended for extraterrestrials) or the other within the self. The “must” of “must eat” compels hospitality insofar as eating well is a social experience. Obviously food is the heart of many social and familial gatherings and events, and it is usually the result of some sort of cooperation or exchange in that (in developed countries) very few people eat only the food that they produce themselves (indeed, it would be a mighty task for one individual alone to produce – grow, harvest, cook, and so forth – all of the foodstuffs that he consumes). The ethics of eating well, then, seems to imply a politics of food through which one attends to how one acquires nourishment. Derrida’s eating well may have something to say to “slow food” and “local food” movements. In addition to food, languages, cultures, customs, and love are also shared, which more obviously raise political questions about English-only policies, multiculturalism, and globalization.

Hospitality and Eating with Others

Unfortunately, more often than not, the cooperation and social exchange that allow one to eat is built on exploitation within an economy of exchange that makes everything fungible. The fact that eating or speaking requires a group effort or global exchange should not be confused with hospitality. In addition, the ethical obligation that Derrida describes is not just to hospitality, to sharing food and nourishment (of all sorts), but, moreover, to *infinite* hospitality. To eat well is to be infinitely vigilant in one's hospitality to the other, even the very other whom one eats. In fact, as Derrida articulates this ethical obligation, it is this "who" or "whom" that incessantly must be put into question, both on the side of the "subject" and on the side of the "other": *who* claims the rights and privileges of *whom*, of subjectivity? Who has the right to judge the subjectivity or humanity of others? Derrida calls into question the ways that subjects give themselves the right to divide the world into subjects and objects/others, man and animals, those who eat and those who are eaten (both literally and figuratively).

Derrida calls this infinite hospitality "absolute" or "pure hospitality," which he envisions as the foundation of hyperbolic ethics (e.g., 2005, p. 249; 2000, p. 25). In *Of Hospitality*, he describes the rule or law of hospitality as impossible since true hospitality cannot be dictated by law, custom, habit, or training but must come "from the heart." He plays on the fact that in French *hôte* means both host and guest, suggesting the fluidity of giving and receiving. That the host can become the guest and vice versa, just as the eater can become the eaten and vice versa, indicates both the instability of power relations and the relationality of subject positions. Pure or absolute hospitality requires giving up the illusion of being at home or owning a home in which one can play host.

The Limits of Nourishment

In his first posthumously published book, *The Animal That Therefore I Am* (Derrida 2008), Derrida calls his project a limitrophy, and he draws

out the etymological associations of the word *trophe*, which takes one back to eating: "In the semantics of *trepho*, *trophe*, or *tropos*, we should be able to find everything we need to speak about what we should be speaking about. . . : feeding, food, nursing, breeding, offspring, education, care and keeping of animals, training, upbringing, culture, living, and allowing to live by giving to live, be fed, grown, autobiographically" (Derrida 2002, p. 398). Derrida goes on to point out that "the first literal sense of *trepho*" is "transforming by thickening, for example, in curdling milk" (398).

One could say that in Derrida's limitrophy, paradoxically, the purity demanded by hyperbolic ethics requires the curdling or thickening of frontiers, borders, or limits. This curdling leaves them in a liminal state between fluid and solid, which opens the border onto multiple forms beyond two defined as one side of the limit or the other. Derrida seems to challenge the limits of solid borders, which appears within the history of philosophy as fixed, rigid, and pure, in the name of pure fluidity, which is, of course, impossible. In the name of pure fluidity, Derrida continually points to the curds, those strange substances that cannot be properly classified as solid or liquid. Ironically, perhaps, the "purest" forms turn out to be thickened or curdled, the in-between substances that are neither purely liquid nor purely solids. Derrida seems to prefer curds and curdling to either solids or fluids (as a metaphor for his attempts to navigate between absolutism and relativism). He embraces the ambiguities of life even while maintaining some notion of purity. In this way, Derrida endorses an ethics motivated by *trophe* or nourishment rather than *trophy* or conquest. For Derrida, there is ambiguity between the two to the point of inseparability; in other words, nourishment is always at some level also conquest.

The double meaning of *trophe/trophy* may be instructive, however, in the necessary (if ultimately impossible) attempts to distinguish eating well or good eating from devouring the other in poor taste. *Tropho*, *tropho*, and obsolete forms of *trophe* are associated with feeding and nutrition, while *trophy* is associated with the spoils of war

or the hunt that have been made into monuments. Does one kill and eat the other for trophe, nourishment, or for trophy, sport and triumph? Is one's relationship with the other and with others nourishing, or is it a display of power and conquest? These questions can be asked on the literal level about hunting and killing animals or people and on the figurative level about assimilating speech and cultural conventions. Are some forms of assimilation wholesome and others merely for display? Hyperbolic ethics requires vigilance in continually asking how what feeds us becomes imbricated in relations of power and domination.

Derrida's ethics cautions one not to draw this line between nourishment and triumph in a fixed or rigid way; to do so is not only to become reactionary rather than responsive but also and moreover, to shirk an ethical responsibility to the radical openness and fluidity of all moral categories. In this sense, ethics provides a kind of corrective for morality. If morality divides the world into good and evil, then hyperbolic ethics demands that one constantly questions that division and investment in it. Are these distinctions made in order to foster nourishing and healthful relationships or is the world divided in order to conquer it and take others as trophies? In terms more familiar to recent discussions in ethics one might ask, are differences circumscribed to justify hierarchies and domination or to respect them and acknowledge their value?

Derrida argues that the unity and identity of both the individual and the social bodies feed off of those very others it rejects; it both secretes its own poison and feeds off of it. Discussing the "scapegoats" cast out of the city of Athens, Derrida remarks, "the representative of the outside is nonetheless constituted, regularly granted its place by the community, chosen, kept, fed, etc., in the very heart of the inside. These parasites were as a matter of course domesticated by the living organism that housed them at its expense" (Derrida 1972, p. 133). The scapegoat plays the role of a pharmakos, both sacrificed for and yet constitutive of humanity; the animal is both inside and out.

What hyperbolic ethics requires is that one turns the sacrificial logic back on itself and gives up the need for scapegoats and sacrificial lambs (human and animal). Hyperbolic ethics requires that one continues to question investments in discourses of purity, trying to avoid any simple conquest of others, even through the triumphant moves common to philosophy. Perhaps, in the spirit of trophe, one can thoughtfully assimilate the lessons of Derrida's work in the hopes of feeding a robust ethical theory that speaks to the question of how to relate to others, including animals and other living creatures with whom the earth is shared, in ways that nourish rather than conquer.

Summary

In sum, Derrida argues that although one must eat or assimilate other living beings, there are more and less ethical ways of doing so. He is not arguing for vegetarianism but rather for a thoughtful approach to eating for the sake of nourishing oneself and others rather than for the sake of proving dominance over others or conquering them and making them into trophies. His hyperbolic ethics requires that one always remains open to reconsidering what is "good" to eat.

Cross-References

- [Hospitality and Food](#)
- [Meat: Ethical Considerations](#)
- [Slow Food](#)
- [Systemic Ethics to Support Wellbeing](#)
- [Vegetarianism](#)
- [Waste and Food](#)

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East European Agriculture

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Synonyms

Agriculture in transition economies; Post-Soviet farm privatization; Post-Soviet farm restructuring

Introduction

The agriculture of Eastern Europe is very diverse in terms of agroclimatic and socioeconomic conditions, cultural heritage, and historical context. There is, however, one common and unique factor that brings this wide and diverse set of countries and agricultural settings into focus – the historical interface between their agricultural production systems and the Soviet sphere of influence between WWII and December 1991, when the USSR officially dissolved. Even though the longer history of this region includes many interactions among these countries, including wars, changing political regimes, and widely shifting borders, the focus of this entry is on the common socialist heritage and differing paths in the transition from the Soviet period to the

present day. Specifically, we consider the issues, choices, and strategies associated with implementation of post-Soviet land reforms and transformation of collectivized and state-owned farms in these countries. As shown, the ethical issues such reforms created relate to the questions regarding the equitable distribution of resources. The discussion of land reform and farm restructuring includes such components as privatization and allocation strategies for the transferability of land and other farm assets. This entry also highlights future trends and unsolved problems in the region related to the structure of farming and performance of agricultural systems.

The countries included for consideration in this entry were either part of the Soviet Union or came under its influence following WWII (Fig. 1). The territory of former East Germany is not included, because it was unified with Germany in 1990. The specific countries consist of:

1. Western countries of the Commonwealth of Independent States (CIS): Belarus, Moldova, Russian Federation, and Ukraine
2. Western Balkans: Albania, Bosnia and Herzegovina, former Yugoslav Republic of Macedonia (FYROM), Republic of Kosovo (Kosovo under UNSCR 1244), Montenegro, and Serbia
3. New member states of the EU: Bulgaria, Croatia (as of July 1, 2013), Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia



East European Agriculture, Fig. 1 Eastern European countries under the Soviet influence

Implications of the Common Soviet Heritage

The Soviet approach to agriculture, which was centered around collectivization of land and other farm assets, heavily influenced the structure of agriculture in the region for nearly 50 years. Despite this universal influence, East European countries differed in how they implemented collectivist principles. These differences were often the result of varying pre-Soviet agricultural structures, which also influenced and shaped the post-Soviet agricultural transitions. For example, among USSR countries, the three Baltic countries (Estonia, Latvia, Lithuania) had a growing private and individual farming sector during the interwar period and clear property rights that could be the basis for land restitution, while Ukraine had no such basis for post-Soviet farm restructuring. Among Central and East European

countries, the Yugoslav Republic did not experience any significant farm collectivization and Poland collectivized but then rapidly decollectivized, whereas most other nations did experience enduring collectivization. Finally, Belarus is alone among all these countries in terms of preserving much of the farming structure of the Soviet period and seeing very little change in its political system as well. In this entry such differences among the countries in the region will be briefly discussed, and their role in shaping transition processes in agriculture will be explored.

At the core of the Soviet agricultural model was the forceful collectivization of the peasants' land and other farm assets that started in the early 1930s in the Northern Caucasus, Volga, and Siberian regions of Russia and Ukraine (Wegren 1998). By the early 1960s the collectivization was completed throughout most of Eastern

Europe, except for Poland and Yugoslavia, whose agriculture remained largely based on small-scale farming throughout the Soviet period. Nevertheless, these individual farming systems still operated under central (State Plan) control of the economy even in Poland and Yugoslavia, and the structure of farming was essentially frozen in place, while individual farms in nearby Western European countries were evolving in size and structure in response to changing policy and market conditions.

As a result of collectivization, a system of large farms was created. In the 1980s, an average farm in the USSR had over 4,000 ha of sown land, which was one to two magnitudes larger than the farms in the market economies with comparable agricultural resources (Lerman et al. 2004). Moscow saw industrialization and mechanization of agriculture as a major way of agricultural development of the Soviet nations. It was also easier for the state to control the production and distribution on fewer large farms rather than on numerous small ones, even though there still were more than 50,000 state and collective farms in 1988.

There were two types of large farms – state farms (*sovkhoz*) and collective farms (*kolkhoz*). In case of the state farms, land and all the production assets belonged to the state. Its employees were considered state employees who received monthly salaries and wages, similar to industrial enterprises. Collective farms, on the other hand, presupposed that, while the land was owned by the state, the productive assets were jointly owned by the members of the farm. The workers from the farm were compensated through the distribution of the farm earnings instead of state-issued salaries (Lerman et al. 2004). Starting in 1966, collective farm employees were to receive regular wages and became eligible for state-provided welfare benefits. In reality, much of their remuneration was in-kind rather than monetary in the 1960s and into the 1970s. Over time the differences between two types of farms were often indistinct as the government's social and agrarian policies increased collective farmers' incomes and improved the level of mechanization for these farms. If, for example, the earnings of

a collective farm were insufficient to pay planned wage to its workers, the state would provide the missing funds from the budget. It was also common for especially successful collective farms to reregister as a state farm.

A common feature of most state and collective farms was that families of workers had personal plots (household plots or *lichnoe podsobnoe khoziaistvo*), on which families could grow vegetables, potatoes, or fruits and raise a few animals, primarily for their own use. They often relied heavily on inputs and machinery services of the main farm where they were employed. These subsidiary plots, as they were also sometimes called, became more important in the post-Soviet transition, because they were the first ones in line for privatization.

Another distinctive feature of the Soviet agricultural model was central control by the state of all aspects of farm production, wholesale prices, and retail prices of food. Both input supply channels and output markets, including food storage, processing, distribution, and sale, were controlled by the central authorities who also set the production targets. The state also had a monopoly over all agricultural finances, credit, and banking.

During the 1980s, agriculture constituted a significant share in the economies of the Eastern European countries. As is highlighted in Table 1, during this time, the agricultural sector on average accounted for almost one-fifth of the GDP in the Soviet bloc, with the largest share of agriculture value added being in Albania, Belarus, Moldova, Ukraine, and two Baltic countries (Estonia and Lithuania). Rural population on average accounted for 44 % of the population, while agricultural employment constituted 23 % of the total employment (compared to only 13 % in 2010).

Because the economies of Eastern European countries were heavily dependent on agriculture, agricultural reforms, especially privatization and farm restructuring, constituted some of the main components in the transition programs of the former socialist countries. Nevertheless, although the privatization of agricultural land and other farm assets and the restructuring of traditional collective and state farms were widespread, the methods adopted to implement these

East European Agriculture, Table 1 The agrarian profile of the Eastern European countries

Country	Share of rural population, %		Share of agricultural employment, %		Agricultural value added in GDP, %	
	1980–1989 average	2011 or the last available	1980–1989 average	2010 or the last available	1980–1989 average	2011 or the last available
Albania	65	46	56.1	44	33.2	21
Belarus	38	25	23.0	10	24.5	10
Bosnia and Herzegovina	63	51	10 ^a	3	–	9
Bulgaria	36	26	17.0	7	11.8	6
Croatia	48	42	14 ^a	15	15 ^a	5
Czech Republic	35	27	12.3	3	6.6	2
Estonia	29	30	14.9	4	20.9	4
FYROM	45	41	19 ^a	9	17 ^a	11
Hungary	41	30	17.0	5	17.0	4
Latvia	30	32	16.1	9	18.0	4
Lithuania	35	33	23.4	9	25.8	4
Moldova	57	52	38.5	31	30.0	11
Montenegro	58	37	–	15	–	9
Poland	40	39	28.8	13	12.1	4
Romania	50	47	29.7	30	14.2	7
Russian Federation	28	26	15.0	10	14.8	4
Serbia	49 ^a	43	–	24	–	34
Slovak Republic	46	45	13.0	3	6.9	4
Slovenia	51	50	–	9	–	2
Ukraine	35	31	34.8	16	21.7	10

Source: Compiled by the authors from World Bank database (2012), Lerman et al. (2004), Mizik (2009)

^a1992 estimate

policies fell into different patterns. The land privatization was usually dominated by either restitution to former owners or by distribution to farm workers. The restructuring was focused either on creating family farms or on creating other forms of market-oriented organizations, such as cooperatives of owners of agricultural assets, joint-stock companies, limited-liability companies, or partnerships. Depending on the methods of privatization and government policies of restructuring, different farm structures emerged in different transition countries. Table 2 summarizes the major differences in land distribution and land markets functioning in the countries of interest.

After more than 20 years of transition, all of the countries that were under the Soviet influence, except Belarus, were successful in the transfer of the property rights on land and other

farm assets to private owners. In Belarus private ownership of land was limited to personal plots only; most of the land resources in the country remain state owned. However, in a number of countries, there are still substantial restrictions to the land market functioning. In Ukraine, for example, a moratorium on purchase and sale of agricultural land has been repeatedly extended since 2002.

Post-USSR Patterns of Agricultural Transition

The countries in Eastern Europe can be divided into four broad categories, based on the type of land distribution and on resulting farm structure: (1) countries with land redistributed to the workers and predominantly corporate farming

East European Agriculture, Table 2 Differences in land reform implementation in the Eastern European countries

Country	Small farms dominated before the USSR	Land restitution to former owners	Land distribution to farm workers	Land market functioning as of 2005	Land market restrictions as of 2005
Albania	Yes	No	Yes	Yes	Moderate
Belarus	No	No	No	No	Substantial
Bosnia and Herzegovina	No	Yes	No	Yes	Moderate
Bulgaria	Yes	Yes	No	Yes	Minimal
Croatia	No	Yes	No	Yes	Minimal
Czech Republic	No	Yes	No	Yes	Minimal
Estonia	Yes	Yes	No	Yes	Minimal
FYROM	No	Yes	No	Yes	Moderate
Hungary	No	Yes	Yes	Yes	Minimal
Latvia	Yes	Yes	No	Yes	Minimal
Lithuania	Yes	Yes	No	Yes	Minimal
Moldova	No	No	Yes	Yes	Moderate
Montenegro	No	yes	No	Yes	Moderate
Poland	No	Yes	No	Yes	Minimal
Romania	No	Yes	Yes	Yes	Minimal
Russian Federation	No	No	Yes	Yes	Moderate
Serbia	Yes	Yes	No	Yes	Moderate
Slovak Republic	No	Yes	No	Yes	Minimal
Slovenia	No	Yes	No	Yes	Minimal
Ukraine	No	No	Yes	No	Substantial

Source: Compiled by the authors from Wegren (1998), Lerman et al. (2004), Mathijs and Swinnen (2000), and Gerber and Giovarelli (2005)

(Moldova, Russia, and Ukraine), (2) countries with land restituted to the former owners and predominantly corporate farming (Czech Republic and Slovak Republic), (3) countries with land restituted or compensated to the former owners and a mixed structure of individual and corporate farming (Estonia, Latvia, Lithuania, Albania, Bulgaria, Romania, Hungary), and (4) countries where individual farming was preserved during the socialist era, and, thus, no significant land distribution took place after 1990s (Poland, Croatia, Macedonia, Montenegro, Slovenia, Serbia, Bosnia and Herzegovina). Albania and Belarus constitute unique cases. After the collapse of the Soviet Union, collective farms in Albania were disbanded and land was distributed to the former workers, but unlike the case of Western CIS countries, small farms predominated in the farm

structure of the country since then. In Belarus private ownership on the land was only extended to the personal (household) plots, while up to 90 % of agricultural land remained in the state and is operated by the large Soviet-style farms.

Land Distribution and Predominantly Corporate Farming (the Russian Federation, Ukraine, Moldova)

Before the creation of the Soviet Union, Western CIS countries did not have a widespread culture of family farms. Therefore, after the collapse of the USSR, the new governments of these countries followed the path of redistributing land to the workers of the state and collective farms rather than restituting it to the former owners. New landowners were first issued paper certificates of entitlement, which were later converted

into physical land plots if certain conditions were met, allowing owners to rent out, sell, or form individual farms. Land was not registered to “households” but to individuals, either as joint ownership or single owner.

Despite the distribution of land to individual farms, the transition to small-scale family agriculture in Russia, Ukraine, and Moldova has varied greatly and the majority of agricultural land is still controlled by large corporate farms. The structure and significance of such farms, however, differ by country. For example, Russia and Ukraine have become a home to mega-sized farms (often larger than 100,000 ha), called agriholdings, which are often vertically integrated with processors and/or exporters. The majority of agriholdings have been formed in the grain sector, while some of them function in the oilseed, sugar, and dairy sectors. Some farms have managed to attract financing through IPO and borrowing from private investors or European Bank for Reconstruction and Development.

There are several reasons for the existence of agriholdings. Among them are vast availability of relatively cheap fertile land, small-scale landowners with little bargaining power over rental terms, poorly functioning credit markets, sufficient level of infrastructure development, access to world markets, productive and relatively cheap labor, and increasing commodity prices as a promise of higher profits. However, the major reason for their emergence as a unique phenomenon to the post-USSR (rather than Western) countries is the underdeveloped institutional and legislative conditions of the transition economies that allow for large capital accumulation.

Existence of such gigantic farms has both its benefits and risks; as a result, agriholdings are currently in the center of policy debate both in Ukraine and Russia. The major benefit of agriholdings is that they attract a large amount of investment in the agribusiness sector both from domestic and international investors. Additionally, the economies of scale of agriholdings allow them to decrease the cost and increase the efficiency of production, while the extent of their integration allows for the fast and smooth product movement from a farm to an exporter or domestic user.

The main risk is the disconnect between agriholdings and the rural areas where they operate. First, they displace significant numbers of agricultural workers, which reduces employment and incomes in the rural areas. Also, the major headquarters of such holdings are usually located in the larger cities and not in the areas where the production takes place. Therefore, agriholdings pay taxes to the cities, which, in turn, decreases the stream of financing to the rural territories. This results in lower levels of financing of infrastructure and public goods provision in the rural areas of Russia and Ukraine. Another risk is the tendency of agriholdings to engage in monoculture practices that lead to deterioration of land quality and other environmental externalities.

Land Restitution and Predominantly Corporate Farming (the Czech Republic, Slovak Republic)

Prior to WWI, Czechoslovakian agriculture was characterized by large estates. Between 1918 and 1945 before the Communist party seized power in the country, some attempts of redistribution of land to the Czech and Slovak peasants took place. However, major redistribution happened during the Soviet era. Between 1945 and 1948, the pro-communist government instituted a three-stage land reform that resulted in 4.2 million ha of land (both agricultural and nonagricultural) being confiscated from large owners. The upper limit on the size plot was set at 50 ha. Once the land was redistributed among the peasants, the second (collectivization) stage of the reform began. It implemented several strategies to incentivize farmers to participate in cooperatives. For example, individual farmers were discriminated against when obtaining machinery for their farms. Sometimes the government officials would take a more direct approach by expropriating the land of the largest farmer in the village or forcing him/her to transfer land to the collective use. The major collectivization in Czechoslovakia happened during the 1950s (Swinnen and Rozelle 2006). By 1985, 63.5 % of the land in the republic was owned by the collective farms, 30.4 % by state farms, and the rest remained in private property.

Following the 1990s, new legal regulations with regard to land reform in the country were implemented in Czechoslovakia, which in 1993 split into the Czech Republic and Slovak Republic. According to the new legislation, land-owners could claim back their land which had been taken away during socialism. At first, the land reform presupposed imposing a limit on the claims by the former owners to 150 ha of agricultural land and later 250 ha of land, but in 1992 such limits were abolished. This resulted in non-egalitarian distribution of land in private ownership. As an example, after the land reform, a small group of Czech farmers owned 55 % of the total privately owned farm land in the country (Swinen and Rozelle 2006).

Land Restitution or Compensation to Former Owners and a Mixed Structure of Individual and Corporate Farming (Estonia, Latvia, Lithuania, Bulgaria, Romania, Hungary)

With regard to collectivization, Bulgaria was the first country to achieve full collectivization among the current EU new member states (NMS), which was not the case for Hungary or Romania. Even towards the end of the Soviet rule, both countries had a relatively large share of private agriculture, and their agricultural structure could be characterized as a symbiosis between small- and large-scale farms. The Baltic countries were part of the USSR and, therefore, fell under the collectivization orders from Moscow. By the end of 1950s, less than 10 % of the family farms escaped collectivization in the Baltics (Meyers and Kazlauskiene 1998). However, since family farming was predominant in the agricultural structure of the Baltic countries before the Soviet rule, the transition began with a priority to restore family-based agriculture through land restitution to the former owners.

After the fall of the communist regimes, the majority of agricultural land in the countries that are included in this category was redistributed to private farmers who used it to form family farms. However, there are still differences among these countries in terms of both collectivization processes and land reform implementation. For example, in Hungary, land was distributed both

via compensation to former owners and land allocation to the workers of the state and collective farms. This was not the case for the Baltic countries, Romania, or Bulgaria, which only restituted collective land to former owners or descendants of the owners.

Preserved Individual Farms During Central Planning (Poland, Croatia, Macedonia, Montenegro, Slovenia, Serbia, Bosnia and Herzegovina)

Poland and the Socialist Federal Republic of Yugoslavia were two countries in which agriculture was never fully collectivized. For example, in both Poland and Slovenia, private agriculture accounted for 80 % of arable land as of 1975 (Mathijs 1997). However, central planning was still introduced into agricultural development of these countries via limitations imposed on the private property rights on agricultural land and on the functioning of input and output markets.

Since individual farms predominated during communist times, after the 1990s the privatization of agricultural land was not as much of an issue as it was in other former socialist countries. The main transition process consisted of restitution of previously nationalized land used by the state farms to the original owners or their legal descendants.

Albania (Land Distribution and Predominantly Individual Farming)

Before WWII, more than 60 % of land in Albania was cultivated by medium- and smallholdings. At the beginning of the communist era in the country, the expropriation was targeted towards large landowners or those owners who used hired labor. Such land was confiscated and transferred to landless Albanians or farmers who owned less than 5 ha of land. The expropriation stage of the reform was followed by a collectivization process. By the early 1960s, most of the family farms were part of either collective or state farms.

After the collapse of the communist regime in Albania, its government followed the path of the Western CIS countries with regard to land reform. Within a year and a half, all the land that belonged to the state and collective farms

was distributed among former workers of such farms, who in turn started family farms. As a result, 700,000 ha of arable land was distributed among 500,000 families, with an average plot size of about 1.5 ha per family.

Future Trends and Unsolved Problems

Currently, agriculture constitutes a much smaller share in the economies of the Eastern European region than it did during Soviet times. During the past 20 years, the agricultural index in the region that is calculated as a simple average of the share of rural population (percentage of total population), share of agricultural employment (percentage of total employment), and agricultural value added in GDP (percentage of total GDP) has decreased on average by 33 %. This is a natural path of transition for dynamic economies, but in this region it was accelerated by the removal of high levels of agricultural support after the collapse of the USSR. Nevertheless, agricultural issues are still at the center of policy debate across these countries.

The future trends in the agricultural development of the region could be centered around the stage of accession of the post-Soviet countries to the European Union. Here one can differentiate among those countries that are already members of the EU (new members states), those countries that are recognized as official candidates to the EU (Republic of Macedonia, Montenegro, and Serbia) or potential candidate countries (Albania, Bosnia and Herzegovina, and Republic of Kosovo), and those countries that are currently not on the enlargement agenda of the EU (Western CIS countries).

With regard to the agricultural reforms, the accession process to the EU is important for two reasons. First, in order to complete the official accession process, these countries have to implement laws and regulations in the *acquis communautaire*, which involves the adoption of the common policies and regulations of the Union, which, *inter alia*, improve functioning of the land markets. In this respect, new member states of the EU are in better shape than the

countries in Western Balkans or Western CIS countries, since they have shown the most progress in the region with creating an efficient system of private property on land and land transferability. Second, accession to the EU significantly increased support for agricultural and rural development and also put pressure on farms and the whole marketing chain to be more competitive in agricultural markets. This assistance and market competition has improved the efficiency of agricultural markets.

Evidence (Table 2) shows that the NMS countries have the lowest level of land market restrictions, while Western CIS countries are still the most restricted ones in this regard. More specifically, according to the World Bank's land reform index of 2005, Western Balkan countries (except for Bosnia and Herzegovina) score on average at 7.2 out of 10. For the Western CIS countries, the average is equal to 4.9. These numbers refer not only to the state of land reform but also to policy environment, privatization processes, rural financial systems, and institutional framework (Mizik 2009).

Summary

This entry deals with the issues, choices, and strategies associated with the implementation of land reforms and transformation of collectivized and state-owned farms in the post-Soviet countries of Eastern Europe. The wide variety of paths that countries have taken in transition from state ownership and central planning to private ownership and market-driven processes do not reveal that one path is far better than another, but it generally shows that those countries that delayed and overly restricted adjustment processes are lagging behind those that made the transition earlier and faster.

Cross-References

- [Access to Land and the Right to Food](#)
- [Agricultural Ethics](#)
- [Economy of Agriculture and Food](#)
- [Farms: Small Versus Large](#)
- [Land Acquisitions for Food and Fuel](#)

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Introduction

Ample evidence exists on the negative influence on health of eating a diet high in energy, saturated fat, and salt and the onset of diabetes, cardiovascular, and malignant diseases (for an overview, see WHO 2004). The rising problem of obesity fuels the efforts of health promoters, policy makers, the food industry, and other experts concerned with nutrition communication to promote convenient healthful eating. Despite these efforts, promoting healthful eating remains a challenge (see ► [Obesity and Consumer Choice](#)).

At present, two contradictory trends emerge in nutrition promotion. On the one hand, decades of efforts have created awareness and understanding of eating for health, to eat a variety of food, more fruits, vegetables, and fish and avoid too much fatty and sugary food, calories, and salt, and have also created the intention to do so in practice. At the environmental level, great efforts have been put into “making the healthy choice the easy choice.” On the other hand, studies show that, in the Netherlands as well as in other countries, most consumers eat less fruit and vegetables and more products high in energy, saturated fat, and sugar than recommended. This latter type of dietary intake is indicated as one of the main causes of the increasing prevalence of obesity and consequent rise in adult onset of diabetes, nowadays a major public health concern in the Netherlands, as well as globally.

Apparently, knowing what to eat for health is not put into practice by many people. New strategies, therefore, have to be considered to ensure that consumers direct their eating practices toward health.

This entry discusses firstly the current biomedical-oriented strategy of specifying nutritional recommendations on why, how, and what to eat to remain in good health (2). Then, the mismatches between this approach and the way people themselves deal with food and health in their everyday lives are presented (3) and discussed in relation to ethical considerations (4). The next section introduces the salutogenic perspective (5) and the evidence regarding its value for

Eating and Nutrition

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Synonyms

Eating behavior; Everyday life; Health; Nutrition promotion; Salutogenesis

application to the promotion of healthier eating practices (6). The last part of this entry discusses implications and examples of using this perspective for nutrition research and promotion (7) and conclusions (8).

Existing Efforts: Nutritional Specification

Nutritional research is increasingly capable of identifying the relation between specific nutrients and physical health. The insights are translated into guidelines for healthful eating and communicated to consumers through educational and marketing efforts. The rising problem of obesity fuels the efforts of health promoters, policy makers, the food industry, and other experts concerned with nutrition communication to facilitate convenient healthful eating.

The further specification of advice on why, what, and how to eat for physical health is fuelled by three developments. Firstly, behavioral research supports the idea that specific advice is more successful than general advice in motivating healthful eating because individuals view it as more personally relevant (Eyles and Mhurchu 2009). This so-called tailored advice provides individuals with highly specific information on individual health risks and benefits of their current eating habits and the desirable changes (see ► [Food Risk Communication](#)). In addition, rapid developments in interactive computer technology (ICT), especially the Internet, allow for the provision of tailored advice on a larger scale than possible through face-to-face consults (Broekhuizen et al. 2012). A third development is that of nutrigenomics research. This innovative discipline of nutritional research studies the interaction between food, genes, and health at the molecular level. A genetic test for vulnerability to diet-related disease, such as cardiovascular disease, could be added to a personal risk assessment, one that is currently comprised of indicators such as body mass index and blood cholesterol (German et al. 2005).

In addition to individually tailored advice, making healthy choices is facilitated by

a growing variety of convenient, tasty, and healthful foods and meals available to consumers. These may facilitate uncomplicated healthful and pleasurable food choice. And, if needed, consumers can buy functional foods, in the form of health-claim-carrying products or natural foods that offer convenient, instant compensation for potential damage done to health (Bouwman et al. 2009; see ► [Functional Foods](#)).

Nutrition Research and Everyday Eating as a Social Practice

The key idea that drives a lot of nutrition research and promotion is that eating for attaining or maintaining good individual physical health is a central goal in life. This biomedical notion of health drives the search in nutritional studies for a better understanding of the risks and benefits of certain nutrients for physical health. It is related to that of “healthism,” a concept introduced by Crawford (1980) to describe a new form of health consciousness that refers to a preoccupation with personal health as the primary focus for the achievement of health and well-being. Health behavior thereby became the paradigm for good living.

The studies based on this biomedical approach orient toward pathogenesis, the study of disease origins and causes. It starts by considering disease and infirmity and then works retrospectively to determine how individuals can avoid, manage, and/or eliminate that disease or infirmity. This risk-oriented, pathogenic view underlies the search in nutritional research and promotion for nutrients, foods, and meals that prevent, treat, or manage diet-related diseases.

A parallel can be drawn between nutritional research and behavioral food research, the research areas that provide the scientific basis for nutrition promotion strategies. Both areas study how interactions between humans and their social and cultural context impact physical health. The areas also share the difficulties involved in exploring contextual variables that often cannot be controlled in research studies (Fischer 2006). If humans are studied without

considering contextual influences, the validity of the research results for everyday life situations is limited. This applies to nutritional research, where issues about contextual influences are threefold: (1) limitations of studying single nutrients while people consume food products, (2) studying specific food products while people consume diets composed of many foods, and (3) studying diets without considering other life-style components. This perspective causes a gap between healthy eating guidelines (e.g., eat polyunsaturated fats and avoid sugar) and concrete action rules for real-life eating practices.

The review of the literature on health behavior change and health communication on this aspect of Bouwman and van Woerkum (2012) indicates mismatches between the focus on physical health in nutrition promotion and consumers' own view.

Firstly, that healthful eating is not solely a matter of conscious personal choices for the benefit of maintaining or attaining physical health. Studies show that eating involves other functions such as taste, convenience, costs, moral concerns, and the maintenance of relationships (Sobal et al. 2006) that often take precedence over biomedical health. Scrinis (2008) argues that the narrow focus on physical health, so-called nutritionism, may have limited value in everyday life (see ► [Medicalization of Eating and Feeding](#)). The scant attention paid to the social and cultural circumstances in which attitudes or intentions are formed in the dominant, cognitive perspective on health behavior more generally is widely addressed in literature (Fischer 2006; Green 2006).

The second issue concerns the absence of the social dimension of eating in nutritional guidelines. Decisions and actions regarding food habits are embedded in a range of other social activities. Following nutritional guidelines in daily life is therefore not a matter of course (cf. van Woerkum and Bouwman 2012). Yet, nutritional guidelines are oriented toward the physical side of health and the concurrent denial of the social embeddedness of food and health behavior and thus seem to ignore that aspect. Food is often shared with others and provides opportunities for making social contacts. Within these social

interactions, it may function as a marker of culture and as an expression of affection, attachment, or identity (see ► [You are What You Eat](#)). Apart from being a social activity in itself, eating behavior is also influenced by the broader social context. This social environment has been proven influential in stimulating or inhibiting consumers' capacity to eat more healthfully. A recent review of qualitative studies confirms that healthy eating reflects people's personal, social, and cultural experiences, as well as their environment (Bisogni et al. 2012).

A third issue concerns the increasing specificity, and thereby the complexity, of what to eat and what not to eat for the benefit of health. Healthful eating requires a well-organized life, but many consumers are unable to achieve this. Dealing with complexity seems to become more important than eating in accord with nutritional guidelines itself. This complexity is only partly taken care of by health promoters, policy makers, the food industry, and other experts in nutrition communication who facilitate convenient, healthful eating. For instance, a growing variety of convenient, tasty, and healthful foods and meals are available to consumers. These may facilitate uncomplicated healthful and pleasurable food choice. And, if needed, consumers can buy functional foods, in the form of health-claim-carrying products or natural foods that offer convenient, instant compensation for potential damage done to health. It may however lead to the idea that critical thinking by individuals on how to organize healthful eating in everyday life can be handed over to experts. As a consequence, consumers themselves may deal with healthful eating as uncomplicated and unproblematic, as not requiring thoughtful consideration, because someone else is already taking care of it (Bouwman et al. 2009).

Ethical Considerations

Besides questions regarding the everyday relevance and applicability of biomedical-informed nutrition promotion strategies, ethical issues arise as well. A first question is whether the

biomedical, pathogenic route toward specification sufficiently addresses autonomy and, hence, will indeed enable healthier eating practices. The second question relates to the increasing specificity and whether this route will exclude those who are in most need for support.

The first issue concerns the tension between the expert-driven nature of the current approach toward food and health and autonomy, the capacity to self-govern and self-control, and being able to act in an independent manner in relation to eating. Health promotion and, hence, nutrition promotion aim for the human rights value of enabling people to lead an autonomous, active, and productive life, a “good life” or quality of life (WHO 1986). Yet, the expert-driven nature of the current food arena reduces the need for self-governance and self-control and hence autonomy in relation to food choice. It can be questioned who is in the drivers’ seat in the food-health arena, where complex nutritional information is simplified by experts and presented in claims, logos, and guidelines on health and sustainability. “You are what you are told to eat” seems to replace “You are what you eat,” signaling distance between people and the way food is produced and “served” in television programs and advertisements and on the food itself.

The availability of specified nutrition advice may also induce societal attribution of extended individual responsibility for one’s health (Korthals 2011). It is however questionable whether the singular focus on attaining biomedical health (Nutritionism) enables increased accountability (Nordström et al. 2013). Enabling the “good life” requires an integration of social and spiritual life ambitions and actions, especially in relation to food. Without consideration of these values, the biomedical route may compromise rather than support autonomy and healthier eating practices (see ► [Medicalization of Eating and Feeding](#)).

The second ethical issue concerns that provision of tailored advice on why, what, and how to eat for health presupposes a self-conscious consumer, willing and capable of finding, understanding, and applying the information.

It requires a certain level of “nutritional intelligence.” People who do not accomplish this level may ignore, discard, or misinterpret the information. Similar to other health-related issues, unhealthy eating and its consequences are more prevalent among groups with low socioeconomic status. Nutrition education has shown to be relatively ineffective among lower-income groups (Robertson et al. 2007). Further specification and hence complicating information may therefore not reduce yet increase societal inequalities.

The Salutogenic Perspective on Health

The above sketched issues which result from the dominant role of the biomedical route in nutrition promotion can be addressed by adding a complementary, context-sensitive route. Salutogenesis – a theoretical perspective on health – offers an excellent starting point. Antonovsky’s salutogenic approach is centralized around the question “what creates health?” It targets the search for ways to create, enhance, and improve physical, mental, and social well-being. A key difference with the biomedical perspective is that it assumes health-related practices – such as eating for physical health – as a resource for living rather than a central goal of life (Antonovsky 1987). Healthful eating, together with other biological, material, and psychosocial resources, makes it easier for people to perceive their lives as consistent, structured, and understandable. These resources foster repeated life experiences which help to view the world as “making sense,” cognitively, instrumentally, and emotionally. Antonovsky uses here the metaphor of “stimuli bombarding one from the inner and outer environments are perceived as information rather than noise.”

Out of this way of thinking emerged the sense of coherence (SOC) construct. This orientation perceives the world, on a continuum, as comprehensible, manageable, and meaningful. The strength of one’s SOC is a crucial factor in facilitating the movement toward health. Confronted with a stressor, a person with a strong SOC will

be motivated to cope (meaningfulness), believe that the challenge is understood (comprehensibility), and believe that resources to cope are available (manageability). Comprehensibility represents the cognitive component, manageability the instrumental or behavioral component, and meaningfulness the motivational component (Lindstrom and Eriksson 2006).

Life experiences that lead to a strong SOC allow one to reach out in any given situation and apply the resources appropriate to that stressor. Three kinds of life experiences shape the strength of one's SOC: consistency, underload-overload balance, and participation in socially valued decision making. The extent of such experiences is formed by one's position in the social structure and by one's culture – e.g., work and family life.

Salutogenesis and Healthy Eating

Antonovsky developed a scale to measure the strength of the SOC, called the Orientation to Life Questionnaire, which included the SOC-29 and a shorter form, the SOC-13 – comprising of 13 questions on meaningfulness, comprehensibility, and manageability. Since these SOC scales were originally devised by Antonovsky in the 1980s, they have been translated into at least 33 languages in 32 countries with at least 15 different modified versions of the questionnaire available. These scales measure the strength of the three traits which comprise the SOC: meaningfulness, comprehensibility, and manageability. These SOC scales have been found to be highly reliable, valid, and cross-culturally applicable instruments to gauge how people cope with stressful situations and as a result stay healthy (Eriksson and Lindström 2005).

In an extensive systematic review, Eriksson and Lindström (2006) found that a high SOC score was strongly associated with a better perceived physical and mental health and it has a main, moderating, and mediating role in the explanation of positive health. Several studies have also proposed that a strong SOC is

associated with healthier eating patterns and lifestyle choices than those with a weaker SOC. Lindmark et al. (2005) found in a cross-sectional study of Swedish adults that both men and women with a high SOC score reported higher intake of healthier food choices such as vegetables and whole grains. They further found that those with lower SOC scores reported higher intakes of unhealthier food choices such as pizza, French fries, and hamburgers. Moreover, research from a population-based cohort study in the United Kingdom found that men and women with a strong SOC were less likely to smoke cigarettes; less likely to be physically inactive; reported higher intake of fruits, vegetables, and fiber; and had a 20 % reduced risk of all-cause mortality than those with a lower SOC, independent of social class and education level (Wainwright et al. 2007). Ray et al. (2009) further found that a strong parental SOC was associated with their children having more regular child eating patterns, lower intake of energy-dense foods, and higher intake of nutrient-rich foods. Their evidence further suggested that parent's SOC and children's intake of nutrient-rich foods were mediated by factors from the social and physical context such as providing access to fruits and vegetables at home, having better awareness of recommendations on healthy eating, acting as a role model for their child by eating fruits and vegetables, and eating regular meals together as a family.

Salutogenic research goes beyond only measuring SOC and its association with health and lifestyle behaviors. As Lindström and Eriksson described, salutogenesis is “much more than only the measurement of the Sense of Coherence, it is a much broader concept focusing on resources, competencies, abilities; assessed on different levels, the individual, the group, families and also societies, of which the concept of resilience is one of these assets to health that falls under the salutogenic umbrella” (Lindström and Eriksson 2010). Resilience can be described as a positive capacity to cope with stress and adversity. Qualities of resilience such as flexibility, resourcefulness, and coping with adversities are very similar

to GRRs which create the prerequisites for developing a strong SOC as described by Antonovsky. Further, resilience is just like salutogenesis in that it is not a trait, but rather a dynamic process that illustrates how the availability and use of resources can be used to promote well-being (salutogenic) or protect people from adversities (resilience) to set people on the continuum of positive health.

In the past, the concept of resilience had been mostly applied within only child development, mental health, and psychology; however in recent years the concept has been applied to a variety of topics. Australian researchers have begun to apply the concept to study the phenomenon of “obesity resilience” among populations with high levels of health disparities. This research has suggested that characteristics such as perceived social support from family and friends for healthy eating and physical activity, perceived self-control for healthy eating, self-efficacy for regulating eating and physical activity, social participation, and neighborhood access to healthy foods all explained variations in BMI in women living in disadvantaged neighborhoods (Ball et al. 2012). Moreover, Williams et al. (2011) identified personal, social, and environmental factors that promote healthy eating and healthy weight among families from economically disadvantaged neighborhoods in Australia. These included parental control, moderation and support for healthy eating, parental role modeling, and limiting access to unhealthy foods. American researchers have also recently begun to examine the obesity resilience phenomenon. Lim et al. (2011) found that among families from deprived neighborhoods in urban Detroit, a higher parental capacity for resilience was associated with healthy weight maintenance and lower soft drink consumption in their 3–5-year-old children over a 4-year follow-up period.

In sum, the salutogenic research paradigm strives to ultimately answer the question “what creates health” rather than “what causes disease” and, hereby, complements the biomedical route in multiple ways. The salutogenic view toward health complements the biomedical route by

adding the everyday life dimension where people strive not only to avoid disease yet also for quality – “goodness” – in life. People need to be aware of not only risks that keep them from achieving good health but also how they can use resources within and outside themselves to guide them successfully toward positive health. It includes all aspects of health, being in line with the way people themselves experience health: as resulting from an interplay between bodily, mental, social, and spiritual well-being. It is embedded in the social context; it studies the dynamics between people and environment and how health develops from this interaction – or not. It aims to identify the patterns and mechanisms underlying health processes, rather than factors bound to people, as is characteristic to biomedical-oriented research. Disjointedly studying and enacting upon people and context may be easier but does not do justice to reality. Society can be rich in resources; the outcome depends on how people make sense, interpret, and give meaning to these resources in relation to health.

Implications for Research and Practice

In summary, the evidence emerging from salutogenic research suggests that a higher SOC score is associated with better perceived physical and mental health and it has a main, moderating, and mediating role in positive health outcomes. Findings from the salutogenic literature suggest that those with a higher SOC make healthier food choices, eat less energy-dense foods, have healthier physical activity patterns, and tend not to be smokers. Such research has been important to gain initial insight into the resources that promote healthful eating and resilience to obesity at the individual, family, and community levels. However, we have only just begun to scratch the surface. In-depth qualitative research has yet to be applied to study the mechanisms and patterns behind the phenomenon of eating well. In future research, it will be important to examine how healthy eaters adapt and utilize resources in health-promoting ways despite such

overwhelming influences of the “obesogenic” environment. For instance, what types of life experiences with healthy eating and lifestyle have shaped the development of a high SOC and resilience to obesity?

The use of the salutogenic perspective has several implications for research. The target groups are those who do manage to sustain in their intentions to eat healthfully and find out why they are doing well. The questions should centralize around the life experiences that have led to their strong SOC, their ability to cope with a “challenging” environment in relation to eating for health. With respect to eating, one can think of how they deal with the abundance of food, “seductive” marketing efforts, pricing strategies, as well as negative social norms – e.g., the health freak image mentioned above. What are the knowledge, tools, or skills, on a biomedical (as provided by existing nutrition advice), practical, as well as social level, required to effectively deal with these challenges in everyday life?

Secondly, research should not be limited to topics directly related to the food chain process of buying, preparing, and consuming food. Peoples’ other, interlinked ambitions and actions should be considered as well. The aim is to identify how eating for health is linked with other resources that contribute to health and well-being, for instance, experiencing nature, playing, or child rearing. In line with this, care farms, natural playgrounds, or city gardens may serve as excellent settings for promoting eating for health.

A third aspect is the question how the complexity that characterizes advice on why, how, and what to eat relates to the element of comprehensibility, the understanding of one’s environment. We propose that nutrition promotion, besides considering the impact of (un)healthful food choice on personal health, also includes other levels (from local to global) and domains linked with food (e.g., animal welfare and natural resource management).

The complex nature of eating advice may also hinder the opportunity for positive life experiences required to establish a strong SOC.

As mentioned above, these life experiences should be characterized by consistency, an underload-overload balance and participation in socially valued decision making. The fast changing insights on food-health relations may not provide for consistency. And the enormous attention paid to food-health may lead to an overload of information. The importance of the aspect of “participation” is widely recognized in health promotion and central to human rights. Yet, current nutrition promotion efforts insufficiently allow for active involvement of people themselves (Bouwman 2009). We therefore wish to emphasize the need for a change from expert-driven nutrition promotion toward a coevolutionary development process. In this process, people themselves are actively involved, issues and solutions can be exchanged between consumers and experts, and new ways to establish eating for health may be devised.

Summary

The biomedical specification route provides valuable insights on risk factors and strategies to avoid disease. Yet, its complex nature and distance to the everyday context of eating practices may limit the impact of nutrition promotion efforts and compromise the values of autonomy and health equity. Complementing this route with the salutogenic approach will be relevant for public health practice in developing interventions that enhance and develop personal, social, and environmental resources which foster healthy eating practices. Through coordinated action with relevant societal actors, findings could also be used to propose and develop “salutogenic” public health interventions which fit within current frameworks and policies. Furthermore, the research findings can help develop new tools for practitioners to assist people that are struggling with their weight in designing a “personalized health trajectory” that enables and empowers them to utilize personal, social, and physical resources for health. Most importantly, such action-oriented approaches form part of the

solution and help people in accomplishing lifestyle changes in the context of their everyday lives (van Woerkum and Bouwman 2012).

It can be expected that salutogenic research findings will be highly valuable not only for practitioners but also for policy makers and industry. The knowledge gained from salutogenic research can be used to design more holistic, context-sensitive, and solution-oriented obesity and lifestyle-related policies, as well as develop socially driven technologies and devices which emphasize enabling and facilitating resources within people's social and physical contexts as a means to promote health and prevent obesity. Health promotion has a long tradition of arranging enabling contexts to mobilize human and material resources to promote and protect health.

This does not require a complete paradigm shift to using only salutogenic methods, rather that there should be more of a balance between pathogenic and salutogenic methods in obesity research. Introducing more salutogenic approaches to obesity research can complement the existing knowledge by identifying the "determinants of success" in those coping well with the obesogenic environment and comparing these to the established "determinants of failure" in people who struggle with overweight and obesity due to unhealthful dietary and lifestyle practices. By widening the research perspective to encompass both approaches, one can better understand how the complex interplay between physical, mental, social, and contextual factors can support the maintenance of a healthy weight and promote well-being. This understanding can ultimately aid science and practice in creating supportive and enabling social and physical contexts which promote healthy eating, lifestyle practices, obesity prevention, and overall health.

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Eating Disorders

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Synonyms

Anorexia nervosa; Bulimia nervosa; Coercive measures in psychiatry; Competence to give informed consent (medicine); Decisional capacity; Deliberative ethics; DSM-5; Eating disturbances; Feeding disorders; MacCAT; Treatment in psychiatry

Introduction

Feeding and eating disorders were already described in ancient Greek times. However, it was only since the nineteenth century that they were labeled as medical condition. Diagnoses like *anorexia hysterica* and *anorexia nervosa* were used, referring to a psychiatric background. Nowadays, the two most commonly diagnosed eating disorders are anorexia nervosa and bulimia nervosa. Anorexia nervosa is less often diagnosed than bulimia nervosa but more known because of its acute risk of physical complications including death.

Next to anorexia nervosa and bulimia nervosa, the DSM-5 (APA 2013) classifies pica (persistent eating of nonnutritive, nonfood substances such as soil), rumination disorder (regurgitation of food, with rechewing, re-swallowing, or spitting out of the regurgitated substance), avoidant/restrictive food intake disorder (an eating or feeding disturbance as manifested by significant weight loss, nutritional deficiency, and so on), binge eating disorder, other specified feeding or eating disorders (including purging disorder and night eating syndrome), and unspecified feeding or eating disorder.

There is some debate whether (► [Obesity](#) (Also: [Childhood Obesity and Responsibilities](#)))

obesity (► [Obesity and Consumer Choice](#)) is an eating disorder in the psychiatric spectrum as well. It is not a disorder in the DSM-5 or ICD-10, but it is recognized as a condition with major psychological and even psychiatric aspects. Other conditions that are related to eating and food but do not meet criteria for eating disorders as listed in DSM-5 or ICD-10 are, for example, dependence of laxatives and emetophobia (phobia for vomiting).

Outline

This entry will focus on anorexia nervosa, since ethical issues are most dominant in this disorder. Anorexia nervosa patients typically refuse treatment (► [Ethics of Dietitians](#)). If physicians want to enforce treatment, they need to establish that the patient is incompetent. First, the characteristics of anorexia nervosa, including the way in which it influences the body image, and the state of the art in treatment are addressed. Next, the standard approach to incompetence is discussed, which focuses on cognitive abilities. Then, a critique on that approach is examined, in which the role of emotions is emphasized. After that, recent empirical ethical research is discussed, highlighting the importance of values in incompetence of anorexia patients. Finally, several ways of dealing with values in the context of the doctor-patient relationship are presented.

Anorexia Nervosa and the Image of the Body

The main characteristics of anorexia nervosa are the refusal to maintain body weight, intense fear of gaining weight (even though being underweight), and amenorrhea. Binge eating is often considered as a subtype of anorexia nervosa. Bulimia nervosa is characterized by excessive eating in discrete periods of time combined with a sense of lack of control and recurrent inappropriate compensatory behavior to prevent weight gain.

Anorexia nervosa is associated with personality traits and disorders, and the *anorexic*

personality is described in literature (Tan 2006). This suggests a firm role of identity in the experiences of patients and perspectives on anorexia nervosa.

Anorexia nervosa is characterized by a disturbance in body, shape, or weight experience. Patients judge themselves to be fat and heavy, whereas in reality they are slim and have underweight. There are several hypotheses and models on the nature of anorexia nervosa. Neurobiological researchers emphasize the importance of feeling skinny (Kaye et al. 2013). Other researchers emphasize the role of body image disturbance, including low body esteem, associated attachment insecurity, and alexithymia in the etiology of anorexia nervosa (Keating et al. 2013).

State of the Art in Treatment of Eating Disorders

Eating disorders, and especially anorexia nervosa, are known for their great impact in the lives of both patient and family. Anorexia nervosa can be and often is life threatening. Constant starving can give major physical problems, such as hypothermia, dependent edema, hypotension, bradycardia, and lanugo next to various metabolic changes. Amenorrhea is also a frequent sign. Even when treated successfully, these complications can have lifelong consequences (Sadock 2007).

Patients, often (► [Feeding Children](#)) girls and young women (► [Gender Norms and Food Behaviors](#)), usually come to medical attention when the weight loss becomes apparent. Then, the first consideration of most physicians and psychiatrists is to restore the patients' nutritional state. Psychological and psychiatric treatment, including individual psychotherapy, family education and therapy, and sometimes psychotropic medication come after that (Sadock 2007).

However, most patients are not interested (► [Medicalization of Eating and Feeding](#)) in psychiatric treatment. A major textbook in the field of psychiatry suggests that compulsory treatment should be obtained only when the risk of death from the complications of malnutrition is likely. Guidelines and professional organizations also

follow this line. When coercion is used, it is often to treat the physical complications. Patients are then rehydrated and forced to gain some weight. But this only fights the complications of anorexia nervosa and not the psychiatric origin of the condition.

Competence: The Standard Approach

Coercion is not often used in the treatment of anorexia nervosa and seldom for the psychiatric part of the treatment. Most women with anorexia nervosa are considered to be competent to refuse psychiatric treatment. Formally, competence means that a patient meets the legal requirements for providing informed consent. Most definitions of competence refer to decisional capacity or decision-making capacity, which is often understood as a cognitive or neuropsychological function (Eating and Thinking). The MacCAT (Grisso and Appelbaum 1998), a major competence assessment tool, also has a cognitive focus. The MacCAT was developed in the last century by Appelbaum and Grisso based on four criteria: understanding, appreciation, reasoning, and expressing a choice (Grisso and Appelbaum 1998). Most international authors and researchers in the field of competence mention these criteria, some in slightly different terms or with proposals for amendments. The MacCAT is a translation of the four criteria in specific questions for patients (Grisso and Appelbaum 1998). The feasibility, reliability, and validity were described in their 1997 paper (Appelbaum et al. 1997). The conclusion is that in cases where competence is doubted, the MacCAT can help. A cutoff score is not defined. The MacCAT should always be combined with clinical judgment.

Research shows that MacCAT outcomes do not always overlap with clinical judgment alone. Patients with dementia are more often assessed as incompetent with the MacCAT than with clinical judgment alone (Vollmann et al. 2003). For patients with anorexia nervosa, it is the other way around: the MacCAT gives higher scores on their competence than clinicians do (Tan et al. 2003).

Experiences of Patients with Coercion

Tan et al. explored patients' experiences with coercion (Tan et al. 2010). They interviewed young women with anorexia nervosa about their opinions regarding forced treatment. Other research had already shown that women, when treated, can agree that coercion was needed. Tan et al. add three important new insights. First, none of the interviewees disapproved of the use of coercion in life-threatening situations, for both themselves and others. Second, the use of formal coercive measures was not regarded as essentially different from informal urging or pressure. In contrast, the way in which treatment (either coercion or pressure) was provided appeared crucial. In case of a good relationship with the health-care professionals and parents and an experience of support and respect, coercion was not labeled as negative but as good care. Third, the women did not think that competence was an important subject. Again, not incompetence was a central criterion for them but their relationship with professionals and parents.

Most research and media attention on the subject of coercive measures in psychiatry is critical. Although coercion is not always perceived by patients as negative, and sometimes regarded as necessary, the way in which coercion is applied is often seen as problematic. Coercion is at odds with an attitude of consideration and mutual trust. These values, which are important in psychiatric care, are emphasized in virtue ethics. From this perspective, virtues like compassion and empathy are essential in good care. They also fit in the tradition of care ethics, in which good care is defined as engagement and involvement and in which relations are regarded as crucial, because people are dependent upon others to shape their lives.

Appreciation

The criteria of the MacCAT are not easy to define. The most difficult is appreciation. Appelbaum and Grisso (Appelbaum et al. 1997) distinguish between appreciation of disorder

(the patient acknowledges that he or she manifests the disclosed disorder and all or most of the disclosed symptoms or does not agree but offers reasons that are not delusions and have some reasonable explanation) and appreciation of treatment (the patient acknowledges at least some potential for the treatment and some benefit, and the reason for refusal is not based on delusions or serious distortion of reality, or the patient does not believe that the treatment has the potential to produce some benefit, but offers reasons that are not delusional and have some reasonable explanation). Both elements have to be present. This notion of appreciation is still highly debated.

Some argue that appreciation should be replaced by acceptance of the need for care, because the latter term is more apt in capturing that aspect of insight by which a person with psychotic and manic disorders may be rendered incapable of giving informed consent (Staden 2003).

A systematic review of the literature on the subject (Ruissen et al. 2012) found a strong correlation between competence and insight, with overlap in psychotic disorders. Psychotic patients with poor insight are very likely to be incompetent, and psychotic patients with adequate insight are generally competent. In nonpsychotic disorders, however, another relationship emerges. Competence and insight do not completely overlap in these patients. Most incompetent patients in this group have poor insight, but nonpsychotic patients with adequate insight were incompetent in a substantial number of cases, including anorexia nervosa. In sum, anorexia nervosa patients with adequate insight can be incompetent.

An Alternative to the Standard Approach: Emotions

Critics of the approach of Appelbaum and Grisso question the central role of cognitive capacities. Charland underlines the role of emotions (Charland 1998, 2006). In important decisions in life, such as marriage, career, and parenthood,

emotions play an important role. The same goes for decisions in health care. Emotions are related to personal identity and embody practical rationality; these issues should get more attention in competence assessment (Berghmans and Widdershoven 2003).

A Value Approach

As an alternative to a cognitive and an emotional approach, a third approach can be found in the literature: the values approach (Tan et al. 2003, 2006). The authors interviewed women with anorexia nervosa and their mothers about competence to make treatment decisions. The women proved to be able to discuss their reasons and choices for dieting. They knew the main aspects and details about treatment and acknowledged the consequences of their behavior, even recognizing the possibility of severe physical complications and death.

The authors furthermore showed that for patients the value of “being thin” was most important in their lives, more important than friends, school, hobbies, and family. Some patients felt that anorexia was part of their identity. This suggests a fundamental shift in values due to the disease. The authors introduced the notion of “pathological values”: non-authentic values, changed or induced by a psychiatric disorder with an addictive character (Tan et al. 2003, 2006, 2010).

The authors conclude that these patients are not compromised in their cognitive abilities, but they do have a distorted value pattern. When using standard cognitive criteria, the women can be considered competent to refuse treatment. They acknowledge their symptoms, disorder, and the benefits of treatment. Yet, they refuse treatment anyway. The authors conclude that cognitive criteria are not enough for this group of psychiatric patients, as the competence of these patients is not compromised because of cognitive problems but because of a shift in values (Tan et al. 2006). Other authors follow this line (Charland 2006; Vollmann et al. 2003).

Dealing with Values in the Physician-Patient Relationship

When values are seen as an important aspect of competence and certain values are regarded as being influenced by the disease and therefore not authentic, the question can be raised whether these values should be simply discarded or can be addressed in another way. Should patient values in such cases be regarded as irrelevant, or might it be possible to deal with problematic values in a different way? Here, the work of Emmanuel en Emmanuel (Emmanuel and Emanuel 1992) on models of the physician-patient relationship can be helpful. Next to following patient values in the standard informed consent approach (the informative model), or leaving them aside and act in the best interest of the patient (the paternalist model), physicians can deal with patient values by helping patients to clarify their values (the interpretive model) or challenging them to reconsider their values (the deliberative model).

The interpretive model assumes that patients' values are important, but not always clear. The physician should clarify ambivalences and support patients to find out which values are most important for them. When a refusal is based on short-term values (e.g., avoiding a feeling of control loss), while long-term values (e.g., health) are not met, a doctor can help to appreciate these values together with the patient. This model will, however, not be very useful in patients with eating disorders. Patients with eating disorders often do not need a doctor to clarify their values. The anorexia patient who refuses treatment and states that being thin is the most important value in her life has evidently made up her mind already.

In the deliberative model, the physician not only supports the patient in expressing and interpreting his or her values but also stimulates the patient to critically consider these values. The model implies that values are not static but dynamic and can change over time and influenced by changing circumstances. It does intend not only to make explicit the values at stake but also to develop them. This implies that

the patient with anorexia nervosa is challenged to reconsider the value of being thin and to come and see that other values are also important in life. A physician who, in line with the deliberative model, challenges the patient's values should be aware of his own values and take care not to impose them on the patient. He should also be aware that trying to change the patient's views may involve moral dilemmas. Is pressure justified, or should the physician refrain from such means? Moral case deliberation can help professionals to reflect on dilemmas (Weidema et al. 2013). By investigating one's own values, understanding the perspectives of others, and exchanging views in dialogue, participants in moral case deliberation can learn how to deal with moral dilemmas and further develop moral competence. Deliberation between professionals can thus create conditions for applying the deliberative model of the physician-patient relationship in a responsible way.

Regardless which perspective on competence one endorses, it is important to try and strengthen the patient's competence as far as possible. When this is not possible, coercion can be necessary to reinforce autonomy in the long run (Tan et al. 2010), as a last resort. It may not always be possible to prevent switching to the paternalistic model. The moral justification of coercion, however, will be stronger if attempts have been made to address the patient in line with the deliberative model and foster reflection on values and moral learning.

Summary

This entry deals with ethical issues in dealing with eating disorders, especially anorexia nervosa as the most well-known example. If physicians want to enforce treatment, they need to establish that the patient is incompetent. First the characteristics of anorexia nervosa are presented, including changes in body experience and image, and its treatment. After that, the standard approach to incompetence is explained, which focuses on cognitive abilities; we specifically

pay attention to the aspect of appreciation. Next, a critique on that approach is examined, in which the role of emotions is emphasized. Then, recent empirical ethical research is discussed, highlighting the importance of values in incompetence of anorexia patients. Finally, several ways of dealing with values in the context of the doctor-patient relationship are highlighted, including the contribution of moral case deliberation

Cross-References

- [Ethics of Dietitians](#)
- [Feeding Children](#)
- [Gender Norms and Food Behavior](#)
- [Medicalization of Eating and Feeding](#)
- [Obesity and Consumer Choice](#)

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Eating Disorders and Disturbed Eating

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Synonyms

Alimentary disturbances; Anorexia nervosa (AN); Binge-eating disorder (BED); Bulimia nervosa (BN); Compulsive eating; Eating disorders not otherwise specified (EDNOS); Purging

Introduction

Eating disorders are broadly defined as pathological or disturbed practices associated with food intake, weight management, and body image that

can cause significant psychological and physical harm. The American Psychiatric Association identifies four central categories of eating disorders – anorexia nervosa (AN), bulimia nervosa (BN), binge-eating disorder (BED), and eating disorders not otherwise specified (EDNOS) – while acknowledging symptom overlap across these categories (APA 2000). It is estimated that several million individuals (approximately 90 % female and 10 % male when eating disorders are considered as a whole) are suffering from one of these disorders at any given time across the world (with the preponderance of cases occurring in the West). These disorders have proven particularly difficult to treat given the complex interrelations among individual, family, and social contributing factors.

The major ethical dilemmas concerning eating disorders arise out of disputes as to the ontological (i.e., how to understand) and practical (i.e., how to treat) character of these illnesses. Considerable disagreement exists among treatment providers, caretakers, and scholars as to the origins and nature of eating disorders, as well as to the best treatment practices. As for the ontological character, there is disagreement as to the identification of these eating practices as pathological or disordered; whether the concept of addiction is useful or accurate in describing eating disorders; and to the degree of relatedness across the four categories as well as the emphasis placed upon AN at the expense of BN, BED, and EDNOS.

As for the practical character of eating disorders, there is disagreement about the importance of respecting a sufferer's stated desires (e.g., should a refusal of treatment be considered autonomous and/or competent), about the efficacy and value of force-feeding, and about whether and how treatment should incorporate analyses of various social oppressions. These ontological and practical matters are intertwined given that the understanding of eating disorders informs treatment practices and that treatment practices produce (or reproduce) particular understandings of these illnesses. The aim of distinguishing between the ontological-ethical link and the practical-ethical link, then, is to enhance clarity rather than to isolate these matters.

Understanding Eating Disorders

One of the central ethical issues concerning eating disorders is how to understand these illnesses, which have been variously identified as communicative practices, pathological or addictive behaviors, and indicators of broad social problems (Malson and Burns 2009). Judgments about the origins and meanings of eating disorders are ethical in nature because they shape treatment practices and attitudes toward sufferers and affect broader social views on food, weight, and bodies (Bordo 2004; Burns 2004).

Some have argued that eating disorders are communicative in nature – that the practices and harms associated with these illnesses are nonverbal messages in need of transcription (Bordo 2004; Burns 2004; Giordano 2007; Warin 2010). From this perspective, a main task of treatment providers is to understand the complex individual, familial, and social communications at work in eating disordered behavior. Often, though not necessarily, at odds with this view is the characterization of eating disorders as pathological.

The characterization of AN, BN, BED, and EDNOS as pathological behaviors, a characterization seemingly foundational to the very concept of eating disorders, has produced significant disagreement in the literature. The general argument in support of this characterization is that these practices are significantly distinct from average eating and food behaviors, that they produce psychological and physical harms that require medical attention, and that they can lead to death. The argument against this view emphasizes the negative outcomes associated with treatments based upon the pathological characterization. For example, researchers have demonstrated that the characterization of these practices as pathological produces a treatment context within which sufferers are disregarded, inhibiting the alleviation or transformation of their behaviors (Gremillion 2003; Warin 2010).

These disputes extend beyond semantic concerns; each side believes that the pathological characterization is a crucial factor in the establishment of treatment practices. Those in favor of

the characterization tend toward the belief that treatment should renormalize patients' eating practices while those against tend toward the belief that treatment should open up new possibilities for life satisfaction.

There is also disagreement as to whether eating disorders are addictions. Some theorists have drawn comparisons between substance abuse and eating disorders, suggesting that 12-step programs can provide important support for those hoping to recover from their eating disorders. Others have challenged the accuracy and efficacy of identifying eating disorders as addictions, arguing that this label covers over important communicative aspects of disturbed eating practices, therefore inhibiting transformative treatment (Giordano 2003).

Another disagreement pertains to the separation of these disturbances into the four categories discussed above. Even as the American Psychiatric Association, Academy for Eating Disorders, and the National Institute of Mental Health acknowledge significant overlap and movement between the categories of AN, BN, BED, and EDNOS, it is commonplace for these disorders to be discussed in the literature as disparate, if not discrete, illnesses (Stewart 2012). Beyond questions of the accuracy of isolating these interrelated eating practices are the ethical implications that arise when AN, BN, BED, and EDNOS are distinguished in this way. Scholars critical of these distinctions have argued that they produce a hierarchy wherein AN is taken to be the purist and most serious of the eating disorders by both eating disordered individuals and treatment providers (Burns 2004; Malson and Burns 2009).

The tendency to separate and rank eating disorders also arises in treatment responses, e.g., researchers have noted the frequency with which treatment providers prefer and cater to the needs of the non-purging anorexic while characterizing sufferers of BN, BED, and EDNOS as having less self-control and as being more troublesome in treatment (Burns 2004). In addition, theorists who focus upon anorexia have been challenged for confusing that which is particular to AN with eating disorders in general (e.g., for employing the language of "anorexia" and

"eating disorders" interchangeably even when their remarks pertain exclusively to AN) and for misrepresenting the fact that AN is the least common of all the eating disorders (Malson and Burns 2009). Given this, contemporary theorists have argued in favor of deconstructing the conceptualization of, particularly, AN and BN as distinct disorders, preferring an account that attends to their interrelations (Burns 2004; Stewart 2012).

Force-Feeding and Anorexia Nervosa

Critics of the separation and ranking of eating disorders have noted that the emphasis on non-bingeing AN also manifests in the medical ethics literature on these illnesses. For example, the central ethical question taken up by theorists of medical ethics in regard to eating disorders is whether it is morally acceptable or justified to employ a nasogastric tube to feed an anorexic against her wishes (Draper 2000; Giordano 2003; Giordano 2007). However, while the question of whether to force-feed is most relevant for sufferers of AN, it is additionally relevant for cases of BED, BN, and EDNOS given the frequency with which questions about compulsory treatment (other than force-feeding) arise with these patients (Draper 2000).

Compulsory treatment most typically aims at increasing a patient's weight, with measures including increased supervision (e.g., to prevent purging and exercising, to enforce bed rest, to ensure food consumption) or the introduction of a nasogastric feeding device (Tan et al. 2007). In the medical ethics literature, it is generally accepted that compulsory treatment can be justified only in the absence of a competent refusal. According to this standard, a patient's decision to refuse life-saving treatment is arguably competent even when it is at odds with a rational or reasonable decision (Draper 2000; Tan et al. 2007).

In terms of the eating disordered population, several factors complicate the determination of a patient's competency to refuse treatment (Draper 2000). For example, many eating disordered patients are minors whose parents are given

the authority to make treatment decisions for them; eating disorders are considered mental illnesses, thus limiting patients' abilities to successfully argue their competency (at least in certain localities); doctors have been able to successfully argue that extremely low body weights significantly compromise patients' abilities to make competent decisions; and treatment providers have argued successfully in court that the *idée fixe* of eating disorders (i.e., the fear of fat) is at odds with any competent refusal of life-saving treatment (Draper 2000; Giordano 2003).

On the one hand, many proponents of force-feeding and other compulsory treatments argue that both autonomy and competency are utterly at odds with a diagnosis of anorexia. The basic position is that one has been taken over by her eating disorder and is, therefore, neither autonomous nor competent to make decisions regarding her food intake. Proponents of compulsory treatment argue that AN significantly inhibits an individual's ability to link up her refusal to eat and her fear of weight gain with the likelihood of her death, that it inhibits her capacity to be rational about her ability to recover, and that there are pathological values at work in AN that undermine her competency (Tan et al. 2007).

On the other hand, opponents of force-feeding highlight the lack of efficacy of such treatments (e.g., that long-term recovery rates for individuals who are force fed are worse than those who were not) and point out that there is a small, but significant number of cases in which an individual with AN is legally and ethically competent to determine that her quality of life is so poor as to be no longer worth living (Draper 2000). From this position, the force-feeding of an anorexic patient is at odds with generally accepted ethical principles such as autonomy and competency, meaning that even if a patient will die without a nasogastric tube, his or her wishes should be respected.

This argument against force-feeding has been met with a great deal of resistance, particularly because of the fact that AN is not considered to be a terminal or untreatable illness. Proponents of compulsory treatment have argued that it is unacceptable to allow a patient to die from an illness that, though difficult to treat, need not result in

her death (Giordano 2003). Other researchers have criticized the very use of the frame of competency in eating disorder cases, noting that it fails to take into account the significant differences between these illnesses and the typical cases in which this frame is used. This position most frequently entails the argument that the particularities of eating disorders (e.g., the negative effects these illnesses have on thought processes) require treatment providers to consider the best interests of the patient and the welfare of the family when making treatment decisions (Giordano 2003).

Feminist Responses to Eating Disorders

Given that the preponderance of eating disorder patients are female as well as that gendered norms concerning food intake, weight, and appearance are central factors in eating disordered practices, feminist theorists have consistently argued that these illnesses are associated with Western femininity. Since the 1970s, feminist theorists have challenged mainstream responses to eating disorders – i.e., those employed in large-scale treatment centers, hospitals, psychiatric wards, and psychological practices. This scholarship connects social and political analysis with ethical theory expanding the interpretive frame and practical considerations found in the medical ethics literature. Feminist theorists have variously addressed the social norms and institutions that contribute to the development of eating disorders, the manners in which treatment practices reproduce these same norms and institutions, the lack of consideration of what eating disordered patients have to say about their illnesses, the tendency of treatment providers to blame mothers for eating disorders, and the role of the media in the illnesses (Bordo 2004; Malson and Burns 2009).

More generally, it has been noted that this scholarship emphasizes the historical quality of eating disorders – that these are modern illnesses linked up with global development, an increasing technological presence (particularly in relation to media), and changing expectations concerning

women's social roles and femininity (Bordo 2004; Giordano 2007). These considerations expand upon the medical ethics literature in that they incorporate social analyses into the understanding of eating disorders and demonstrate their relationship to gender oppression (LaVaquer-Manty 2001). From this perspective, eating disorders are understood to arise out of a complex interaction of individual psychological and physiological factors with oppressive social norms governing femininity, food, weight, and sexuality. Such considerations produce ethical accounts wherein a significant aim of treatment practices is to open up space to undermine and transform the effects of these negative social norms such that patients can be more free to construct a life beyond their eating disorder.

The cultural approach to eating disorders challenges the tendency of treatment providers to identify individual and family psychopathologies as the causal factors in these illnesses (Malson 1998; Bordo 2004). For example, Susan Bordo, one of the most well-known feminist scholars on eating disorders, argues that these illnesses represent what is wrong with society: they are, as she remarks, the crystallization of a pathological culture (Bordo 2004). In this view, eating disorders are the extreme result of problematic and contradictory norms surrounding gender that affect all Western women's attitudes on food, eating, and body image. Her theoretical approach, which has been both widely adopted and criticized, seeks to disrupt the view that it is the eating disordered patient who is pathological, to demonstrate that cultural dynamics are the primary producers of these disorders, and to demonstrate that eating disorders are an extreme form of otherwise common Western female eating and food practices.

Similarly to Bordo's claim that eating disorders are on a continuum with other contemporary feminine eating practices, researchers have argued that these illnesses communicate something about Western culture and norms of femininity more generally (Malson 1998). According to this view, it is more valuable to analyze and deconstruct the social norms that constitute Western views on femininity and weight rather than to

search for individual pathological explanations for eating disorders. For example, one of the central techniques employed by theorists of the cultural approach entails media analysis, which aims to uncover the pressure Western women feel to be thin, pure, and free of fat and to connect this pressure to the increasing rates of eating disorders.

Proponents of this view suggest that cultural analysis is necessary for an accurate understanding of these illnesses. For example, some scholars have argued that practices common in mainstream treatment facilities reproduce naturalized accounts of fitness, good mothering, and health, covering over the contentious histories of these ideals of well-being and, moreover, re-instilling these ideals into the patient, family, and staff as if they were eternal. The focus on individuals and families fails, according to this view, to interrogate cultural norms shaping women's attitudes and practices surrounding food, weight, bodies, and individuality itself. Alternatively, these theorists argue for treatment practices that uncover and challenge gender oppression, while opening up space for the individual to develop new relations to her body, food, and eating such that she can disrupt the effects of these norms.

Although feminists on average have regarded the cultural approach to eating disorders as an improvement over mainstream treatment responses to these illnesses, there are disagreements as to the value of this approach for helping patients recover. For example, critics of the cultural approach note that while this view helps to identify the role of oppressive norms surrounding bodies, weight, and food intake (especially as they construct Western femininity), it fails to address the actual transformation of eating disordered practices. Among critics of the cultural approach, one set of theorists have argued that there needs to be greater consideration of the embodied or experiential nature of eating disorders in order to improve treatment outcomes (Malson and Burns 2009). These theorists claim that the proponents of the cultural approach fail to disrupt the individual/social divide they identify in mainstream analysis of eating disorders and merely shift from pathologizing individuals to

pathologizing culture. They challenge that there are serious ethical implications for ignoring what sufferers have to say about their conditions (i.e., that eating disorders have something important to say about both the world and the individual). At issue here, then, is the degree to which sufferers' experiences provide necessary information as to how to best treat eating disorders.

Accordingly, critics of the cultural approach have argued that analyses of cultural contributing factors need to be paired with analysis of the bodily components of eating disorders. For example, Burns asks us to consider the value of understanding eating disorders as habitual practices – as bodily activities in the world shaped by (but not determined by) the cultural scripts that serve as the object of analysis for the cultural model (Malson and Burns 2009). Where the cultural approach focuses upon broad social norms and media images, researchers who take up a more embodied and experiential view on eating disorders consider the ways in which individuals create meaning through their eating practices.

In a related view, scholars working in fields such as anthropology, sociology, and philosophy have adopted a feminist phenomenological approach to understanding and treating eating disorders (Warin 2010). Phenomenological description and analysis is said to open up space for considering the highly particular communications that constitute eating disorders within a broader social analysis of the meanings of femininity, weight, and food. The phenomenological approach entails detailed interviews of individuals with eating disorders and fieldwork at treatment centers with an aim of uncovering the hidden messages at work in both eating disordered practices and treatment modalities. These techniques create an opportunity for thinking about eating disordered behavior as a way of being in the world, where the individual's behavior is a unique yet meaningful response to her social possibilities.

Proponents of the phenomenological approach to eating disorders argue that they can help to establish or reestablish a patient's desire for the future by locating the transformative possibilities entailed in eating disordered behavior (i.e., by

hearing what these practices have to say about the patient's world). The ethical quality of the phenomenological approach is found in its techniques that function to disrupt and transform disturbed eating practices without insisting upon a pathological reading of these same practices.

Despite the differences between the cultural and phenomenological approaches, both aim at expanding mainstream responses to eating disorders by incorporating an understanding of the interrelations between these illnesses and norms of Western femininity. However, it has been argued that theorists from both camps fail to interrogate these norms deeply enough (Malson and Burns 2009). As well, it has been argued that feminist theorists (as well as more mainstream treatment providers) unintentionally reproduce problematic norms about weight, bodies, and femininity in their work on eating disorders (Witt 1994). For example, scholars have argued that there are significant misconceptions about eating disorders in terms of who suffers from these illnesses as well as why individuals take up eating disordered practices (Witt 1994; Burns 2004; Saukko 2008; Warin 2010).

Misconceptions About Sufferers

Early scholarship on eating disorders tended to argue that sufferers were almost exclusively white women from well-to-do families who suffered from anorexia (Witt 1994; Gremillion 2003; Bordo 2004; Burns 2004). As research progressed, it became clear that there was much more diversity in the population of eating disordered patients – e.g., sufferers come from a variety of racial, ethnic, and socioeconomic backgrounds, at least 10 % of this population is male, and anorexia is actually the least common eating disorder. The ethical implications of these misconceptions are that they produce treatment practices that are ineffective in managing or transforming eating disordered practices for large numbers of patients (Burns 2004; Malson and Burns 2009).

For example, scholars have argued that racist and classist assumptions produced both

misconceptions about who suffers from eating disorders and harmful treatment contexts for individuals who did not fit within these misconceptions (Witt 1994; Gremillion 2003). Particularly, it has been argued that women of color face significant hurdles in receiving effective treatment given faulty beliefs that communities of color are immune to societal pressures to be thin, lack of research into differences in access to and trust in mental health providers across communities, and prejudices among providers who perceive treatment resistance as fruitful in white patients and disruptive in patients of color (Witt 1994; Gremillion 2003; Bordo 2004). As well, Gremillion has shown that women of color in treatment facilities are frequently silenced, prevented from resisting treatment modalities, and threatened with a variety of punishments if they fail to comply with expectations (Gremillion 2003).

Another misconception about sufferers that has received attention in the ethical literature pertains to the role of thinness in eating disorders. While the majority of research on these illnesses emphasizes the fear of fat (e.g., getting fat, eating fat, feeling fat) and the desire to be thinner, certain scholars have begun to challenge the accuracy and effectiveness of identifying thinness as the core aim or meaning of disturbed eating practices (Burns 2004; Saukko 2008; Warin 2010). The argument is that a focus on the fear of fat and the desire to be thin inhibits a broader (and arguably more accurate) understanding of the eating disorders. For example, empirical data demonstrates that most bulimics are of average weight, the umbrella term of eating disorders includes binge eaters who do not purge, and a sizable portion of individuals with eating disorders shift back and forth among the four categories of AN, BN, BED, and EDNOS (Burns 2004; Malson and Burns 2009; Stewart 2012).

Critics of this view argue that it fails to interrogate the fear of fat in order to uncover its meanings and motivations so that the reasons that sufferers focus upon thinness (when they do) go unremarked (Burns 2004; Warin 2010). Additionally, these critics claim that the focus on thinness in the literature tends to characterize eating disordered

patients as extremely pathological in relation to “normal” women (given that most Western women are exposed to the same pressures to be thin). For example, Saukko argues that the claim that anorexia is about thinness casts the anorexic as a cultural dupe who is not strong enough to resist social pressure to be thin (Saukko 2008).

Others have challenged that the obsession with the “spectacle of thinness” (e.g., the use of imagery of highly emaciated women to engage and horrify the audience) manifests and reproduces the fear of fat it is meant to describe (Warin 2010). The focus on thinness has also been challenged given cultural associations of well-off white women with anorexia and women of color and economically disadvantaged women with BN and BED (Burns 2004). As well, Burns notes that the moral repugnance at overweight and obese bodies and the moral concern for underweight and anorexic bodies at the center of the spectacle of thinness reproduce oppressive norms on weight and food intake (Burns 2004).

In response to the criticism that eating disorders research is troubled by these various misconceptions, treatment providers and scholars have expanded their research in order to adequately consider the ways in which one’s location in various social categories (including eating disorder categories) shapes the experience of these illnesses (Malson and Burns 2009).

Summary

In summary, there is significant disagreement among treatment providers, medical ethicists, and feminist scholars about how to understand and treat eating disorders. These disagreements are unsurprising given the number of individuals suffering from eating disorders, the severity of associated psychological and physical health problems, and the difficulties encountered in their treatment. The long-term ethical implications of these disagreements are as yet unclear – it may well prove to be the case that a variety of distinct understandings and treatment practices are necessary for the effective treatment of eating disorders.

Cross-References

- [Alimentary Delinquency](#)
- [Food Addiction](#)
- [Food-Body Relationship](#)
- [Medicalization of Eating and Feeding](#)
- [Race, Racial Identity, and Eating](#)

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Eating Etiquette

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Synonyms

Civility; Courtesy; Customs; Decorum; Deportment; Good behavior; Manners; Politeness; Politesse; Propriety; Social graces

Introduction

Dining etiquette is an elastic term whose definition varies drastically across space and time. There has never been, nor could there be, a universal and precise code of manners, and eating behaviors have developed over time according to codes of conduct and idealized styles of comportment within and across cultures. The act of dining occupies a somewhat ambiguous position in the realm of human behavior: eating is a fundamentally corporal activity, and of the several fundamental bodily functions, it is the only one that is carried out primarily in the company of others, including strangers. Due to its status as both an unavoidably carnal and deeply social activity, dining has developed complex codes of etiquette that attempt to convert the nutritional act of eating into an expression of social status and cultural facility.

Table manners are key indicators of cultural identity. Travelers to foreign countries often find themselves adrift among new foods, new cutlery, and new ways of eating. Even the etiquette rituals associated with dining that occur away from the table differ from community to community. In Korea, for example, it is impolite not to refuse a dinner invitation at least several times before attending, while in America a refusal is taken at face value (Kim 1986). Due to perceived notions of tact, British diners refrain from commenting on their food, while for the same reason, Japanese banqueters make a point of vocalizing their praise

of the food at the table to signify appreciation (Visser 1991). The perpetual specificity in eating behavior leads to strong divisions between cultural groups. “Social norms such as table manners are rules and standards imposed by members of a social group,” write anthropologists Joly et al. (2008). Manners constitute an unspoken social code at the table, and those whose comportments do not fit the circumstances will find themselves excluded from the in-group at the table.

Eating behavior is contingent upon any number of circumstantial factors: location, company, time of day, occasion, and type of foods eaten, to name a few. This entry will trace the evolution of table manners in the western world in chronological order by focusing on several influential people and publications that helped shape current fashion. The ultimate goal of manners is to ritualize or otherwise mediate the process of consumption. An established eating ritual prevents the unexpected, identifies the diner, and provides a model of conventional behavior. During the course of history, humans have regarded etiquette variously as indicative of morals, social behavior, or class background. The ethics of etiquette center on matters of self-governance: Is it possible to bring the natural function of eating under control to make it acceptable to others? If there is no attempt to observe the ritual of manners, then is does that insult those who witness it or those who have chosen to abandon etiquette? Ethics are defined as a group of moral principles that govern the behavior of an individual or group. When dining etiquette is breached, those principles are challenged.

Antiquity

Table manners almost certainly have existed since the first humans gathered together to eat. After making a kill, hunters would have needed to decide how to divide the animal and perhaps even who would get to enjoy the honor of the best portions. The earliest written records describing banquet rituals date back to the third millennium in Sumer and the second millennium in Syria and Mesopotamia (Flandrin 1999). In the Old

Kingdom of ancient Egypt, circa 2500 B.C.E., manuals detailed instructions how to sit, what utensils to use, and how to set the table. Many of these rituals were rooted in religion, and the combination of food and prayer engendered customs that mediated the gap between the physical and the spiritual, many of which persist today.

Diners can display a lack of manners and, therefore, culture; or diners can display too much culture, becoming mannered – embodying culture to such an extent that they become overcivilized. In the classical world, manners and politesse were etymologically connected. The term “polite” shares a root with the Greek *polis*, or city. In Latin, the word *civis*, which underlies civil and citizen, is defined as a dweller in cities. With cities came civilization: the pressures of proximal living in an urban environment create the proliferation of food choices. No longer is the domestic table the only source of food. When meals are taken outside the private sphere, manners govern the change from a private feeding process to a socially acceptable act.

Medieval Through Early Modern

During the Middle Ages, dining implements evolved slowly. The most famous example of this can be found in the history of the fork, which existed as a bi-pronged instrument used to hold meat in place while it was cut. In the eleventh century, a Greek princess in Venice was lambasted by Italian clerics for her use of the fork, which they claimed was entirely too fussy and sensual, proving inappropriate for a woman of her status. Most Europeans held food in place with their hands while cutting and brought food to their mouths by spearing it on the tip of the knife. Soup spoons were flat and circular until the fourteenth century when they grew concave and oval, while plates were more often trenchers (from the French *trancher*, to slice), pieces of flat bread or wood that protected the table from sauces and knife marks (Elias 1978).

A German lyric poet named Tannhäuser wrote the *Hofzucht*, a book of etiquette rules, in the mid-thirteenth century. Included in this treatise

are many explicit instructions regarding the dinner table, many of which may seem unnecessary to modern diners. The *Hofzucht* specifies that gnawed bones should not be returned to the communal dish, that one should wash one's hands before eating, and that one should always eat with the outside hand to avoid elbow jostling. Even the highest nobles ate with their hands through the sixteenth century, meaning that the prescribed conduct for finger etiquette was equally as strict as it would be later for the fork. During the 1200s, the Italian Bonvicino da Riva wrote *Fifty Courtesies of the Table*, which instructed readers not to finger the rim of the communal glass, nor to spit on the table – only expectoration under the table or against a wall was acceptable.

The Renaissance is notable for both its surge of writers interested in civility and its relative openness about bodily functions. In 1530, the Dutch humanist Erasmus published *De Civilitate Morum Puerilium*, commonly translated as “On Civility in Boys.” Considered to be one of the most influential Western treatises on manners for children, Erasmus’ work instructs the sons of noblemen on how to live a moral life (Leece 2011). Notable here is the link Erasmus traces between manners and morality: issues of ethical conduct extend to issues of social conduct in his treatise. Erasmus advises not to dip fingers in the broth and not to offer half-eaten food to a neighbor, and he warns that if there is a piece of food that cannot be swallowed, one should turn around discreetly and throw it somewhere. To act badly at the table reveals a lack of discipline and respect. However, Erasmus’s code of conduct is not so strict that he privileges conduct over health. He writes, “Fools who value civility more than health repress natural sounds” (Erasmus 1961). *De Civilitate* was translated over 20 times and became popular not only with the noble class, but with a much larger audience: the upwardly mobile merchant class that was rapidly gaining power and wealth during the early Renaissance.

In 1558, Giovanni della Casa wrote *Galateo: Or, a Treatise on Politeness and Delicacy of Manners*. Giovanni writes that spitting and coughing in company, “as some hearty fellows

are apt to do,” is extremely indecent (Casa 1774). The *Galateo* also instructs people not to gape while at the table, sniff the dishes, nor offer anybody food that has already been bitten into. Notable is the change in behavior: for thirteenth century da Riva, spitting on the table is to be avoided; for della Casa some three centuries later, spitting anywhere in public is entirely prohibited. In another three centuries during the high Victorian period, spitting at the table was so uncouth it was not even mentioned as a potential faux pas. Other manners exhibit the same progression: what is censored in one century is forbidden in the next, and unmentionable by the “civilizing process” of several hundred years.

Seventeenth to Eighteenth Century

Despite Erasmus’ notion that a man’s character is revealed by his habits, it took nearly 100 years for manners to become a central part of how men were judged. Not until the seventeenth century did manners become the focal point of identification, when an increasingly stratified society sought to bring all human behavior under social control (Elias 1978). However, while this code of social protocol expanded in significance, it lost the moral aspect that Erasmus had considered the root of all conduct. With the centralization of royal courts in France, England, and Spain came the intensification of haute cuisine and the obsession with how to eat: the fork, which Queen Elizabeth I and her court eschewed, had numerous incarnations in the Jacobean court.

And significantly, during the seventeenth century, Europe received an influx of new foods from the Americas, Africa, and the Far East. Partaking of tea, tobacco, and coffee became a social activity, and coffeehouses proliferated as public spaces for discussion and digestion. Pamphlets were published, such as *The Rules and Orders of the Coffee-House*, published in 1674, illustrating codes of conduct for proper behavior. The coffeehouse was a space where men of a certain social standing could congregate, and so rules developed, creating hierarchies in seating placement and serving order.

Nineteenth Century

During the nineteenth century, the code of manners in the West reached an apex of complexity. The circulation of newspapers in the eighteenth century led to a rise in published manuals of all sorts in the nineteenth century, and etiquette guides proved particularly popular. The cookbooks and dining guides of the previous centuries, from Gervase Markham's *The English Huswife* (1615) to Elizabeth Raffald's *The Experienced English Housekeeper* (1769), assumed that their audience was, indeed, experienced. Cooking directions instruct the housewife who is familiar with the farm: "When you have killed and drawn your ducks," begins a late eighteenth-century recipe for roast duck (Raffald 1775). Behavior at the table was similarly assumed, and the occasional manners guide published in this period more often lists behaviors to avoid than rituals to follow. A new, well-educated middle class was forming, and the increasingly literate population could now learn how the elite behaved. There was no overruling opinion on conduct, however, and many dining practices remained regional.

During the nineteenth century, cookbooks became much more prescriptive. The average housewife was assumed not to know what to serve for dinner or even how to serve it. *Mrs. Beeton's Book of Household Management*, first published in 1861 by Mr. Beeton's publishing firm, consisted of over 1,000 pages and proved to be very influential in Great Britain, selling over two million copies in its first 7 years. Written for middle-class housewives, *Mrs. Beeton's* presupposes the presence of multiple servants at dinner and outlines the rules for a very formal and ritualized dinner. The butler, for example, brings in the first dish to dinner, removes the covers of the dishes, and handles wine throughout the meal, while the footman's duty is to assist him. Five to six plates per diner are used during dinner, and silverware is to be switched out after each course. Each cover is to be set:

... a knife on the right side of each plate, a fork on the left, and a carving-knife and fork at the top and bottom of the table, outside the others, with the

rests opposite to them, and a gravy-spoon beside the knife. The fish-slice should be at the top, where the lady of the house, with the assistance of the gentleman next to her, divides the fish, and the soup-ladle at the bottom: it is sometimes usual to add a dessert-knife and fork; at the same time, on the right side also of each plate, put a wine-glass for as many kinds of wine as it is intended to hand round, and a finger-glass or glass-cooler about four inches from the edge. (BEETON 1994).

While these handbooks portrayed a lifestyle of unattainable wealth for its middle-class audience, Victorian readers internalized the ideal of incredible self-control and restraint at the table. Victorians experienced what Natalie Kapetanios Meir calls "a heightened regulation of individual behavior," resulting in a suppression of all unbecoming bodily whims (Meir 2005). Despite these rules and regulations, manners were meant to be an extension of natural behavior: facile in expression and effortless in execution. As the etiquette of the time dictated such artifice in disguise of artlessness, the consequences of failing to follow etiquette rituals had ethical implications. Manners were crucial to social interaction, and a false step or flagrant disregard of the social code meant that the erring party was challenging the moral principles that governed the social collective.

With the rise in the importance of dining etiquette came an incredible diversification of dining utensils. Each implement became customized for a particular food: there was the silver fish fork, the elongated lemon fork, the bacon fork, the toast fork, the sardine fork, the joint fork, the baked potato fork, and the spork-like ice cream fork (Harlowe-Powell Auction Gallery). Similarly, each dish received a custom-made receptacle: gone was the bread trencher that was tossed or eaten after each meal. Instead, Victorian households accumulated bread plates, salad plates, soup bowls, and variously shaped wine glasses in place of the communal tankard. Adding to the confusion was a new trend of dining known as *service à la russe*, where dishes were brought in a succession of courses to the sideboard, where they were portioned and served hot. This trend, adopted in Paris in the 1830s and spread elsewhere, replaced the old European model called

service à la française, where multiple plates were brought out at once to crowd the table and provide an image of plenty. In addition to, or perhaps because of, an increasingly diversified table, the Victorians created a code of manners so elaborate that a person's class, age, and nationality could be determined by the way he took tea.

Twentieth Century

The Victorian style of dining fell out of fashion as the pace of modern life quickened and an elaborate table and service began to seem cluttered and affected. Manner books, however, continued to exert influence over the dining public. Emily Post published her tome titled *Etiquette in Society, in Business, in Politics, and at Home* in 1922, which quickly became a best seller. The differences between Mrs. Beeton's and Emily Post's instructions reflect the changes in mannered society within the span of 60 years. The two books overlap in scope: while *Mrs. Beeton's Book of Household Management* provides nearly a thousand recipes, instructions for servants, and models of comportment, Emily Post's *Etiquette* focuses almost exclusively on behavior. The cook and head servants are expected to devise the menu so that the lady of the house need not bother with actual methods of cooking. While Post's intricate hierarchy of manners may strike modern readers as distinctly Victorian, Post directly addresses and updates the outmoded fashions Beeton champions.

By the early 1900s, the dinner table had lost its large and elaborate centerpieces. The prevailing style now involved a pristine white tablecloth, polished silver, simple fresh flowers, and candles for pleasant lighting. Yet, while Emily Post criticized the Victorian penchant for accumulation, her fork recommendations are even more precise than those from Mrs. Beeton:

Then on the left of each plate, handle towards the edge of the table, and prongs up, is put the salad fork, the meat fork is put next, and then the fish fork. The salad fork, which will usually be the third used, is thus laid nearest to the plate. If there is an entrée, the fork for this course is left to be brought

in later. On the right side of the plate, and nearest to it, is put the steel meat knife, then the silver fish knife, the edge of each toward the plate. Then the soup spoon and the oyster fork or grape fruit spoon. Additional forks and knives are put on the table during dinner. (POST 1922)

Post describes a method of eating she calls zigzag dining, in which food is cut with the fork in the left hand and the knife in the right, but the fork is switched to the right hand to bring food to the mouth. This style of dining originated in Paris during the eighteenth century, but eventually went out of fashion in Europe (Elias 1978). Why Americans continue to zigzag even today is unclear: possibly because the fork itself had caught on late in America and diners were not comfortable using the left hand to bring food to the mouth. Or, it is possible that the Parisian trend was greeted in eighteenth-century America with such enthusiasm that the zigzag way of eating became solidly entrenched in culture.

The nineteenth-century French practice of dining in quick courses *à la russe* gained popularity in Europe and America, but ensuring that the entire table was served simultaneously required many servants. Emily Post writes that during "Russian" service, plates are to be cleared when an individual is finished to minimize the number of dirty dishes on the table at any time. Service *à la russe* prevented dishes from cooling and congealing at the table, which was quite unavoidable during a banquet-style *service à la française*. In *Etiquette*, Post adds a recommendation that butlers place a folded napkin between the palm and the plate if a dish is too hot to handle because the convergence of an entrenched silverware habit and service *à la russe* allowed food to be kept at higher temperatures when served (Post 1922). Hot food gradually became desired and expected, as heat represented freshness and exhibited the kitchen's skill in timing.

With a more efficient table service than the Victorians, formal dining in the twentieth century remained a highly ritualized performance, often lasting hours. *Etiquette* contains entries instructing how to sit gracefully, how to enter a drawing room, and how to divide one's

attentions at a dinner party. A hostess was expected to “turn the table” after the second course, meaning that she turn and begin a conversation with the man on her left. At that moment, all guests were expected to end their conversations and begin anew with the guest to the left. Such strict rules for entertainment seem essentially Victorian; clearly, ideals of social self-regulation carried through the turn of the century. Not surprisingly, Post likens hosting a dinner party to swimming three miles out to sea – not for the inexperienced hostess.

Contemporary Manners

Emily Post died in 1960, at a time when America was undergoing a cultural revolution. Championing equal rights among races, classes, and genders, the Civil Rights movement attacked many preexisting standards of etiquette as snobbish, exclusionist, and unnatural. In reaction to the proper behavior of the previous generation, Americans developed new ways of speaking, dressing, and behaving. The hippie movement rejected the accumulation of material possessions and focused on naturalistic eating. Women were moving into the professional workplace, and Emily Post’s labor-intensive dinner party became representative of the sexist, binding expectations of an unenlightened society. Packaged foods presented efficient alternatives to cooking from scratch, and efficiency in the kitchen became more important than perhaps even the final result.

During the second half of the twentieth century, the exploration of ethnic foods and foreign ways of eating came into vogue. Members of the upwardly mobile classes learned how to eat with chopsticks or even with their hands, as various cuisines from around the world were “discovered.” European mannerisms were rejected as old-fashioned, and fully American methods of consumption (e.g., burgers, fries, and pizza eaten out of hand) were embraced as patriotic and unencumbered of pretension.

In response to this challenge to “civilized manners,” many critics bemoaned the modern American’s lack of tact; a code of enforced

casualness creates the opportunity for rude and crude behavior, and lax table manners invite relapses into “barbarianism.” Judith Martin, known as Miss Manners, began an advice column in 1978 that gives wry advice to inquiring readers. The premise of her column is anachronistic: etiquette counsel for a modern and unmannered audience, but Martin’s ironic voice and authoritative good taste made her column indispensable. Published in over 200 newspapers worldwide, her column uses a question and answer format where readers could write in and ask questions ranging from wedding and funeral behavior to how to raise children. Compared with her predecessors, Miss Manners is notable for her sarcastic writing style, which through its formality and third person narrative pokes fun at being proper while at the same time extolling good etiquette as necessary for civilized behavior. While manners are proper, they are not viewed with the same moral weight as they were in the fifteenth and nineteenth centuries. Instead, manners in the twenty-first century indicate less the ethical standards of a person and more about his or her class and nationality. The way someone behaves at the table indicates upbringing, not the moral state of the soul.

The state of manners in the twenty-first century is far less complex than it was even 100 years ago; nevertheless, in this digital age of universal exposure, new codes of conduct are abundant. During Medieval and Renaissance court banquets, the diners sat only on one side of the table, both to watch the entertainment and to be watched as entertainment (Elias 1978). In restaurants and households in the twenty-first century, we labor to create the illusion of privacy, but social media have prevented most gatherings from being truly private. There are codes of conduct about the use of smart phones at the table, but as with any new element, these codes are variable and constantly in flux. Screens at the table and around the table have modified eating habits, and diners must now navigate between the virtual and the actual.

The proliferation and popularity of diverse ethnic cuisines has vastly improved the palate of the average American, and facility in several

cultural modes of eating is now expected. Diners who claim to be cultured are expected to manipulate chopsticks with ease, to know how to roll a taco, and to apply *injera* to a dish with only the right hand. It is true that enforced casualness in dining can lead to rude behavior, but with each development in restaurant form and function, a new type of etiquette develops.

Some mannerisms, such as the American zig-zag switch of the fork, are declining in popularity. Other traditions, such as formal dinner invitations, are seeing revitalized practice in an online format. With the “foodie” movement in the early 2000s, dinner parties are once again becoming increasingly elaborate, sans their former elaborate behavioral customs. Modern Americans in particular are very attentive to food authenticity and temperature (water must be iced, dishes should be still sizzling), but formal gatherings lack the structured behavior that characterized Victorian and early twentieth-century parties.

Summary

This entry traces some of the ways in which dining etiquette has evolved in the west from antiquity to the modern era. As dining etiquette evolves, it is instructive to watch how certain behaviors are tolerated, restricted, banned, and finally considered unthinkable. In addition, within the past century many preexisting rituals such as the butler announcing guests or the hostess turning the table have entirely disappeared. It remains to be seen how manners will develop to appropriately encompass the ever-quickening pace of living and eating. Already, unspoken codes of conduct have sprung up around eating on the go: eating in some forms of public transportation (e.g., busses) is frowned upon in many cities and outlawed in others, while coffee is assumed to be “to go” unless specified otherwise. Some restaurants of high repute have banned food photography claiming it ruins the dining atmosphere, while others rely on crowd-sourced reviews for publicity. While it is difficult to predict the future of manners, it is certain that several hundred years from now, table manners in the

twenty-first century will be used as both a positive and negative example of the beauties and idiosyncrasies of our era.

Cross-References

- [Culinary Cosmopolitanism](#)
- [Food and Class](#)
- [Food Rituals](#)

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Eating Invasive Species

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Synonyms

Gastronomical management; Invasive species management; Invasivorism; The invasivore movement

Introduction

While species have historically been introduced to new areas of the world in order to be used as food sources, many species are now being viewed as food sources subsequent to having been seen as invasive to an ecosystem. One management strategy is to encourage people to eat them. There are, however, also a number of economic, health, and legal concerns associated with eating invasive species.

Overview of Invasive Species Management

There are a number of conceptual issues regarding the criteria for determining invasiveness and nativity, as well as for ascribing terms such as “invasive,” “exotic,” “native,” and “nonnative” to members of particular species. Although agreement over definitions for these terms is not settled, invasive species are generally taken to be nonnative species that have detrimental effects on ecosystems and/or economies (Marks and Natural Resources Conservation Service 2006). There is continued debate over whether native species can become invasive if they exhibit certain destructive tendencies, as well as questions regarding how long a species must be in a certain location before it should be considered native, and even the adequacy of labels such as “invasive” (Tuminello).

In 2000, it was estimated that the United States alone spends about \$137 billion in annual costs due to damages from and control of invasive species. Invasive species are estimated to cause about \$400 billion in annual damages worldwide (Pimentel et al. 2000; Kirby 2003). While the introduction of nonnative species (which can subsequently become invasive) can occur due to “natural” means, human activity (largely due to travel and mobility) is the major cause of such introductions (Cox 1999). A variety of control methods are used as forms of invasive species management with the major categories consisting of chemical application, mechanical (or physical) removal, and biological control, which relies on the natural predators of invasives (Simberloff 2001).

Introduction of Nonnative Species as Food Sources

Human consumption of nonnative species has a very long history. Many of the historical introductions of both plant and animal species have been tied to their use as sources of food. In fact, 98 % of the US food system is constituted by nonnative species, such as corn, wheat, rice, cattle, and poultry (Pimentel et al. 2000). The introduction of mammal species to provide food for humans in Europe has been important since at least the eighteenth century (arguably earlier) surpassed only by the introduction of mammals for game purposes beginning in the late nineteenth century (Kraus 2003). Many fish species have been moved from the East Coast of the United States to become well established as food sources on the West Coast. Asian snakeheads (*Channa marulius* and *C. argus*) have recently been introduced as a food source in South Florida without authorization (Fuller 2003).

However, while there have been isolated examples in the past of the encouragement of eating invasive species as a control method (e.g., the consumption of nutria (*Myocastor coypus*) in Louisiana), the idea of eating invasive species as a way to significantly affect their populations has just begun to gain prominence as a management strategy in the last few years (Nuñez et al. 2012).

Eating Invasive Species as a Management Strategy: The Invasivore Movement

The consumption of invasive species as a management strategy is correlated with the recent emergence of the “invasivore” movement. This practice has caught on and been championed by a wide demographic including consumers, professional chefs, invasion biologists, and environmental organizations.

The Role of the Culinary Arts in the Invasivore Movement

Chef Philippe Parola was one of the first professional cooks to promote the preparation of invasive species as part of the culinary arts, marketing and developing recipes for nutria and Asian carp (*Hypophthalmichthys molitrix* and *H. nobilis*), a group of fish species which are taking over waterways and affecting native populations in the United States (Parola 2011). Chef Bun Lai of the restaurant Miya’s Sushi in New Haven, Connecticut, has recently gained notoriety for his use of (as well as his personal escapades foraging for) invasive seafood species in close proximity to his restaurant. He wrote an article in a special food-related issue of the magazine *Scientific American* describing recipes which include European green crabs (*Carcinus maenas*), European flat oysters (*Ostrea edulis*), and lionfish (*Pterois volitans*), a popular invasivore staple (Lai 2013).

Websites and Organizations Promoting the Invasivore Movement

The Institute for Applied Ecology, a nonprofit organization promoting conservation and habitat restoration, launched the *Eradication by Mastication* outreach, which consists of an annual “Invasive Species Cook-off” fundraiser, workshops such as the “Diggin’ It: Coastal Invasive Clam Dig and Workshop,” the cookbook *The Joy of Cooking Invasives*, and links to news articles

and other websites focusing on eating invasive species and the invasivore movement (Eradication by Mastication n.d.). Websites such as *Eat the Invaders* and *Invasivore.org* contain a variety of resources for those wishing to do their part for the environment by eating invasive species, including lists of invasive species, hints and tips on foraging for and preparation of particular species, historical and biological information on invasive species, lists of books on the subject, and species-specific recipes such as “Dandelion and Burdock Beer,” “Blackened Snakehead with Piña Colada Salsa and Strawberries,” “Frog Leg Piccata,” and “Kudzu Blossom Sorbet” (Eat the Invaders n.d.; Invasivore.org n.d.).

Books Related to the Consumption of Invasive Species

A number of books feature information on eating invasive species. Euell Gibbons’ 1962 classic *Stalking the Wild Asparagus* includes information on foraging, hunting, and cooking wild foods, including many invasive species (Gibbons 1962). Some cookbooks which focus on specific invasive species have been released recently, such as Tricia Ferguson and Lad Akins’ *Lionfish Cookbook*, of which sale proceeds go towards supporting conservation and lionfish research efforts of the organization REEF (Ferguson and Akins 2010). Hunting guide and writer Jackson Landers’ 2012 book *Eating Aliens* details Landers’ adventures hunting and eating invasive animal species, with chapters focusing on individual species such as feral pigs, Asian carp, nutria, and snakeheads (Landers 2012).

Concerns Over Eating Invasive Species

Although eating invasive species as a management strategy can educate the public, assist in early detection and rapid response efforts, and boost local economies, there are potential dangers in creating markets for invasive species as food sources. If members of invasive

species become valuable commodities, then they may end up being protected rather than eradicated (Nuñez et al. 2012). People may also respond negatively to the loss of jobs or income due to elimination of invasive species if they begin to value their current welfare more than they deplore a negative ecological effect of the invasive species (Nuñez et al. 2012). Similar circumstances have already occurred, for example, regarding the economic importance of invasive woody plant species in the US horticulture industry and the importance of brown trout (*Salmo trutta*) in the New Zealand fishing industry (USDA 2010; Veitch and Clout 2001).

Promoting the Spread of Invasive Species

Another problem with eating invasives is that the importance of invasive species as economic resources may lead to their spreading and introduction into other places. Spreading of invasive species may occur by people imitating successful business models outside of areas where a given species originally became invasive and may also occur when viable parts of invasive plants are harvested, through unintentional dispersal of seeds, bulbs, etc. (Nuñez et al. 2012).

Cultural Attachment to Invasive Species

Cultural attachment to invasive species is another potential way in which using them as food sources can become an obstacle to the management of their populations. If the consumption of an invasive species becomes an important part of a given culture's identity, members of that culture will likely be more reluctant to want to eradicate it. For example, wild boars (*Sus scrofa*) in Hawaii and wild horses (*Equus caballus*) in America have become integral cultural icons. Once a species gains cultural value, it can be protected and treasured by the locals even if it is nonnative and invasive (Nuñez et al. 2012).

Potential for Negligible Effects on Invasive Species Populations

Eating invasive species as a management strategy works as a supplement to the physical or mechanical removal of invasive species and, like all other management strategies, it must be employed in the right way in order to be successful. The successful control of invasive species populations depends not only on success rate in terms of sheer numbers of population members which are culled but also on other factors such as "harvesting" at the proper life stage to cause population declines. The harvesting of invasive species for food does not necessarily guarantee success. For instance, it may not be practical for people harvesting invasive species for restaurants and local consumers to go to remote areas or places with low population densities, even if harvesting in these areas is important for ecological purposes (Nuñez et al. 2012).

Lack of Consumer Interest in Eating Certain Foods

Even if eating invasive species appears to be a viable management strategy in ecological terms, another issue is that people may have an aversion to, or may simply lack interest in eating, particular species. For example, the common carp (*Cyprinus carpio*) was introduced to American rivers by the government as a "miracle food" for the country, but never achieved popularity (Landers 2012). Recent studies, however, show a considerable market potential for Asian carp meat in the United States, which indicates that the negative public view of carp is reversing (Varble and Secchi 2013).

In an interview on the Leonard Lopate Show on the radio station WNYC in New York, Chef Bun Lai remarks that sea squirts (members of the subphylum *Tunicata*), while "beloved in Korea," would probably not become an "overnight hit" in the United States and that he himself had to try them a number of times before beginning to enjoy them (Lai et al. 2013).

Research has been conducted recently on food neophobia, or a person's willingness (or lack thereof) to try new foods. At least one study has indicated that food neophobia is correlated with a person's willingness to pay to try new foods (Sanjuan-Lopez et al. 2011). Given the exotic nature of many invasive species, many people may be unwilling to try and/or buy them as food sources.

Health Risks Associated with Certain Invasive Species

Some invasive species are associated with potential health risks, which may act as another obstacle for the invasivore movement. Giant African land snails (*Achatina fulica*), an invasive species in South Florida, may carry meningitis and other diseases, parasites, and toxins, including commercial pesticides (Sargalski 2013). Burmese pythons (*Python bivittatus*), which are invasive in the Florida Everglades, have been found to contain very high levels of mercury (Kessler 2010). The USDA points out that wild pigs are susceptible to swine brucellosis, pseudorabies, classical swine fever, and African swine fever (USDA 2005). In March 2013, the FDA warned that lionfish may contain ciguatoxins, which can lead to ciguatera fish poisoning (CFP), for which there is no known cure (News Desk 2013).

Legal Restrictions Regarding the Marketing and Sale of Invasive Species for Human Consumption

There are also a number of legal restrictions regarding the consumption and sale of invasive species. Agencies such as the USDA sometimes prevent hunting on lands that are being used for research, even if the area is public. In addition, besides fish, wild game is required to be killed in FDA-approved slaughterhouses before they can become commercially available to the public. This has posed major problems, for instance, regarding the marketing and sale of nutria meat,

severely disrupting Philippe Parola's plans to market the food in America and worldwide (Landers 2012).

Summary

This entry provides an overview of the nature and effects of invasive species and the role of the invasivore movement in the encouragement of eating invasive species as a way of reducing and/or eliminating invasive species populations. A number of websites, organizations, and books exist which promote invasivorism. At the same time, there are a number of concerns which have been expressed regarding the eating of invasive species, and these range from concerns over the success of the management strategy, as well as economic, health, and legal issues.

Cross-References

► [Food Risks](#)

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Eating, Feeding and the Human Life Cycle

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Synonyms

Biocultural; Growth and development; Life stage

Introduction

Humans, like all biological species, have their own pattern of ontogeny, that is, the process of growth and development originating with conception and ending with death. This pattern involves biological, behavioral, mental, and emotional development and maturation and has been divided into stages: the three trimesters of prenatal life, the neonatal period, infancy, childhood, juvenile, adolescence, adulthood, elderhood, and senescence (Bogin 2001, Chap. 3). Each stage has its own particular nutritional requirements and culturally based understandings of appropriate eating practices. This entry reviews the ethical issues arising from eating and feeding practices in the aforementioned life stages, albeit combining the discussion for some of these stages.

Birth and Infancy

The neonatal period, the first 28 days of life after birth, is characterized by rapid growth and

adjustment to life outside the womb, such as temperature fluctuations. The primary factor leading to neonatal death, particularly prior to neonatal biomedical care, is inadequate growth and development. The sensitivity of this period is widely recognized across cultures and illustrated by the institution of a 4–6 week postnatal rest period. Such a rest period allows the mother and infant to rest, bond, and establish breastfeeding. Visitations are typically kept to a minimum; thus, this postnatal rest period can also serve to limit exposure to pathogens or other causes of illness, such as the evil eye. During this period, the mother is given foods culturally understood to foster breast milk production and recovery from birth (more on feeding the mother in the adulthood section). The feasibility of the postnatal rest period is influenced by family structure (e.g., presence of kin to care for the mother and newborn as well as the rest of the household), socioeconomic status, and political-economic policies (e.g., availability of paid or even unpaid maternal leave).

One issue where Western biomedical/nutritional knowledge has diverged with traditional newborn feeding practices in many cultures globally is the practice of not breastfeeding the neonate until approximately 3 days after birth, when the milk has come in. The golden-hued liquid, colostrum, first produced is considered a critical source of nutrients and antibodies fashioned in an easily digestible form in contemporary biomedical contexts. However, in places where colostrum is avoided, other liquids may be fed to the newborn, such as water sweetened with honey or sugar. Various reasons have been reported for this, including the colostrum is impure and perceived as “pus-like” or as diluted milk and in turn can cause indigestion or other health problems in the infant. However, from a biomedical perspective, colostrum avoidance is problematic, for not only are the antibodies and nutrients not transmitted, but the water or the tools used to feed the neonate, such as a rag or sponge with which drops of the sweetened water are squeezed into the newborn’s mouth, may transmit pathogens. Furthermore, the newborn’s suckling reflex is undermined when breastfeeding is not initiated

shortly after birth, and this can lead to ongoing challenges in breastfeeding (note that this is echoed in hospital deliveries, when the newborn is separated from the mother). Various biomedically informed education efforts around the world have been effective in reducing colostrum avoidance, but people may still feed the neonate sweetened water when doing so has strong culturally symbolic meanings, such as blessings for a long, happy life. For example, infants may be breast-fed before the milk is let down but in conjunction with sweetened water. This indicates the importance of symbolic, cultural meanings of a feeding practice.

Infancy is defined as beginning at the second month of life and ending at weaning, typically the first three years of life (Bogin 2001, pp. 77–81). Infant feeding practices and debates have centered on breast versus bottle/formula, social support for breastfeeding, length of time for exclusive breastfeeding and introduction of solid foods, and age of weaning. How breastfeeding is practiced is not uniform across individuals or cultures. On-demand breastfeeding, where the infant feeds whenever and for however long she or he desires, requires specific maternal/family behaviors, including co-sleeping, carrying or keeping the infant close-by, clothing that allows for ease of breastfeeding while conforming to local modesty mores, and social/family support for breastfeeding. Feeding on a schedule, oftentimes dictated by other demands on the mother’s time, can accommodate a wider variety of behaviors and practices, including sleeping arrangements.

“Breast is best” is a refrain common in contemporary public discourse, as the biological and behavioral benefits of breastfeeding, for both infant and mother, have been recognized and promulgated by various health organizations and breastfeeding advocates. There has been a long-standing polarization between breastfeeding advocates and infant formula manufacturers, dating back to the first half of the twentieth century. From this period, infant formula became increasingly socially accepted and practiced, with a concurrent decline in the support and practice of breastfeeding. Feeding one’s infant with breast milk or infant formula was classed, as higher

social status women, who had the means to purchase formula, bottles, etc., shifted to formula feeding first. Choosing to breast-feed in this environment was difficult, and those women came together to form support groups like the La Leche League. Because of the social prestige and assumed technological benefits associated with formula, women of lower social status throughout the world began to shift to formula feeding. However, to cope with the costs associated with formula feeding, these women came up with a variety of strategies to provide the benefits of formula feeding, such as diluting the formula. Furthermore, the water used was too often unsanitary and, combined with the lack of antibodies provided in breast milk, resulted in greater chances of illness in infants. As recognition of these problems increased globally, various groups agitated against formula feeding and culminated in the globally publicized anti-Nestle campaigns and resultant trial in the early 1970s. Consumer boycotts and education campaigns have increased since then, resulting in a shift in infant feeding practices, where more women of higher social strata now breast-feed (Van Esterik 1995). Efforts to foster breastfeeding continue by providing lactation specialists and support both in hospital and at home and limiting exposure to formula in hospitals, through efforts like the Baby-Friendly Hospital Initiative of 1991 (WHO and UNICEF 2009).

Current biomedical recommendations promote exclusive breastfeeding for 6 months and continuation of breastfeeding for 2 years or beyond. For women to follow these recommendations, the sociocultural contexts in which they live must provide a milieu that is supportive of those recommendations. Not only is familial/social support for the mother necessary, but so are workplace environments and political-economic policies that can accommodate mothers who breast-feed their infants. For example, in a global survey of 188 countries, approximately 96 % provided paid maternal leave, while over half offered 14 or more paid weeks. Furthermore, 75 % of the countries surveyed ($N = 181$ with data) protected women's right to breast-feed at work. Recent information indicates the

majority of countries guarantee paid breastfeeding breaks (Heymann 2012, Chap. 5; Heymann et al. 2013). Thus, countries that do not provide legislation and policies that support paid maternal leave and breastfeeding create an inequitable infant feeding environment so that only mothers who have the economic means to take maternal leave can afford to initiate and exclusively breast-feed for 6 months, if they choose to breast-feed. It must be remembered that not all women can or want to breast-feed, for a variety of reasons, and the acceptability of these choices has altered across time and space. The infant feeding practices a woman utilizes not only are reflective of her choices, knowledge, and preferences but are shaped by her sociocultural and political-economic contexts. More work is needed on how women integrate multiple infant feeding practices across cultures and in different social milieus.

The politics of weaning is intertwined with the political-economic context of breastfeeding, for many mothers will cease breastfeeding at the end of the maternal leave. Ethnographic evidence suggests that the typical age of weaning for most of human history was approximately 2–3 years, coincident with the emergence of a child's deciduous dentition. Yet it is clear that there is a wide variation in age of weaning, both between and within cultural groups. Contemporary lack of social support for breastfeeding for toddlers in the United States does not mean that it does not happen; "secretive nursing" of older children occurs, where women do not reveal this practice even to their health practitioners (Dettwyler 1995).

Childhood and Juvenile

Weaning marks the transition to childhood, from approximately 3 years until the age of seven, and is characterized by particular feeding needs based on biology. First, deciduous dentition combined with a relatively small digestive system means that a child ought to be fed foods that are easily chewed and digested and low in volume. Second, because of the relatively large brain of a child and

the associated high metabolic costs, foods need to be nutrient-dense. Third, children's cognitive and motor skills are not adequate for them to acquire and prepare foods, and so they remain dependent on older individuals (Bogin 2001, pp. 81–84). The juvenile period, from the age of seven until puberty, is marked by the ability to process an adult-type diet (coincident with the eruption of the adult dentition, beginning with the permanent molar) and a decrease in the high nutrient needs associated with brain growth, as growth, in terms of weight, is completed. Development in motor and cognitive skills has advanced so that a juvenile is able to rely less on older individuals and to feed themselves (Bogin 2001, pp. 83–87). Yet socially, a juvenile remains dependent on others. For the remainder of this section, the term children will be used.

There are a number of ethical issues related to feeding children; here, the preferential feeding of children is based on gender. The most common gendered preferential feeding practices are those favoring sons while neglecting daughters. Girls may be weaned earlier and receive less food and/or poorer-quality foods (or not be offered “special” foods or treats). Son preference has been described in a variety of societies, but it is important to recognize the variation within and between cultural groups. For example, in a study in rural Mexico, dietary quality was equitable among children, whereas girls consumed less; however, the researchers noted that girls were less active (fitting gender norms on girls’ ideal behavior – quiet and demure), as determined in playground observations, and so required fewer calories (Backstrand et al. 1997). In contrast, in rural Bangladesh, girls are weaned earlier and receive a third less rice than their brothers (Ahmed and Zeitlin 1994). A variety of studies undertaken in South Asia have documented that son preference and daughter neglect feeding practices are regionally distributed and have changed over time. Furthermore, family composition is associated with daughter neglect feeding practices; birth order and the gender of older siblings affect this practice, for daughters *are* desired. Thus, a firstborn daughter has a much lower risk of neglect with respect to

feeding practices. It should also be noted that although the focus here has been on gendered feeding practices of children, health-care allocation is another important factor shaping gendered childhood differentials in morbidity and mortality.

Adolescence

Adolescence initiates with puberty, ending with cessation of growth. There are changes not only in body size but also in body shape; typically this pattern is gendered, as boys have a relative increase in muscle mass, while girls show a relative increase in body fat (Bogin 2001, pp. 87–93). These physical changes in combination with societal norms of desirable, gendered bodies can create particular eating issues. For example, in some cultural groups, a large body size in women is viewed as desirable, and so girls’ eating practices will be controlled in order to attain that desired body size. This involves eating even when the girl does not wish to, being fed specific foods that are culturally understood to foster increased size, as well as limiting physical movements. It is not an easy process; girls may cry and resist, and older women recognize this as “work” – it takes great effort to attain the ideal (Popenoe 2004).

In contrast, in North America, the opposite ideal, of a skinny body, has long been the norm for girls and women (Grogan 2008). Dissatisfaction with one’s own body, particularly weight, manifests in adolescence – studies report that 66 % of adolescent girls are dissatisfied with their body weight and over half are dissatisfied with the shape of their bodies, particularly the size of their thighs, buttocks, and hips (e.g., Moore 1993). This dissatisfaction manifests in disordered eating practices, including dieting, fasting, purging, etc. Yet the causal relationship between media portrayals, body dissatisfaction, and disordered eating is not clear (Levine and Murnen 2009). This is an important issue to continue to investigate, not only in North America but also globally, as Hollywood and other forms of Western media are consumed in diverse

cultural settings (e.g., Shroff and Thompson 2004), in conjunction with global concerns around obesity. Furthermore, the unique experiences of boys need continued investigation, for body dissatisfaction has been noted, in particular in relation to perceived low muscle mass/size, as the hyper-muscular, lean male body has increasingly been idealized (Botta 2003; Moore 1993). Disordered eating practices can result – although with a different objective – to increase muscle mass and muscle visibility. Because adolescents continue to grow and develop, disordered eating practices can have lifelong consequences.

Adulthood

Adulthood is more difficult to define, in that the end comes with the end of childbearing years – menopause – for women, but more challenging to define in men (Bogin 2001). This definition focuses on fertility and reproduction, and in keeping with this definition, issues arising with pregnancy are focused upon here. This discussion will also be linked with the prenatal life stage, for oftentimes discourses on women's diet during pregnancy are centered on how her eating habits shape the biology and welfare of the fetus.

How much women eat while pregnant is culturally mediated, for although there are some increases in nutrient/caloric requirements, these are not very large. Biomedical discourse, in the context of the “obesity epidemic,” emphasizes that little weight gain is necessary for a healthy baby and gaining too much weight may lead to birth complications and health problems for the infant and mother. Research suggests that if the mother's diet is low in energy, protein, and micronutrients, then her child has an increased risk of obesity in adulthood, and their daughters are more vulnerable than their sons (Yang and Huffman 2013). Pregnancy weight gain guidelines are linked with body mass index, where weight is understood in relation to height; note that not gaining enough weight if the mother is underweight at the start of the pregnancy is also a health risk. But separate from biomedical

guidelines are traditional guidelines, such as “eating for two” or limiting food consumption so that the fetus has room to grow (e.g., Nichter and Nichter 1983). Thus, regardless of women's body size prior to pregnancy, if she and her family believe that she must limit or increase her intake to ensure a healthy baby, then biomedical advice may be ignored.

Food taboos shape pregnant women's food practices across time and space, from avoidance of alcohol and caffeine in North America to “hot” foods across cultures with humoral medical systems. These taboos are framed as practices necessary to protect the health of the fetus. For example, consumption of “hot” foods is a cause of miscarriage. Typically, these food taboos do not restrict carbohydrate dietary staples, but rather restrict protein sources such as meat or eggs and/or some fruits and vegetables. Consequently, dietary quality may be affected. In some cases, taboos may so restrict eating practices that women's nutritional health may be affected, especially if combined with pregnancy sickness.

Also shaping adult eating practices are gendered understandings of body and food. Men, across historical and cultural contexts that emphasize their economic role in the family, may be understood to require more, and heartier, food compared to adult women. Such beliefs shape not only what people eat but how men and women socialize over food: women may wait to eat until men have had their fill or purposely snack prior to a meal in order to not eat heartily in front of their male date (e.g., Counihan 1992).

Elderhood and Senescence

The biological experience of elderhood and senescence is challenging to describe, for it is a highly idiosyncratic process. It is a process of decline, but molecular or other physical changes seen in one individual are not necessarily evident in another (Bogin 2001, pp. 95–97). One common experience in old age is a decline in abilities to taste and smell, which can lead to a decreased

variation in diet and, in turn, a decline in nutrient intake. Loneliness and culinary knowledge can also shape eating behaviors during old age, and this is gendered, with older men exhibiting poorer diets. Furthermore, consequences of early life eating behaviors, such as dieting in adolescence, may affect experiences of aging and wellness.

Cultural gender norms continue to influence older women's eating practices, with some women striving for a youthful, thin body, which in turn can lead to disordered eating (or continued patterns of disordered eating from earlier life stages). However, with aging, a greater acceptance of various, particularly larger, body types has been noted, especially when weight gain is viewed as an inevitable experience of aging. Such a belief could be freeing, as women no longer worried about the thin ideal and dieting; thus aging can be freeing. Less is known about older men's body image and associated eating behaviors, although it is suggested that men as a group continue to suffer less body dissatisfaction and an opposite pressure – to maintain muscle mass (Peat et al. 2008). Further research is also needed on potential cohort's variable eating practices and experiences.

Summary

Eating behaviors and feeding practices across the human lifespan are the result of biological requirements and cultural customs. Ethical issues arise within all life stages, and gender identity and cultural norms are an important factor in shaping eating and feeding practices. Although discussed here with respect to each life stage, it is important to recognize the lifelong and potential intergenerational effects of food practices. A girl child who is neglected from birth, who may be fed less frequently, weaned early, and given less food or poorer-quality food compared to her brothers or elder siblings, will suffer in terms of her growth and development, and this can have lifelong consequences. Furthermore, evidence is accruing that the experiences of the mother may have biological consequences for not only her children but also her grandchildren.

Simultaneously, there must be awareness of the social, cultural, and environmental contexts that shape feeding practices of mothers and do not place sole responsibility on mothers for the eating behaviors of their children.

Cross-References

- ▶ [Eating Disorders](#)
- ▶ [Infant Feeding](#)
- ▶ [Obesity and Responsibility](#)

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Eating, Feeding, and Disability

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Synonyms

Functional limitation; Handicap; Impairment; Medical model; Social model

Introduction

This entry addresses “disability,” both as a medical condition and as a social construction. In addressing disability as a medical phenomenon, the following topics are covered: malnutrition; obesity; GMOs, environmental toxins, and impairment; disability as an input; and food security and an underreporting of disability.

The second section focuses on disability as a social construction and addresses the following topics: food choice, independence, and autonomy (including feeding tubes, assisted eating, and food choice); power and abuse; and food acquisition and access (including mobility impairment, identity, and inclusion). As the topic of disability is relatively understudied within food scholarship, the summary emphasizes directions for future research.

Definitions

Traditional notions of disability frame it as a medical phenomenon located in an individual’s body, and measures often define it by assessing functional ability, including level of severity. A common definition considers disability as something that “limits one or more major life activities” (e.g., Wendell 1996), including “being regarded as having” an impairment (e.g., the Americans with Disabilities Act ADA 1990). Being able to acquire food, cook, and eat all constitute major life activities.

Disability Studies scholarship, however, recognizes that a person’s ability to function can vary, depending on the type of environment one is in.

For example, wheelchair users are far less disabled in environments that do not rely on stairs, but that are instead built with ramps and wide doorways. Similarly, an individual with a severe facial disfigurement is disabled when a restaurant’s maitre d’ tells her that there are no tables available, even though she does not have any impairments that would limit her ability to eat. Accordingly, disability is not a fixed state, located in individual bodies, but rather a social process, including the experience of discrimination (see Oliver 1990). Although there is some debate over definitions, generally speaking, “impairment” is used to refer to a bodily condition or disease, whereas “disability” describes the experience of a body in a particular physical, social, or cultural environment. This is referred to as a “social model” of disability.

A “social model” of disability distinguishes itself from the traditional “medical model” perspective by emphasizing the cultural variance in

people's lived experience of their bodies: what is considered disability varies from culture to culture and therefore is a social construction. This distinction is important in order to understand completely ways in which disability intersects with food and eating.

Person-First Language

It is current convention in American texts to use "person-first" language in referring to disability (e.g., "people with disabilities," as opposed to "disabled people"). While "people-first" language emerged as a way to assert one's humanity, by emphasizing the person as opposed to the condition, some scholars have critiqued this convention (see Titchkosky 2007). According to a social model, people do not "have" disabilities; they have impairments. They are disabled by environments. In Europe and elsewhere, the people-first convention is reversed. It is felt that "people with disabilities" locates the problem of disability within the individual rather than the social milieu, and therefore, "disabled people" more accurately describes the phenomenon of disablement as a process. Consequently, this entry avoids person-first language.

Disability as a Medical Phenomenon

Malnutrition

Disability is traditionally understood as a medical condition or negative health outcome (see above). Thus, "disability" appears in food studies and agricultural ethics primarily as a measure of malnutrition or undernutrition. The World Health Organization (WHO) defines "nutrition disorders" as "caused by an insufficient intake of food or of certain nutrients, by an inability of the body to absorb and use nutrients, or by overconsumption of certain foods" (www.who.int/topics/nutrition_disorders/en/).

Nutrition disorders are particularly serious in children, since they interfere with healthy growth and development and can predispose people to many secondary health problems, such as infections and chronic diseases, thus reducing life expectancy, quality of life, and levels of

productivity (see also "► [Food and Life Chances](#)"). Malnutrition affects significant numbers of people worldwide, in both developing and developed countries (www.worldhunger.org). People facing food shortages have a greater risk of contracting disease that can lead to disability or death. Accordingly, "disability" is caused by malnutrition (from poverty, war, drought, etc.). (See also "► [Food and Health Policy](#)"; "► [War and Food](#).")

Obesity

Concerns with growing rates of obesity worldwide, and the secondary health consequences that result, also address disability as a medical condition. According to the WHO definition above, obesity is an outcome from the "overconsumption of certain foods" and thus frames obesity as a form of disability.

For most of human history, obesity and excess weight were a problem only among wealthier classes and in wealthier nations; more recently, rates of obesity have been rising dramatically in low- and middle-income countries, particularly in urban settings. The WHO estimates that obesity has more than doubled worldwide since 1980 (www.who.int/mediacentre/factsheets/fs311/en/index.html). The growth in obesity rates has been associated with changes in dietary and physical activity patterns linked to globalization. Importantly, environmental and social changes associated with development and the lack of accompanying policies to counter these changes in and across various sectors (such as health, agriculture, transportation, urban planning, food processing, distribution, marketing, and education) have had a disproportionate impact on poor people worldwide, including many disabled people.

Disabled people, compared to their nondisabled counterparts, are more likely to be sedentary and overweight and to experience the negative health consequences associated with those conditions (Kirchner et al. 2008). Note the secondary, negative health outcomes are a function of being sedentary and overweight and not a function of one's initial impairment. Almost all people, even those with severe motor

impairments, are capable of some physical activity, albeit with adaptive equipment or utilizing alternative strategies. However, disabled people generally receive little training from rehabilitation systems about how to exercise or how to cook and eat healthy food. (See also “► [Cooking Tools and Techniques: Ethical Issues](#)”). As a consequence, many disabled people eat a “diet of convenience,” including “fast food” and preprepared, heavily processed foods. In addition to the advantages these foods confer for low-income populations generally (i.e., cost), they have added benefits to disabled people (e.g., with a “drive thru,” people with motor impairments do not need to navigate inaccessible interiors; consistent menus are easy to remember for people with cognitive impairments; people with visual impairments do not have to hope for a braille menu or rely on others to read the print version to them; etc.).

In conclusion, both these realms of “nutrition disorders” contain implicit ethical dimensions: because malnutrition and obesity are not equitably distributed in the population, they reflect larger concerns over issues of social justice and class inequality. (See also “► [Food and Class](#).”)

Genetic Modification, Environmental Toxins, and the Creation of Impairment

Although scientific studies are not conclusive, there is concern from an ethical standpoint about the use of genetically modified organisms (GMOs) in the food supply, particularly since labeling is not required in many countries, including the USA. (See also “► [GMO Food Labeling](#).”) Of major concern are the long-term health consequences that may result from the use of GMOs, as these have not been studied sufficiently prior to their release into food systems, and most of the research conducted on their health effects has been conducted by the industry itself. There is similar concern over increased environmental toxins, in part because the use of GMOs often requires extensive use of pesticides, herbicides, and fungicides, all of which add to the cumulative levels of exposure that people encounter. (See also “► [Herbicide-Resistant Crops](#)”; “► [Food Risks](#).”) These products leach into groundwater

and soil, thereby affecting a wider population, including people who never eat GMO products and farmers who inhale the pesticides directly. In other words, food systems may be creating illness and/or impairment, and doing so in ways that do not allow consumers to “opt out.” Pesticide exposure has been shown to generate impairment, from neurological problems to missing limbs to gastrointestinal and immune system disorders. It is unclear yet whether the use of GMOs (and/or the use of GMOs in conjunction with secondary products like increased herbicides) will also create additional impairment.

Disability as a Cause, Not an Outcome

In both cases of “nutritional disorders” mentioned above, malnutrition and obesity, the result is a negative health outcome, or “disability.”

However, it is also true that people are poor and malnourished, because they are disabled. Processes of disablement – the treatment of people who are or presumed to be impaired – including stigma, discrimination, and low expectations can cause economic inequality, poverty, and poor nutrition, among other outcomes. Although it is presumed that material hardship and low income result from disabled people’s functional limitations that prevent their full participation in productive economic activity (see Hiranandani 2009), the truth is that the link between poverty and disability is more complex and multidirectional. (See also “► [Food and Class](#).”)

Revisiting the functional definition above, the assumption is that disabled people are inherently unable to work, that being unable to work is what defines someone as disabled. For example, in order to qualify for “disability benefits” in the USA, an individual has to be certified as unable to work. Yet, in reality, many disabled people can and do work. And many more could, if barriers to employment – such as discriminatory hiring practices, attitudinal barriers, caps on earnings in order to maintain benefits (including much needed health insurance), limited and poor quality education, training, and “rehabilitation” services – were removed. This is an ethical issue as disabled people around the globe are more likely to be poor than are their nondisabled

counterparts. They are also more likely to be unemployed and, when they are employed, to earn less than nondisabled people.

In addition, there are many other types of impairments besides “nutritional disorders” that can cause food insecurity and limit access to and acquisition of sufficient, desired foods. For example, having motor impairments may limit people from accessing emergency food aid or make getting to the grocery cumbersome, if not impossible, in certain environments. (See also “► [Food Assistance and International Trade](#)”; “► [Grocery Store Design](#).”) These are discussed in greater detail below.

Food Security and an Underreporting of Disability

(See also “► [Food Security](#).”)

The presence and impact of disability – even from a “medical model” – is insufficiently examined within studies of food security, despite the evidence that people with a wide range of impairments have added difficulty obtaining sufficient food on a daily basis and in emergency contexts. A collection of essays in *Human Organization*, for example, highlighted the difficulty disabled people have in both natural and man-made disasters, as conventional disaster planning and response – including access to food aid – tended to perpetuate existing social inequalities (Fjord et al. 2009; Merten and Haller 2009; Gwatarisa and Manderson 2009). (See also “► [Food Assistance and International Trade](#).”) Similarly, recent work by Groce (2012) indicates that there is not usually an equitable “trickle-down” effect of food distribution to disabled people within communities, nor within the household. From an ethical standpoint, this raises serious concern: disabled people are one of the most marginalized populations facing food insecurity, and yet awareness of this is hardly recognized by scholars and activists seeking to redress hunger and unequal access to food.

There are multiple reasons for this. For one, “disability” is not on the intellectual radar of many food scholars; it has yet to be fully recognized as a demographic characteristic on par with race, class, and gender. For another, prevalence

estimates of the presence of “disability” (or more accurately, impairment) are underreported. Questions about it do not appear on many standard instruments used by food scholars, nor within more open-ended, flexible surveys and during interviews. While scholars do not necessarily look for “disability,” people also do not always report it in ways that researchers expect. For example, people may not have a disabled identity or consider themselves disabled, even if they experience so-called functional limitations. Disability is a heavily stigmatized status that people may not want to personally acknowledge or claim that they have. Furthermore, what is considered “disability” varies from culture to culture (see Ingstad and Whyte 1995), including between the culture of the researcher and local participants.

Nonetheless, ethnographic data has begun to document the presence of impairment and ways in which it limits food acquisition and eating. For example, people report “having bad knees,” “occasional headaches,” a “bad back,” or “fatigue” that limits their ability to shop and/or carry home groceries, particularly if they rely on public transit (Webber et al. 2007; Gerber 2012). In a study among low-income households, Webber et al. (2007) found the prevalence of disability surprisingly high and that the trade-offs people made (e.g., convenience of a local grocery, good wheelchair access, best prices) intersected with impairment far more than previously supposed. Their research indicated that even people without a disabled identity, people who do not think of themselves as disabled and who therefore might not respond affirmatively on a standard instrument of food security, frequently had their bodies impact their ability to shop, make purchasing decisions, and carry home groceries. This was true, even when the primary shopper in the household was not impaired: having a disabled family member impacted household food security, as it created constraints on both time and budget. Disabled people are also often limited in their choice of foods. For example, many older adults, people with visual impairments, people with cognitive impairments or brain injury, among others, may have difficulty reading or understanding package labels.

(See also “► [Food Labeling](#).”) And any individual, regardless of impairment type, that is reliant on others to shop for them, even when providing a clear list and instructions, is essentially subjected to the whimsy and interpretation of others. If disability is seen as an *input* (rather than an outcome) that limits food acquisition, studies might examine it more. Similarly, understanding “disability” as more than a medical condition – as a social construction, rather than a medical or biological fact – might also increase the presence of it in food studies.

In conclusion, issues of food security are also disability issues, and scholarship should reflect that fact. (See also “► [Food Security](#).”) Because of the association of disability and poverty and the association of hunger, obesity, and food insecurity to poverty, any project that examines food deserts or the obesity epidemic is, by definition, examining a disability issue. Moreover, these issues disproportionately impact disabled people. Compared to the nondisabled population, disabled people are more likely to be overweight, sedentary, and experience the health consequences that result. In other words, food security is a disability issue: the effect of globalization on food access is felt particularly hard by disenfranchised populations, which – by definition – include many disabled people.

Disability as a Social Construction

Food Choice, Independence, and Autonomy (See also “► [Taste, Distaste, and Food](#).”)

Access to food, control over food choice, and eating for disabled people are often balanced with a need for assistance. Nonetheless, or perhaps because of this, food and eating serve as important and symbolically laden sites through which people contest their identity and/or mark their independence. In western cultures, being able to feed oneself symbolizes independence and acts as a marker of adulthood. Difficulty achieving social adulthood for disabled people accentuates the stigmatizing aspects of disability. Research reiterates the point that food practices not only reflect cultural assumptions but define and

maintain them. (See also “► [Ethnicity, Ethnic Identity, and Food](#)”; “► [Race, Racial Identity, and Eating](#).”) Disability Studies scholarship has identified the continued infantilization of disabled people (Longmore 2003), and one way this is done is through control over food and eating.

Feeding Tubes/Gastrointestinal Tubes (G-Tubes) (See also “► [Medicalization of Eating and Feeding](#).”)

The case of Terri Schiavo, a Florida woman in a “persistent vegetative state,” received nationwide attention and prompted a nationwide ethics debate in the USA over the right to die. In “Death with Dignity” Acts and in other forms of assisted suicide, the assumption is that withholding food, or withdrawing feeding tubes, is an acceptable form of euthanasia, although this has been contested by many disability rights advocates, including the group Not Dead Yet (www.notdeadyet.org), which considers euthanasia as a deadly form of discrimination against elderly, ill, and disabled people.

G-tubes also highlight the very cultural nature of eating practices and why some are seen as acceptable and others not. Some cultures eat with their hands, others with knives and forks. The fact that in western cultures eating with a straw in the mouth is seen as “yum” while a straw in the belly is seen as “ick” is an example of cultural relativism.

Assisted Eating

Similarly, context matters in the case of assisted eating for people with motor impairments. (Note: people with motor impairments is a broad category, including people with full paralysis or quadriplegia, lack of limbs or digits, multiple sclerosis, etc.). Interdependency is culturally acceptable for children, because children in western cultures are expected to be dependent and, therefore, need help eating. Adults routinely feed babies as an act of love. But cultural expectations for adults are different: being an “adult” in American culture, for example, means being independent, including providing for and feeding oneself. Using a personal care attendant (PCA) to help

with meals is stigmatized, to the point that it might prevent people from participating in public and private events that involve food and from receiving the benefits of sociality that come from breaking bread together (see, e.g., Lance 2007). But this is not a “given” or necessary function of one’s impairment, as much as it is a reflection of one’s culture. For example, in Ethiopia, adults routinely feed one another as a display of friendship and as a common practice that reinforces the intimacy of social relations. Even in the USA, feeding one another can both generate and reflect intimacy, such as between romantic couples. However, for disabled people, needing help eating does not generate a positive form of interdependence, but rather invokes the cultural notion of “eating as independence” so pervasive in American culture and thereby reinforces their disabled status.

Food Choice

The idea that there are certain foods that are “kids’ foods” and other foods that are reserved for, or preferred by, adults is not found in every culture. However, in cultures where this distinction exists, this symbolism is another way that disabled people can claim an adult status or, conversely, be treated as children. As noted above, disabled people are considered dependent, a quality often associated with children, and often treated as perpetual children, or childlike, even once they reach biological ages associated with adulthood. As an example, many adults – with various types of impairments, from blindness to post-polio syndrome – report being offered sweets, a gesture normally reserved for young children (Finger 2007, Gerber personal communication) and a gesture that reinforces the notion of disabled people as dependent(s). Similar examples exist of disabled people wanting or being offered all the accoutrements of a child’s birthday party, including party hats and frosted cupcakes, even when all other adults present are served different types of desserts (Davies 2007). (See also “► [Taste, Distaste, and Food.](#)”) Likewise, controlling access to candy and other snacks particularly during adolescence and for “transition-aged” youth can become an area of

conflict between young disabled people and their parents or caregivers. Having culturally and age-appropriate foods matters because they shape boundaries of inclusion and exclusion. Given the importance of sociality that occurs around eating, issues of food choice are not inconsequential. Likewise, being able to choose what one wants to eat, when, and with whom is an important aspect of independence and one’s self-identity.

The issue of food “choice” intersects with impairment in other ways. For example, some food “choices” are not really choices at all, but a necessary accommodation to a particular and/or non-visible impairment. People with diabetes, depression, irritable bowel disorder, chronic fatigue syndrome, multiple chemical sensitivities, celiac disease, and food allergies, among other conditions (see also “► [Food Allergies: Ethical Issues](#)”), may have dietary restrictions that appear as “choices,” but which dramatically impact one’s health and well-being. To frame food decisions as “lifestyle choices” belittles the reality that many disabled people face. It also raises questions about how dietary preferences are accommodated or, rather, which ones are and which ones are not, in both public venues and private dining settings. Ethically, it further raises issues about inclusion of disabled people in the sociality of eating. That is, eating practices and limited food choice can be forms of “culinary exclusion” that prevent disabled people from reaching adulthood status, participating in social events, or acquiring full cultural citizenship.

Power and Abuse

(See also “► [Punishment and Food.](#)”)

Since access to food, control over food choice, and help eating is balanced with a need for assistance for many disabled people, it is often, unfortunately, also a site of abuse. Control over food is a form of power that, in the extreme, serves as a way to oppress people and, in less extreme forms, perpetuates the infantilization of disabled people. Although prevalence data is rare, there is evidence suggesting that both forced feeding of and the withholding of food to disabled people occur with regularity. It has been most well

documented among institutional care settings but is beginning to be recorded among group home and assisted living facilities as well (e.g., Moyer 2007; Taylor and Bogdan 1998). It certainly also occurs among personal relationships, with feeding by both paid and unpaid caregivers. Both first-person and ethnographic accounts have highlighted the range this abuse takes: from withholding “specialty items” brought by family members to using food as leverage to “correct” behavior issues, to locking refrigerators and kitchens “after hours,” and to outright theft, starvation, and more. It is particularly disturbing from an ethical standpoint that so much of the systematic “food abuse” occurs to people who are the least powerful to do something about it, such as people with cognitive impairments living in institutional settings. The examples provided are reminders that it is not only people with motor impairments who need assistance eating and who are subject to food abuse. Nor is this issue exclusive to disabled people, as older adults in institutional care and living at home have reported being denied sufficient food.

Control over food is a form of power and an important and under-recognized site of disability abuse.

However, food has also served as a site of resistance, such as hunger strikes and food riots. (Note: hunger strikes can also create impairment.) (See also “► [Fasting](#)”; “► [Food Riots, Historical Perspectives](#).”)

Food Acquisition and Access

“Access” means different things to the disability community than it does to food scholars. Most obviously, it has come to be synonymous with physical accessibility for disabled people (e.g., Is there a ramp? Will items in the market be placed low enough on shelves to be reachable? Are the aisles wide enough to accommodate the use of a powerchair and service dog?) (See also “► [Grocery Store Design](#).”) The goal is to provide universal access: building physical environments that permit the most access to the most people, following principles of universal design. This would apply to the acquisition of food in markets, the ability to dine in

restaurants, and the “visitability” of private homes. “Accessible design” and “aging in place” guidelines have architectural specs that include lower kitchen counters to accommodate wheelchair height. A broader understanding of physical access might also include alterations to lighting for people who are lip reading or using sign language and to noise levels for people who rely primarily on auditory cues. Accessible design guidelines, however, have been less commonly applied to the domain of social participation. Buffets, for example, are notoriously difficult to navigate, especially for people who use support canes and crutches and for people who are visually impaired.

The section on food security above highlights some of the issues that disabled people face in acquiring food. Like many people with limited means, disabled people often rely on public transit to navigate their local food environment, although they do so with added complexity, such as using a long cane or guide dog in addition to their groceries. Moreover, much public transit is only somewhat “accessible.” Truly accessible transit remains a huge problem for mobility-impaired persons. Having fresh produce on market shelves is not considered “available” from the consumers’ point of view of their local food environment, if they cannot get to it.

Mobility Versus Motor Impairments

The WHO’s International Classification of Functioning, Disability, and Health, or ICF, (www.who.int/classifications/icf/en/) distinguishes between “impairments” (characteristics of body structure and/or functioning) and “activities” (social behaviors). Accordingly, “mobility” means relating to physical activity and social participation, whereas “motor impairment” refers to bodily movement. However, contemporary culture conflates “motor” with “mobility” to the extent that, in common parlance, these terms are used somewhat interchangeably. Yet they mean very different things. For example, people with motor impairments may need assistance eating (see above). But many more people have mobility impairments and not just wheelchair users. For example, people with cognitive

impairments, brain injury, or dementia may have difficulty following directions or forget how to get where they are going. People with communication, language, or speech impairments may have trouble asking for directions, if they become lost. People with psychiatric impairments may find leaving the house incredibly difficult, if not impossible. The field of blindness has an entire profession (i.e., Orientation and Mobility) to teach people with visual impairment how to get from Point A to Point B. In fact, all but the seasoned pedestrian may have mobility limitations when navigating dense streetscapes with heavy traffic and no sidewalks. In terms of food acquisition, it is important to distinguish between motor and mobility impairments, as both the problems and solutions may differ. Likewise, food scholarship needs to recognize that “access” has to include more than just physical access for wheelchair users. (See also “► [Food and Place](#).”)

Identity

“Access” also means many other kinds of access beyond the physical, built environment. It also means access to the full range of institutions, roles, and identities available in a given society, or what anthropologists consider cultural citizenship. And theories of identity are tied to theories of consumption, perhaps nowhere more clearly than regarding food and eating. (See also “► [You Are What You Eat](#).”) Food has become a new marker of class status (i.e., what one can afford to eat and where is understood as a reflection of one’s taste and character). (See also “► [Taste, Distaste, and Food](#)”; “► [Food and Class](#).”) Likewise, as food has become central to consumer-based experiences in popular culture, it also generates new, elite identities, where taste becomes laden with moral superiority (e.g., vegans, “foodies”). (See also “► [Virtue Theory, Food, and Agriculture](#).”) There is a form of moral value that comes with being able to claim these identities that is out of reach to many disabled people. These elite identities are another form of culinary exclusion (i.e., who can afford to buy local, organic, and fair trade) that reinforces the social position of disabled people. (See also “► [Fair Trade in](#)

[Food and Agricultural Products](#)”; “► [Public Institutional Foodservice](#).”)

Note: there are members of the disability community who are vegans for political (as opposed to health) reasons, as they make the connection between the treatment of animals and the treatment of disabled people (e.g., Taylor 2011). The parallel is not based on being treated poorly, as animals, nor from being “trapped” in a disabled body, like animals in a cage, but centers on a critique of an oppressive, capitalist values system that designates certain bodies as normal (and hence capable of labor), others as broken, and some as acceptable sources of food. (See also “► [Animal Welfare: A Critical Examination of the Concept](#)”; “► [Meat: Ethical Considerations](#).”)

Inclusion and Exclusion

A broader definition of access raises the questions about who does not have, metaphorically and literally, a seat at the table. For example, people might not be deaf enough to need a hearing aid or have learned to sign, but nor do they hear well enough to participate actively in a dinner table conversation. This would include many people who have difficulty hearing because of room acoustics or age-related hearing loss. Similarly, people who are not blind enough to carry a white cane or use a guide dog may still have difficulty recognizing colleagues at a restaurant or social event. Likewise, people who “express themselves in non-normative ways,” such as those with speech impairments, those on the autism spectrum who may not follow sarcasm, and those with psychiatric impairment (sometimes considered “eccentric,” “weird,” or “a little off”), are often not invited to the table. These are examples where discourse serves as an ideological barrier to inclusion and sociality.

Culturally acceptable boundaries around inclusion and exclusion regarding food increasingly define who and what is considered disabled.

Thinking through the notion of “access” complicates the understanding of “food-related” impairments. Moreover, thinking about disability from a social model perspective shifts the focus of the “problem” from the person to the environment.

Summary

Societies around the globe structure inclusion/exclusion, citizenship, and personhood through rules about food and eating, and scholarship should examine ways in which local and global food systems and their politics and proscriptions highlight the very cultural nature of “disability.” There is theory both within and beyond Disability Studies that emphasizes interdependence over independence (see, e.g., Heldke 2009). Likewise, Hiranandani (2009) ties disabled people’s well-being to the larger food sovereignty movement, arguing that only by working together and improving circumstances for the most disenfranchised sectors (i.e., disabled people) can all people’s well-being be improved. Other research, such as that by UK’s Leonard Cheshire Disability and Inclusive Development Centre, is beginning to explore agriculture as a component of livelihoods for disabled people in urban slums and rural settings and the constraints and barriers they face (see <http://www.ucl.ac.uk/lc-ccr/ccdrp/projects/riu>). This is important research that will also measure the effect of home gardens on disabled people’s nutritional status and the availability of food in their households. Beyond these few works and the others discussed above, there is little scholarship on disability – especially the social model of disability – within food studies. Therefore, this summary focuses on directions for future research.

There needs to be work that defines the scope of the field. Statistical data about the global population of persons affected by both disability and food insecurity is needed as is work that highlights the affect of a global, transnational economy on food security and disability. More cross-cultural research would be incredibly helpful.

Given the cultural and biological importance of food – which includes nearly every social encounter from the business lunch to networking opportunities and to ritualized and religious events – people are financially and socially disadvantaged by an inability to “break bread” together. Future research should measure the financial and social loss that results, as well as the impact of this discrimination in different

settings, according to a variety of demographic variables across disability, such as gender, ethnicity, and obviously, class. It should also explore the political conditions that structure these situations.

Scholars might be interested in further considering the impact that a food-centric perspective can have on topics important to Disability Studies, such as:

- The politics of end-of-life care, G-tubes, and food refusal
- The construction of unpaid, nurturing work surrounding assisted eating and food preparation as “care”
- How impairments alter social and cultural aspects of “etiquette” about eating
- Implications of disability-related dietary restrictions on social acceptance
- Expanding food choice for people living in group homes and institutions
- Ways visitability, access, and independent living are altered by a concentration on food

At the same time, food studies scholarship can also benefit by expanding research to include a disability perspective on a number of mainstream issues. For example:

- How global, capitalist approaches to food production, distribution, packaging, and cooking shape “bodies” around the world, including the construction of disabled bodies. How are ideas of “naturalness” transferred from ideas about food to ideas about bodies (or vice versa) and what are the implications for disability?
- How social mores and stigmas around eating etiquette affect who is considered disabled around the globe. How are relationships, expectations, and choices around food contested and negotiated by disabled people?
- Ways in which the “gentrification of taste” affects certain segments of the population, such as people with severe allergies; people who use gastrointestinal tubes to eat; people who receive “disability benefits” and therefore have limited income; and others.
- Cultural analyses that focus on the artifacts of “foodie culture” and its targeted audience, to examine among other things whether these

products are limited to certain types of bodies, are accessible to all bodies, or create new forms of disablement.

- Are community-supported agricultures groups (CSAs) and other local forms of food sovereignty accessible to and inclusive of disabled people? How can food systems be made more accessible to people with all kinds of impairments? (See also “► [Community-Supported Agriculture](#).”)

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Ecofeminist Food Ethics

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Synonyms

Animal liberation; Biotechnology; Ecological feminism; Global agricultural development; Human edibility

Introduction

Ecofeminism rose to prominence in the 1980s as an intersectional offshoot of academic feminism

and the social justice and environmental movements of the 1960s and 1970s. It is notoriously resistant to succinct definition. Various called “ecofeminist philosophy,” “ecological feminism,” “feminist environmentalism,” and “critical feminist eco-socialist analysis,” ecofeminism is not a monolithic discipline but an assemblage of manifold feminist approaches to diverse ecological problems (Gaard 2011, p. 38). There are at least as many perspectives within ecofeminism as there are within feminism, and not all texts justifiably described as ecofeminist are so labeled by their authors. In most cases, the common thread is the assumption that there is an isomorphic relationship between the conceptual structures underlying the domination of women and the domination of nature. In her classic essay “The Power and Promise of Ecofeminism,” Karen Warren argues that these structures are supported by the “logic of domination,” a mechanism that, on the basis of patriarchal and dualistic “value-hierarchical thinking,” authorizes and maintains the subordination of the hierarchically inferior by the hierarchically superior (e.g., masculine/feminine, human/nature); while the attribution of inferiority is often but not necessarily objectionable in itself, the logic of domination is problematic because it assumes this attribution to be a sufficient premise for subordination (Warren 1990, p. 128). Thus, in ecofeminism there is a critical emphasis not only upon specific cases of oppression but also upon the structure of oppression itself. This emphasis gives rise to a frequently foregrounded “opposition to all forms of oppression”; integrated within its analyses there is often critique of other forms of injustice, e.g., speciesism, colonialism, ethnocentrism, racism, classism, and heterosexism (Plumwood 2000, p. 287). (For a historical overview of ecofeminism, see Cuomo 1996; Gaard 2011).

Some contend that in the last decade, ecofeminism has become somewhat passé in the wake of accusations of essentialism from other feminists (Gaard 2011, pp. 26–7). However, as ecofeminist Greta Gaard argues, these accusations myopically focus on those early forms of cultural ecofeminism that propose an uncritical binary value reversal of feminine goddess spirituality over

patriarchy, thus unfairly neglecting “ecofeminism’s diversity of argument and standpoint” (Gaard 2011, p. 31). In addition to its ongoing relevance to the still deepening ecological crisis, ecofeminism is particularly important in the context of increasing feminist interest in animals and food, each topics of recent or upcoming special issues of leading feminist journals *Hypatia* (27.3 “Animal Others,” 2012) and the *International Journal of Feminist Approaches to Bioethics* (8.2 “Just Food,” 2014).

This necessarily selective essay aims to illustrate the vast stylistic and thematic diversity of ecofeminist approaches to food ethics. There follows a discussion of three important approaches: (I) Vandana Shiva’s postdevelopment ecofeminist critique of global industrial agriculture and biotechnology; (II) vegetarian ecofeminism’s critical perspectives on mainstream animal liberation, culminating here in Val Plumwood’s synthesis of key internal debates; and (III) Eva-Maria Simms’s recent phenomenological analysis of the edibility of the maternal body – a new area in ecofeminist thinking about food – and its implications for our orientation to the environmental impact of food choices.

Ecofeminism and Global Agricultural and Biotechnological Development

Vandana Shiva’s ecofeminism is a multidisciplinary, activism-oriented theory engaged at the level of the global politics and economics of industrial agricultural development. Her approach grows from her lifelong connection to nature and to food production in Northern India. Raised in the Himalayan foothills by a farmer mother and conservationist father, she involved herself as a young student in the 1970s with the women of the Chipko movement, the original tree huggers. While subsequently earning degrees in physics and in the philosophy of physics, she became concerned about the health and environmental effects of nuclear radiation and other technologies. This concern led her to launch in 1982 the Research Foundation for Science, Technology, and Ecology, which seeks to put research at

the service of grassroots movements. One of her major projects with the foundation was to establish, in 1991, the organic farming organization Navdanya (“Nine Seeds”) in order to promote food security in India and, more specifically, to set up local seed banks across the country as a way to safeguard the diversity of India’s biological and cultural resources against corporate encroachment.

Throughout her prolific written work, which integrates this rich background of life experience, Shiva proposes a multi-systems critique of global agricultural and biotechnological development in India and the Global South. Informed by geology, sociology, plant physiology, and economics (among other disciplines), and deploying ecofeminism’s sensitivity to the interconnections among forms of oppression, she argues that such development creates, in the same gesture, the material oppression of nature and humans, especially woman. In her critical analysis, problems of food security, environmental degradation, agricultural labor autonomy, and economic and cultural colonization are understood as intertwined phenomena.

Development as Maldevelopment and Gender-Based Ideology

At the core of Shiva’s classic text *Staying Alive* (1989) is the claim that the purportedly postcolonial Western “development” paradigm is in fact a further advancement of colonialism. Development, she says, is really “maldevelopment”: in creating wealth for the developers, it creates poverty for the developed (Shiva 1989, p. 5). The hidden costs of such development are borne primarily by nature and by women, who are, as Shiva points out, the primary food producers in a clear statistical majority of cases in the rural Global South. Distinguishing “culturally perceived poverty” from “real material poverty,” Shiva argues that what developmentalism perceives as poverty is in fact subsistence living, a practice in which (typically) women have traditionally “partnered” with nature’s productivity to provide food in a way that “ensures the sustainability of sustenance” (Shiva 1989, pp. 9, 45). The aim of

subsistence living is not surplus but just enough for healthy living. Falsely identifying this “just enough” as poverty in need of rescue, and replacing traditional methods with those of large-scale, profit-driven agriculture, development creates “real material poverty.” Land and water resources are diverted from sustenance needs and channeled into the production of cash crops and other market commodities. Where a harmonious relationship between nature and food producers once yielded adequate sustenance for survival, there came famine, divestment of traditional land-use rights and economic autonomy, rural impoverishment, massive debt to colonial lenders, damned rivers, and soil erosion.

Of particular concern to Shiva is developmentalism’s denigration of the traditional empirical knowledge of woman farmers, whose sustainable methods are sensitive to nature’s cycles and interconnectedness. Developmentalism imports a “gender-based ideology,” she says, that relies upon a “fragmented, reductionist, dualist perspective” (Shiva 1989, pp. xv, 5). This perspective “violates the integrity and harmony of [humans] in nature and the harmony between men and women” by categorizing nature and women as passive, compartmentalizable resources (Shiva 1989, p. 5). Shiva writes:

The forest is separated from the river, the field is separated from the forest, the animals are separated from the crops. Each is then separately developed, and the delicate balance which ensures sustainability and equity is destroyed. The visibility of dramatic breaks and ruptures is posited as ‘progress’. Marginalized women are either dispensed with or colonized. Needs go unfulfilled, nature is crippled. (Shiva 1989, p. 45)

Colonization of Seed

For Shiva, the compartmentalizing tactics and renewed colonialism of developmentalism reach a peak in the commodification and colonization of seed itself, “the first link in the food chain” (Shiva 1989, p. 115). Here, developmentalism strikes the heart of nature and human life. The so-called Green Revolution, claimed by its proponents to have flourished in Punjab’s agricultural economy and subsequently elsewhere in the Global South, was supposed to have made great

advances in food security for the ever-increasing population thanks to Norman Borlaug's Nobel Prize-winning hybridized, high-yielding "miracle" seeds (Shiva 1989, p. 115). However, in *Staying Alive* and *The Violence of the Green Revolution* (1991), Shiva initiates a lifelong critique of this biotechnological innovation and the multinational corporate tactics by which it was deployed, such as privatizing seed through intellectual property rights. "The social and political planning that went into the Green Revolution aimed at engineering not just seeds but social relations as well," she says (Shiva 1991, p. 16). Whereas the peasant women of India had "over millennia" safeguarded "the self-reproducing character and genetic diversity of seeds," the incursion of patented, nonrenewable seeds transformed sustainable local farms into foreign-controlled factory fields for monoculture crops. This event exacerbated the economic subservience of less wealthy nations, both to Western corporate "innovators" and to the World Bank loans that subsidized seed distribution (Shiva 2009, pp. 24, 21, 22). If peasant farmers now must purchase new supplies of the nonrenewable hybrid seeds each year, then the miracle of "miracle seeds" is really a "commercial miracle" that draws the Global South deep into the Western agribusiness market (Shiva 1989, p. 116). Thus, as seed is divested of its natural fertility, women farmers are divested of their traditional role as stewards of biodiversity and sustainability. Moreover, the toxic pesticides and fertilizers required by hybrid seeds devastate native plants and desiccate soils.

Prakriti: The Feminine Principle

Thus, for Shiva, the operative assumption behind the tactics of agricultural and biotechnological "maldevelopment" is that nature and women are unproductive, that "'production' takes place only when mediated by technologies for commodity production, even when such technologies destroy life" (Shiva 1989, p. 3). As a solution, she proposes the recovery of Prakriti, the "feminine principle" of the "ancient [Hindu] worldview," which recognizes nature and women as the "creators and sustainers of life" (Shiva 1989, pp. xv, 5).

As distinct from the alleged Western categorization of femininity and nature as passive, Prakriti is a creative "living force that supports life," the very source of the biodiversity and self-renewability that Borlaug's hybrid seeds deny (Shiva 1989, p. xv). Participation in Prakriti, which ultimately "transcends gender," is equally open to men, but when "productive" man is "alienated" from Prakriti's original productivity, the primal activity of life is reduced to hypermasculine "domination" of man over nature and women (Shiva 1989, pp. xv, 5). For Shiva, maldevelopment is one symptom of such a reduction. Taking inspiration from the Chipko women, she locates in Prakriti an alternate "concept of economics as production of sustenance and needs satisfaction" that challenges the "Western concept of economics as production of profits and capital accumulation" (Shiva 1989, p. xv). Exposing "what patriarchy sees as productive work" to be highly *destructive*, Prakriti shows life itself to be the source of productivity (Shiva 1989, p. 8). From the Prakriti perspective, nature does not oppose economics, but *is* economics at its origin.

Shiva's use of Prakriti has been criticized as expressing a naïve or essentialist interpretation of the feminine and, in its application to the experiential knowledge of peasant women, as promoting an uncritical standpoint epistemology. However, as Shiva's critic Ariel Salleh points out, Prakriti retains some strategic value if taken as an "oppositional term in a process of ideological deconstruction" grounded not in speculation about essences but in commonly shared experiences (Salleh 1991, p. 212). In this light, one may see Prakriti as a challenge to developmentalism's "Cartesian split between human labor and nature" that arises from within the perspective of Indian women farmers' traditional "partnership" with nature (Salleh 1991, p. 214).

Vegetarian Ecofeminism and Animal Liberation

Whereas Shiva's postdevelopment ecofeminism offers multidisciplinary analyses of the

interconnected oppression of nature and women in the Global South, the area of ecofeminism referred to as “vegetarian ecofeminism” or “animal ecofeminism” engages specific philosophical problems of animal liberation originally raised in the context of applied ethics and largely ignored by early ecofeminists. According to Gaard, the “fundamental insight” of vegetarian ecofeminism is that speciesism – the arbitrary preference of one’s own species over another in a manner analogous to sexism or racism – is a “form of oppression that is interconnected with and reinforcing of other oppressive structures” (Gaard 2000, p. 206). To exclude species oppression from ecofeminist theory is both to risk incomplete analysis and to contravene ecofeminism’s “activist and philosophical foundations” (Gaard 2002, p. 130). Thus, despite opposition from other feminists (e.g., George 1994; Stange 1997), vegetarian ecofeminists use ecofeminist rubrics to address problems of animal liberation such as industrial animal food production, hunting, social conceptions of meat, and the reconciliation of vegetarianism with questions of social and environmental justice. The contributions of three important vegetarian ecofeminists, Carol Adams, Lori Gruen, and Val Plumwood, are discussed below.

Bringing Animals into Ecofeminism

The radical-cultural feminist Carol Adams was among the first feminist writers to bring together animal liberation and ecofeminism (also see Kheel 1991). Known for *The Sexual Politics of Meat* (1990), which aims to highlight the twin cultural phenomena of the sexualization of meat consumption and the animalization of women, Adams advances ecofeminist arguments for vegetarianism and veganism in “Ecofeminism and the Eating of Animals” (1991) and again in “Why Feminist-Vegan Now?” (2010). Identifying a blatant disregard for animal welfare among early ecofeminists, whose attention lay primarily with the earth and its ecosystems, Adams locates several perspectives *within* ecofeminism that imply vegetarianism and ultimately, for Adams, a strict universal veganism (Adams 1991, pp. 125, 141). Four are discussed here.

Corporeally Imaginative Identification

Recognizing the links between the domination of women and nature, and heeding Warren’s ecofeminist call to critique the underlying hierarchical “logic of domination,” Adams proposes a “radical feminist epistemology” that produces an imaginative “identification” with the bodies of animals as victims of exploitation (Adams 1991, p. 128). Feminists recognize and identify with the painful experience of being objectified and instrumentalized as women – as “pieces of meat,” for example. For Adams, such recognition undercuts the human/animal hierarchy and establishes compelling sympathies toward animals as living sentient beings. Such sympathies preclude any need to “accede rights” to animals and render abhorrent the idea of instrumentalizing animals for food (Adams 1991, p. 129).

Reintegration of the Ecological Consequences of Meat-Eating

Adams argues that if ecofeminists oppose the domination of the earth, then they must also oppose meat production, which has measurable and well-known consequences for the health of the natural environment (e.g., the high demand on water and energy in raising and distributing livestock; large-scale topsoil erosion caused by grazing). The frequent conceptual isolation of meat-eating from its detrimental consequences, says Adams, results from two of the reductive, patriarchal dualisms that ecofeminism contests, namely, consumption/production and production/maintenance (Adams 1991, p. 130). The dismantling of these dualisms belongs already to the ecofeminist mandate. Ecofeminism thus implies that the consumption of meat as a product and economic “good” should not be viewed as separate from or more highly valued than the conditions of its production (which entail suffering and death for animals and frequently poor conditions for workers, who are often women) or the ongoing maintenance required to sustain the land that supports the meat industry.

Social Construction of Bodies

It might be objected that the basic ecofeminist (and environmentalist) premise that humans are natural

beings implies that our meat-eating is “naturally” justifiable. Adams counters that, insofar as it is a critique of the structures of oppression, ecofeminism is positioned to support vegetarianism by means of a critical examination of the modes of subjugation involved in the social construction of meaning. She points out that our everyday language obscures and therefore perpetuates hierarchical and oppressive ideologies of both women and animals. As the term “battered women” reflects and sustains an “ontologization” of women’s bodies as sexually consumable, so the term “meat” reflects and sustains an ontologization of animal bodies as edible (Adams 1991, p. 136). In this way, women and animals are positioned as objects, thus concealing the subject and perpetrator of violence and rendering the “being” of women and animals as what Adams calls an “absent referent.” The violence inflicted upon women and animals is tacitly interpreted as something that is part of their nature. “Live animals are the absent referents in the concept of meat. The absent referent permits us to forget about the animal as an independent entity, . . . to resist efforts to make animals present, . . . to allow for the moral abandonment of a being” (Adams 2010, p. 304). To the extent that ecofeminism is attentive to the oppressive hierarchies obscured by language, it is in a position to resist the sociolinguistic construction of animals as meat and humans as carnivores.

Critique of Autonomy

In response to the potential objection that an ecofeminist call for vegetarianism would violate a person’s autonomy in choosing what to eat, Adams suggests that the ecofeminist eschewal of the reductive individualism of rights-based thinking invites us to think of ourselves in relationship to animals – by, for example, identifying with and thus engendering solidarity with animals. For Adams, to eat animals is to instrumentalize them and to thus affirm and propagate the dualistic ideology of domination that ecofeminism aims to eradicate. The more appropriate kind of autonomy is achieved, she suggests, by “acting independently of such ideology” (Adams 1991, p. 140).

The Ecofeminist Critique of Mainstream Animal Liberation Theory

While Carol Adams has offered a critical reappraisal of ecofeminism in order to include animal liberation within its agenda, other vegetarian ecofeminists have critiqued and offered corrections to the influential animal liberation theories of Peter Singer and Tom Regan, each of which prescribes vegetarianism or substantial limitations on meat-eating (see Gruen 1993; Kheel 1996; Plumwood 1991; Luke 1995; see also Donovan 1990). In “Dismantling Oppression: An Analysis of the Connection Between Women and Animals,” ecofeminist Lori Gruen takes Singer and Regan to task for their exclusive emphasis on reason and individualism in moral deliberation. Briefly stated, Singer’s utilitarian defense of nonhuman animals argues that since *any* sentient being can suffer and thus has “interests,” in moral deliberations these interests must be given “equal consideration” (Singer 1975, p. 8). Proceeding otherwise would perpetrate speciesism. Regan’s rights-based deontological approach, by contrast, takes self-consciousness as the criterion of moral consideration. All “subjects-of-a-life,” or self-conscious beings, possess inherent value, which admits no comparison and is therefore always possessed equally (Regan 1985, p. 23). Thus, even if, like human infants or people with a serious developmental disability, their moral agency is absent or lacking, all self-conscious animals (adult mammals, at least) are entitled to be treated equally as moral patients on the basis of their inherent value, which ought to be protected by a right.

Although Gruen generally supports the goals of animal liberation theory, she detects in both Singer and Regan a dubious privileging of reason over emotion: “reason – not emotion – compels us to recognize the equivalent value of certain animals,” says Regan, and “the application of these [utilitarian] principles [to animals] is demanded by reason, not emotion,” says Singer (Regan 1985, p. 24; Singer 1975, pp. ix–x). For Gruen, this position is problematic for two inter-related reasons. (1) The reason/emotion dichotomy is a “normative dualism that gives rise to the logic of domination” and thus permits “the

continued conceptualization of hierarchies in which a theoretically privileged group or way of thinking is superior” – in this case, reason (Gruen 1993, pp. 79–80). The obvious problem here, Gruen says, is that “by establishing superiority in theory the groundwork is laid for oppression of the inferior in practice” (Gruen 1993, p. 80). Thus, the rights and utilitarian principles invoked by Regan and Singer serve as little more than checks on an already hierarchical system that values humans over animals and reason over emotion; nature’s interconnectedness goes unacknowledged and the place of animals must be annexed by argument. (2) In its focus on reason, claims Gruen, traditional animal liberation theory is a methodologically incomplete theory. Ecofeminism, by contrast, “recognizes sympathy and compassion as fundamental features of any inclusive, libratory theory” (Gruen 1993, p. 80). Not only are these emotions strategically necessary for “undoing oppression in both theory and practice,” but moral deliberation about animals requires “the emotional force of kinship” – something that arises, Gruen suggests, from within the ecofeminist experience of the earth as a nonhierarchical community. To the extent that the theories of Singer and Regan remain abstract, they perpetuate “our removal from the animals themselves” and fail to motivate attitude change (Gruen 1993, p. 79).

Plumwood’s Integrated and Contextual Moral Vegetarianism

In her approach to questions of vegetarianism and veganism, Australian environmental activist and feminist philosopher Val Plumwood (1939–2008) seeks to reconcile the often conflicting perspectives of animal liberation theory, holistic ecological theory, feminism, and social justice with a particular sensitivity to problems of ecological alienation, anthropocentrism, ethnocentrism, and activist strategy. In her classic text *Feminism and the Mastery of Nature* (1993), Plumwood argues for a version of the ecofeminist thesis articulated by Warren. She identifies a fundamental reason/nature dualism underlying a basic “master model” that both (1) interlinks the oppression of whatever groups this dualism

allows to be constructed as inferior – animals, women, and indigenous people, for example – and (2) denies “dependency and community” in our relations with others and with nature (Plumwood 1993, pp. 23, 194).

The Critique of Moral Extensionism

It is from this critical perspective that Plumwood, like Gruen, faults conventional vegetarian and animal liberation theories. She shares Gruen’s concern about the emphasis on “separation and autonomy” in rights-based theories such as Regan’s and the corresponding exclusion of “less dualistic moral concepts” (e.g., “respect, sympathy, care, concern, compassion, gratitude, friendship, and responsibility”) (Plumwood 1991, p. 8). But Plumwood also develops a critique of moral extensionism as such, the status quo practice in academic environmental ethics in which traditional ethical theories are applied or “extended” to accommodate nonhuman beings and entities. Such a practice, she says, is an “approach of minimal departure from the rationalist foundation of liberal humanism” (Plumwood 2000, p. 286). In its focus on regulating the acceptance of nonhuman animals into the sphere of moral consideration, typically “entirely on the basis of their similarity to the human,” moral extensionism neither considers the viability of anthropocentric ethics and epistemology for nonhuman moral patients nor asks whether there might be modes of attention and responsibility that are preempted by the exclusionism that remains in any extensionist project (Plumwood 1998, p. 407). Any redrawing of the human/nature or human/animal boundaries implicitly reaffirms these boundaries, which ultimately serve to guard what Plumwood calls the “hyperseparation” from nature that authorizes attitudes of human superiority (Plumwood 1998, p. 406).

Humans as Food

In her famous essay “Being Prey,” which viscerally contradicts the “hyperseparation” latent in moral extensionism, Plumwood describes and interprets her near-death encounter with a predatory crocodile in Australia’s Kakadu National Park in 1985. Her account offers

a surprising and profoundly sensitive expression of the sort of sympathy, kinship, and imagination she, Gruen, Adams, and other ecofeminist philosophers wish to introduce into vegetarian and animal liberation theory. Plumwood's recollection of this horrific episode, in which the crocodile tore into the flesh of her legs and torso as it dragged her into a "death roll," resonated for her on a critical register. As the predator had serrated her body, so her reflection on this experience "ripped apart" her "subject-centered," "from the inside" view of the world – the same view that underlies the project of moral extensionism. Revealing a decentered view "from the outside," this was an experience of *being* food, of *being* edible (Plumwood 1996, pp. 42, 35). Plumwood describes its potential for moral conversion thus:

I glimpsed beyond my own realm a shockingly indifferent world of necessity in which I had no more significance than any other edible being. The thought, *This can't be happening to me, I'm a human being, not meat, I don't deserve this fate!* was one component of my terminal incredulity. (Plumwood 1996, p. 42)

In a subsequent version of the same essay, she writes,

It was a shocking reduction, from a complex human being to a mere piece of meat. Reflection has persuaded me that not just humans but any creature can make the same claim to be more than just food. We are edible, but we are also much more than edible. Respectful, ecological eating must recognize both of these things. (Plumwood 2002)

The status quo subject-centered concept of human identity dualistically positions humans as external and hierarchically superior to the food chain, "not as part of the feast in a chain of reciprocity but as external manipulators and masters of it" (Plumwood 2002). For Plumwood, this dualism enables the radical discontinuity between "the outrage we experience at the idea of a human being eaten" and our quotidian experience of eating animals (Plumwood 2002). "We may daily consume other animals by the billions, but we ourselves cannot be food for worms and certainly not meat for crocodiles" (Plumwood 1996, p. 42). On the other side of this "dualistic vision of human mastery of the planet" in which

we humans are predators but never prey, the crocodile is demonized as a vile beast or, in the "masculinist" interpretation that appeared in Australian tabloids, as a monstrous male rival attacking a helpless woman awaiting rescue from the male hero (Plumwood 1996, pp. 42, 40). (*Crocodile Dundee* was filmed in Kakadu shortly after Plumwood's encounter).

Violently refuting this dualism, Plumwood's story of crocodile predation on a human portrays a transformation of incredulity into edibility. Such transformation constitutes the basis of an imaginative ethical sympathy: like the crocodile, the human, too, experiences itself both as an animal who eats and as an edible animal with a claim to be more than edible. Plumwood's remarkable experience, which her story allows others to repeat imaginatively, invites a non-subject-centered view of self – a view of the self "from the outside" (Plumwood 1996, p. 35). For Plumwood, this view provides a glimpse of ourselves in our "ecological identity," as "part of the food chain, eater as well as eaten" (Plumwood 1996, p. 43). In this way, it opens onto a vegetarian ethic that, in contrast to the minimum change, aloofness and closure implied in subject-based moral extensionism, is rooted in radical sympathy and a felt sense of the continuity of life (Plumwood 1996, p. 44).

The Critique of Adams's "Ontological Vegetarianism"

Having come to see animals as "more than just food," Plumwood condemns "the reduction of animal lives in factory farming systems that treat them as living meat" (Plumwood 2002). However, she proposes no sweeping condemnation of predation or meat-eating such as we find in both mainstream animal liberation theory and in Adams's ecofeminist vegetarianism. In place of what she calls Adams's "ontological vegetarianism" or "ontological veganism". Plumwood thus advocates a *contextual* moral vegetarianism. While Adams and Plumwood agree that animals deserve moral consideration, Adams's ontological veganism adds the premise that "nothing morally considerable should ever be ontologized as edible or as available for use" (Plumwood 2000, p. 287).

Plumwood objects to this universalist premise because it supports Adams's characterization of vegetarianism and veganism as a "politics of personal virtue and self-denial" implicitly modelled on sexual abstinence (due in part to Adams's "genderized" account of meat-eating as a mode of masculine sexual aggression) (Plumwood 2000, p. 291). Plumwood sees this characterization as problematic for several reasons. (a) It fosters "highly polarized," "over-individualized," and "vanguardist" interpretations of vegetarianism as "moral purity" that "hinder the spread of vegetarian orientations" and "impede useful intermediate positions"; (b) distracts from the global, neoliberal "economic rationality" at the root of the systematic "atrocities daily committed against animals, especially in the factory farming framework"; and (c) remains insensitive to crucial differences in scale of animal suffering between factory farming and individual and cultural practices such as hunting (Plumwood 2000, p. 291). The neglect of these broader circumstances is further supported, says Plumwood, by Adams's "cultural feminist proclivity to privilege explanations focused on men and masculinity," as well as by her portrayal of her assessment as culturally universal, that is, as "an account of inevitable and timeless ethical features of human predation" rather than as "a culturally specific account of present commodity practices of animal food in certain rationalist-reductionist cultures which often model rational control and enslavement in genderized terms" (Plumwood 2000, pp. 288, 295). In Adams's "genderizing and demonizing" of meat-eating, hunting, and other "predator identities," Plumwood detects a neglect of our ecological embeddedness in the food chain, an ethnocentric dismissal of indigenous food practices, and an "uncritical reversal of western gender ideals" in which "factors other than [contemporary western] masculinity" are largely excluded from the critique of animal domination (Plumwood 2000, pp. 288, 289).

What Plumwood ultimately finds most objectionable in Adams's universalist ontological vegetarianism is its core claim that moral considerability and edibility are mutually exclusive, which implies that to choose to use animals

for food in any way is to deny that they deserve moral consideration. From Plumwood's perspective, this stark dichotomy enables alienated, reductionist attitudes about (a) animal food, (b) food generally, and (c) human ecological embodiment.

- (a) What Adams calls "meat" is a "culturally specific reductionist and commodity category" that deserves to be critiqued and resisted, but, due to her commitment to the edibility/moral considerability dichotomy, Adams crucially fails to acknowledge this cultural specificity (Plumwood 2000, p. 296). As a result, the animal consumption practices of a specific abusive culture "come to appear as inevitable aspects of animal food and human predation and consumption – which of course they are not" (Plumwood 2000, p. 296). In other words, since Adams recognizes no possibilities for animal food other than "meat," she draws a "false contrast" between vegetarianism/veganism and cultural practices of animal reduction and domination, between "no use at all and ruthless use" (Plumwood 2000, p. 298).
- (b) In light of Adams's edibility/moral considerability dichotomy, the status of being food comes to appear as necessarily and universally a debased one, so that food exists in a lower, premoral order and bears no ethical relevance (outside of the initial dualistic decision to exclude it from the order of the morally considerable). However, as Plumwood points out, this idea that "only those beneath ethical consideration can be food" is a significant "reason why factory farming is able to treat those whom we position as food as beyond and outside ethics" (Plumwood 2000, p. 296). Adams's strategy is at cross purposes.
- (c) Conversely, the edibility/moral considerability dichotomy excludes humans from edibility. That is, so long as we conceive of ourselves as morally considerable (as we inevitably do), we deny our edibility, our ecologically embodied participation in the food chain, in the continuity and "exchange of life" in which all embodied beings are food for some other being (Plumwood 2000, p. 299). Such an exclusion

inadvertently reinstates the same dualistic separation of humans from nature and animals that is allegedly at the root of the food practices Adams critiques.

By contrast, applying the ecofeminist critique of dualism to food itself, Plumwood's contextual moral vegetarianism contests the alleged mutual exclusivity of moral considerability and edibility. While Plumwood maintains that "no being, human or nonhuman, should be ontologized reductively as meat," she argues that "we must all, humans included, be ontologized ecologically" as food (Plumwood 2000, p. 298). This ecological necessity grounds the human practice she calls "sacred eating," acknowledging the wisdom in indigenous approaches to food. In sacred eating, we humans are called to gain our food – even plant food – "in such a way as to acknowledge our kinship with those whom we make our food, which does not forget the more-than-food that every one of us is, and which positions us reciprocally as food for others" (Plumwood 2000, p. 303). In this way, Plumwood locates in sacred eating a reconciliation of edibility and moral considerability.

Summary of Vegetarian Ecofeminism Discussion

Three significant contributions of vegetarian ecofeminism have been discussed: Adams's argument that the early ecofeminist focus on the earth conceals and neglects ecofeminism's theoretical resources for vegetarianism and veganism; Gruen's and Plumwood's critiques of the unduly masculine and anthropocentric perspective of mainstream animal liberation theory; and Plumwood's attempt to rectify the alleged failure of both animal liberation theory and vegetarian ecofeminism to integrate concerns about animal welfare with competing concerns about, for example, ecosystem health, the place of humans in the food chain, and the food practices of indigenous peoples. As we have seen, moreover, Adams, Gruen, and Plumwood each advocate for an approach to animal liberation that, like the feminist ethics of care, renews the role of experience, relationality, and sympathy in our approach to moral questions.

Ecofeminism and the Maternal Body

Like Plumwood, Eva-Maria Simms locates great potential for moral imagination within the experience of human edibility. Unlike Plumwood, Simms focuses on a phenomenon that often escapes our notice due not to its rarity but to its ubiquity: matrotopy, the nourishing of the developing fetus and infant via the placenta and breast milk. In her essay "Eating One's Mother: Female Embodiment in a Toxic World" (2009), which takes its theoretical cues both from the phenomenological analyses of intercorporeality proposed by the French phenomenologist Maurice Merleau-Ponty (1908–1961) and Belgian feminist philosopher Luce Irigaray and from a diverse array of recent research in ecology, toxicology, endocrinology, and pediatrics, Simms does not explicitly assimilate her project to ecofeminist goals. However, beginning with the feminist concern that the "androcentric history of philosophy" neglects "female experience" and privileges "independence" and "self-enclosure" in its conceptualizations of self and world (as the Cartesian worldview typifies), Simms's intersectional project introduces the insights of feminist phenomenology of the maternal body into the question of the human relationship to the natural environment (Simms 2009, pp. 267, 276).

Specifically, Simms uses the image of the placenta – the only mammalian organ composed of cells from two organisms – to reposition the human body as both food and ecosystem and to then realign our responsibilities to each other and to the environment regarding the toxins we allow into our bodies. Her project is thus clearly ecofeminist in the traditional sense: granting the essential and inevitable role of metaphor in "creating new ways of thinking," and foregrounding the role of a specifically feminine metaphor in moral imagination, it proposes a critical intervention in the conceptualization of our relation to the natural environment in which the "androcentric" schemata of separation and individuality are countered and corrected by notions of continuity and integration (Simms 2009, p. 267). Yet Simms also expands the ecofeminist project by reflecting the primary concept of ecology – the ecosystem – back

upon the human: as the placental relationship is a metaphor for our relationship to the environment, so the ecosystem is a metaphor for the womb itself.

For Simms, the critical value of matrotopy has two sources: (a) it undermines conventional ideas about the human place in the food chain, and (b) it provides an ethically compelling figure for the thorough ecological integration of the human body.

- (a) Recalling an old yellowing poster of the food chain whose arrows all “pointed at a muscular male silhouette at the top,” Simms claims that such an image “creates the illusion of a closed system that ends at the apex with the super predator who consumes the distillate of all below” (Simms 2009, pp. 264, 273). The reality, Simms points out, is that “man’s” infants are above him on the food chain, for infants’ food is produced by the female human body. The matrotopic relationship, says Simms, thus unseats the human as “the self-owned and self-contained apex of creation” (Simms 2009, p. 264). The female body is “open,” “a conduit for the next generation, a passage for others that stretches through time. There is no hierarchical top of the food chain: woman herself becomes food for her young. She is a link and an integrated element in the chain of those who eat and are eaten” (Simms 2009, p. 264).
- (b) In undermining the hierarchical nature of the food chain, the maternal body not only deposes the general figure of “man” from the top of the food chain but also serves for Simms as an image for the ecological openness of the human body itself. First of all, claims Simms, the maternal body is ecologically open in a biological sense because it is both immediate environment for another body and a conduit for food from the broader environment: “the fetal ecosystem is nested in the ecosystem of the mother’s body, which is nested in the larger ecosystem of the earth” (Simms 2009, p. 273). Thus, as the nutrients the mother consumes in food, water and air are passed along to the infant, whatever toxins are present in this elemental nourishment are similarly passed along (and in fact

are *concentrated* by means of a process ecologists call “biomagnification”) (Simms 2009, p. 266). The extent of the integration of the bodies of mother and fetus is reflected in the placenta, which is a *shared* organ (and not, as physicians believed until the 1960s, an impermeable barrier protecting the fetus from harmful substances). For Simms, the recognition of this corporeal continuity gives rise to a “placental ethics” that does not “stop at the boundary of our skins” (Simms 2009, p. 265). What this means, first of all, is that out of care for their developing babies mothers have a vested interest in avoiding (and perhaps campaigning against) the increasing prevalence of environmental toxins in food, water, and air. On this basis, Simms’s placental ethics provides a rather obvious anthropocentric rationale for the detoxification of our environments and food systems.

And yet, perhaps more importantly, such a placental ethics also provides an analogy through which the human corporeal identity may be ecologized and integrated into the food chain. As the mother’s body is continuous with the infant via the placenta, so the human body is a “pass through” to its surrounding environment:

The substances that we take into our bodies do not stay there. The antibiotic I take for my sinus infection does not end existing as soon as it enters my stomach, even though we prescribe it as if it does. Through digestion, elimination, and our own death we return elements back into the natural environment which are then taken up by other living beings. What is true for mackerel and smelt is also true for us: we are part of the food chain. The ethical call that issues from this insight is the demand to move beyond individualism toward an ecological responsibility for the whole field of being and begin to understand ourselves and act as an integrated part. (Simms 2009, p. 274)

For Simms, the figure of the maternal body reminds us that the human body is not a black box; as mother and fetus are entwined in the placenta, so “the structures of the body are entwined with the structures of nature through air and food” (Simms 2009, p. 276). This analogy therefore suggests a maternal ethics of care for

the natural environment in which the natural and corporeally interconnected care the mother feels for her child becomes interposed in the broader relationship between humans and their environment. As the mother endeavors to become safely edible for her incubating child, so we, too, are asked to become food safe. In short, Simms proposes that the boundaries of the lived human body become relationally and affectively reoriented – maternalized – in order that, in considering the food and drugs we permit into our bodies, it becomes no longer possible to proceed with ecological indifference.

Summary

This entry has traversed a diverse selection of ecofeminist approaches to diverse questions in food ethics. It has also demonstrated unifying threads. In each case discussed, we have seen an emphasis on the interconnections among forms of oppression, a commitment to multidisciplinary methods, and an attentiveness to the critical potential of feminist viewpoints. From the perspective of postdevelopment critique, Shiva diagnoses the socio-ecological problems of global food production in terms of developmentalism's underlying gender-based ideology and elevates the empirical, labor-based knowledge of rural women farmers as a critical counterexample. From the perspective of the ethics of animal liberation, vegetarian ecofeminists address the question of using animals for food by critically engaging ecofeminist insights to broaden and rework the methodologies and conclusions of mainstream animal liberation theories. Val Plumwood attempts to surmount the weaknesses of animal liberation theory and strict vegetarian/vegan ecofeminism by integrating considerations of indigenous food practice and the ecology of the food chain. Finally, from the perspective of phenomenological feminism, Simms locates the edibility of the maternal body as an imaginative resource for reintegrating the human in the food chain and, on this basis, radically expanding our ethical relation to the environmental consequences of our food choices.

Cross-References

- [Agricultural Ethics](#)
- [Biodiversity and Global Development](#)
- [Environmental Ethics](#)
- [Environmental Justice and Food](#)
- [Industrialized Slaughter and Animal Welfare](#)
- [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- [Peter Singer and Food](#)
- [Saving Seeds](#)
- [Vegetarianism](#)

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Economy of Agriculture and Food

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Synonyms

Food regimes; Global food economy; Globalization of agriculture and food; Political economy of agriculture and food

Introduction

Food systems – the web of relations through which human beings organize food provisioning and consumption – are the foundation of all

societies. For most of human history, food systems were organized on a local or regional scale and were deeply embedded in the ecologies and cultures of particular times and places. Today, however, nearly all food systems are integrated, albeit to different degrees, into the international circuits of production and distribution of the capitalist global food economy. Although societies have engaged in long-distance food trade for millennia, the scale, scope, and logic of organization of today's global food economy differ radically from historical patterns. In the global food economy, food producers and consumers are more geographically and socially distant than ever before, new technologies are revolutionizing food production, and the spread of tastes and cuisines is changing diets at an unprecedented rate. While many people rely on the abundance of relatively cheap industrial food produced by the global food system, many others are excluded from the bounty. Millions of people participate in the global food economy as food producers but under radically different conditions based on their place in the “food chains” organized by agri-food companies.

This entry examines how the emergence of a global food economy has given rise to ethical controversies such as hunger- and diet-related diseases, animal cruelty, ecological crisis, and the plight of small farmers. The first section provides some background to the political economy of agri-food systems. Next, the entry outlines the emergence and consolidation of the global food economy and the social and ecological dislocations it has wrought. The final section considers some of the countermovements that articulate an alternative set of social, ecological, and ethical ideals to those of the global food economy.

The Political Economy of Agriculture and Food

Political economy is a social science tradition that analyses the economic realm, in the broadest sense, as a field of social relations of power. Unlike neoclassical economics, political economy does not take for granted that markets and

other economic processes operate according to their own logic. Rather, these processes are shaped by social actors with competing interests, resources, and interpretations of reality. The outcomes of these struggles have consequences for the distribution of resources, the nature and direction of development processes, and the organization and character of other social institutions. There is a normative dimension to most political economy perspectives, which consists of the assumption – sometimes implicit – that social justice demands a broadly democratic control of economic institutions and an equitable distribution of resources.

The political economy of agriculture and food perspective emerged from a critical reappraisal of rural sociology in the late 1970s. At this moment, many scholars considered traditional rural sociology, which tended to focus on the community dynamics of rural life, to be inadequate for making sense of rapid changes occurring in the agriculture sector. In response, a new wave of scholars developed a more critically oriented perspective called “the new political economy of agriculture” (Friedland et al. 1991), which focused on the role of agriculture in capitalist development, the class location of family farmers, the rise of agribusiness, and the fate of family farmers in advanced capitalist economies. Scholars would later broaden this approach by adopting a food systems perspective, which incorporates patterns of food distribution and consumption into the analysis, and by applying it to an international, and eventually global, scale. In general terms, the political economy of agriculture and food perspective sees agri-food system dynamics emerging from the interplay of state structures and policy, markets, and the organized actions of social actors such as farmers, corporations, and consumers.

Just as no society can exist without meeting the food needs of most of its members, the agri-food sector has been central to the development and reproduction of capitalist societies. In capitalist societies, in which food is progressively commodified over time, the food question is largely a function of the purchasing power of social classes in relation to food prices. Likewise,

in a capitalist economy, prices and markets play an important role in shaping agricultural production among commercial farmers. Agriculture has played a somewhat paradoxical role in capitalist development. On the one hand, capitalist development is associated with the declining importance of agriculture in relation to manufacturing and other economic sectors. On the other hand, the industrialization of agriculture and the rise of a capitalist food industry have made the agri-food sector into big business. Agriculture represents about 6 % of global GDP, and worldwide food sales were estimated at \$US eight trillion in 2008 (Clapp 2012, p. 7). Today, agri-food corporations have enormous influence over some food markets and have exerted considerable political influence as well.

State regulation of the food supply goes back centuries, with the British Assize of bread of the thirteenth century, which regulated bread price, weight, and quality, being an early example. In capitalist societies, states have used agriculture and food policy to regulate markets, often in response to the political pressure of class interests such as farmers, working-class consumers, or agribusiness. Farm policies have tended to address some of the distinctive features of agricultural markets: a very large number of sellers (farmers) compared to buyers (food processors), price volatility, the perishable nature of food commodities, the seasonal variability in supplies of some commodities, and the non-elasticity of food demand (i.e., the fact that, past a certain threshold, demand for food does not increase with rising income). Governments have used price supports and farm subsidies, for instance, to meet farm income and rural development objectives or state-mandated marketing bodies to even out the imbalance in market power between farmers and agribusiness. Governments have also regulated key aspects of the food supply, including food prices, safety, quality, and nutrition, with food security being one of the overriding objectives. Over the last few decades, the regulation of agri-food markets and food supplies has become increasingly internationalized with the emergence of institutions such as the United Nations’ Food and Agriculture

Organization, the World Trade Organization (see below), and Codex Alimentarius, a regulatory body charged with establishing international food safety and quality standards.

The accelerating globalization of agri-food sectors has led scholars to recast the political economy framework in global terms. Broadly speaking, the global political economy of agriculture and food poses questions such as the following: How can persistent hunger in a world of plenty be explained? What is to be the fate of global farming classes, especially small peasant farmers in the global South and small and medium family farms in the global North? What role are global corporations playing in the integration, harmonization, and commodification of food systems? How is the global food economy to be regulated? An emerging political economy of *food crisis* has begun to grapple with the recent, deep-seated convulsions of the global food economy, which include price spikes, rising hunger, the climate crisis, and ecological degradation (Magdoff and Tokar 2010). These issues are examined in more detail below. The next section traces the origins and evolution of the global food economy.

The Global Food Economy

Today's global food economy has its earliest roots in the wave of European colonialism that began in the fifteenth century. As part of the colonizing process, European powers appropriated indigenous land and labor for the production of food and fiber. Vast swaths of the colonized world were converted to plantation agriculture producing valuable commodities such as coffee, cotton, tea, sugar, rubber, and spices. This disrupted and disorganized the indigenous social systems, including food provisioning, and radically changed the ecology of the colonized places (Weis 2007). The colonial-era trade created an international division of labor in which colonized zones specialized in raw agricultural products and European states in manufacturing. Over the long term, this specialization created, in some parts of the global South, a dependence on

a narrow range of agricultural commodities for export earnings.

A world market in food *staples* did not emerge until the latter half of the nineteenth century. This only occurred with the massive increase in the international wheat trade resulting from the opening of new farming frontiers in settler-states such as Canada, the USA, Australia, and Argentina. As part of a push for national development, settler-states dramatically expanded their production of wheat, beef, and other food staples for export. In turn, the industrializing states of Europe, led by the UK, turned increasingly to cheap imports of food staples to feed a burgeoning working class. This new international division of labor formed the basis of the first capitalist "food regime" (Friedmann and McMichael 1989), a coordinated set of relations organizing food production, distribution, and consumption on a world scale. During the first food regime, the international food trade was organized mostly on the basis of free trade, a key part of the UK's strategy for economic and political dominance. In the settler-states, family farms, based on household labor and land ownership, became the dominant form of agricultural production, and farm households became an important political and economic class. The earliest agribusiness companies, consisting of grain trading firms, farm machinery manufacturers, and early food processing businesses, also emerged at this time.

The chaos of the two World Wars and the Great Depression disrupted and ultimately unraveled the first food regime as wartime food crises and the collapse of agricultural markets caused increasing conflicts among farmers, governments, and consumer classes.

Only with the stabilization of the international system and the world economy after World War II did a new food regime emerge. During the second food regime, states would play a much more direct role in regulating domestic food and farm sectors as well as the international agricultural trade. Governments of industrialized states introduced wide-ranging farm supports that sought to stabilize farm incomes and promoted the further industrialization of agriculture. These policies tended to create large, chronic surpluses

of major food commodities, which in turn became a serious economic and political problem. Taking the lead from the USA, the dominant economic and political state of the era, governments dealt with surpluses by pushing their exports into new markets, often through food aid programs, and by encouraging the rapid development of intensive livestock and food processing industries. These industries, referred to by Friedmann (1994) as the “livestock complex” and the “durable foods complex,” transformed grain into meat and processed foods, both of which became hallmarks of post-war diets. Large multinational corporations consolidated their power over several aspects of the agri-food sector, including grain trading, food processing, and farm chemicals, sometimes creating vertically and horizontally integrated conglomerates (e.g., Cargill and ADM).

Meanwhile, the end of World War II led to a rapid wave of decolonization in the global South. The newly independent states of the Third World pursued economic development based on a Western model of industrialization. As a result, many Third World states accepted food aid (cheap, but not free, shipments of grain from the USA and other states) as a basis for subsidizing working-class wages and stimulating industrialization. The second food regime therefore produced new international flows of food, with many parts of the Third World continuing to provide international markets with tropical commodities, but industrialized states increasing their exports of grain and meat products into the global South.

These patterns were fairly stable until the oil and food shocks of the early 1970s, which disrupted the global capitalist economy. In 1972–1973, food prices spiked, partly because of a massive sale of US grain to the USSR, which marked a reversal of the long-standing American trade embargo with the communist world. The end of this embargo temporarily erased grain surpluses, which led farmers in the industrialized world to expand production, at the urging of governments. However, by the late 1970s, a return to surpluses combined with the

European Economic Community’s entry into the world market as a major exporter in its own right caused increasing market volatility. As competition over market share intensified, the dominant exporters, the USA and the EU, expanded their export subsidies and other forms of agricultural support. This depressed world prices, causing hardship for industrialized farmers in countries such as Canada, Australia, and Argentina. Meanwhile, the conditions of the 1970s sowed the seeds of a crisis for many Third World states. Rising oil prices and a recession among the industrialized states caused the price of imports to rise just as export opportunities declined. Earnings from the export of tropical agricultural commodities plummeted as the terms of trade for Third World states worsened. Many of these borrowed heavily in order to keep up with development goals and to finance imports. Higher grain prices during the mid-1970s caused wealthy countries to scale back their food aid programs, leaving former aid recipients dependent on imports of now commercially priced grains from the North. By the 1980s, rapidly rising interest rates, caused by the USA’s tightening of the money supply, triggered a severe debt crisis for many Third World states. The turmoil of the 1970s and 1980s undermined many of the assumptions and practices that had stabilized the second food regime.

In the search for a solution to these problems, powerful states, led by the USA, and multilateral lending institutions adopted a neoliberal philosophy that called for freer trade and less government involvement in agriculture. On the one hand, freer trade was intended to curb the spiraling subsidy war among major exporters and to expand international trade opportunities. On the other hand, reducing government support for agriculture was meant to allow “market forces,” including international competition, to allocate resources in the farming sector, even if this undermined the viability of family farming. In the global South, debt crises led many states to seek emergency bailouts from the International Monetary Fund and World Bank, who made the loans conditional on the adoption of “structural adjustment plans” inspired by neoliberal

economics. Structural adjustment policies encouraged governments to increase agricultural exports, reduce import restrictions, and cut funding to rural development and farm support programs. These reforms reoriented the farming sectors of many countries – shifting away from self-sufficiency and towards agro-exports – and further integrated the global South into the global food economy. From the 1980s onwards, many countries scaled up their production of counterseasonal fresh fruits and vegetables, meat, seafood, and animal feed for the global market. This reorientation often came at the expense of smaller-scale peasant farmers, who found it increasingly impossible to compete with the flood of cheap imports from abroad.

The neoliberal restructuring of agriculture was institutionalized in the Agreement on Agriculture (AoA), a subagreement of the World Trade Organization, signed in 1995. This agreement sought to liberalize agricultural trade by harmonizing food standards, reducing trade barriers, and tackling export subsidies. Wealthy agro-exporting countries, supported by an influential agribusiness lobby, sought better access to new markets in the global South as well as an end to the destructive USA–EU subsidy war. Meanwhile, many countries in the global South hoped that the AoA would level the playing field by reigning in rich-country subsidies and providing better access to markets in the global North. Far from resolving the imbalances of the global food system, however, the AoA has, according to its critics, accentuated and legitimized them (Pritchard 2009). For one, the USA and EU have made little progress in reducing their overall agricultural spending, to the frustration of competing agro-exporters. Furthermore, countries of the global South have been locked into a new trading regime that exposes them to the cheap exports of wealthy countries with little benefit in terms of improved market access. By the early 2000s, these issues became a stumbling block in the attempt to reach a new WTO deal, as a coalition of global South countries broke off the negotiations over the lack of progress on rich-country subsidies. The talks have been moribund

since 2008, though the 1995 AoA provisions remain in effect.

In the neoliberal era, agri-food corporations have extended and consolidated their influence over the global food economy. In a process facilitated by the liberalization of agri-food sectors, agribusiness firms have established sprawling international empires able to source raw materials cheaply, exploit differential labor regimes, and target lucrative markets with an eye to maximizing profits. Agri-food companies have likewise developed increasing influence over the regulation of food quality, with private standards replacing or being superimposed upon weakened public standards (Friedmann 2005). These private standards may appeal to wealthy consumers as assurances that foods are “safe,” “green,” or “fair.” Poorer consumers, however, must make do with the standardized, highly processed, and sometimes risky food products of the global food system.

Although the neoliberal period has led to an unprecedented integration of the global food economy, it has also produced growing conflicts. On the one hand, different social actors, regions, and agri-food sectors are integrated unevenly into the system, creating different sets of winners and losers. On the other hand, the dominance of neoliberal philosophy has sparked a debate over the principles and values that should guide societies’ relationships to food and agriculture. Neoliberalism tends to value entrepreneurship, individual liberty, and economic efficiency over solidarity, cooperation, and social justice. Applied to agriculture and food sectors, these values have translated into a sense that neoliberal reforms are a painful but necessary process for achieving a greater long-term good, the efficient allocation of resources. Critics of neoliberal philosophy contend that the most efficient allocation of resources is not necessarily, or even most often, the most just and that markets, trade, and other economic processes should serve society, not the other way around.

These conflicting realities and worldviews have led to a series of instabilities and contradictions in the global food economy.

Crisis and Contradiction in the Global Food Economy

The food crisis of 2007–2008 shone a spotlight on the weaknesses of the global food economy. Many agri-food scholars point out, however, that the contradictions of the system run deeper, since many present-day crises are the expression of long-running tendencies. Perhaps the most visible failing of the global food system is persistent – indeed, worsening – hunger and malnutrition. In the wake of the food crisis, the FAO estimated that over one billion people went hungry in 2009, an increase of approximately 150 million from preceding years. Yet, even before the price spikes, rates of undernourishment remained stubbornly high, particularly for sub-Saharan Africa and South Asia. With rapid price increases such as those in 2007–2008 and 2011, vulnerable households are pushed over the edge into food insecurity. The causes behind recent food crises include both latent problems, such as the decades-long marginalization of small-scale farmers and rural people, who are the most vulnerable to hunger, and more recent phenomena, such as the biofuels boom, which shifts resources away from food production, rising global demand for meat, failed crops, a weakening US dollar, and growing financial speculation in food commodities. While food crisis conditions have led to increasing investment in agriculture, which many have welcomed, some new forms of investment have been highly controversial. Wealthy governments, sovereign wealth funds, and private investors have, since the mid-2000s, begun to acquire large swaths of productive farmland in developing countries, especially Africa, in what some have called a “global land grab.” The concern is that these outside investors will, in pursuing their own ends, dispossess and disenfranchise vulnerable smallholders. Another controversial trend is increasing food system financialization (Clapp 2012), the process whereby financial interests have come to exert increasing influence over agri-food markets and prices through speculative investment. Here the

concern is that speculation could exacerbate food price volatility at the expense of poor, food-insecure households.

At the other end of the spectrum, industrialized states and, to an increasing extent, middle income and developing countries are facing growing rates of diabetes, obesity, and heart diseases. While the causes of these diseases are complex, the overconsumption of some foods, particularly meat, highly processed foods, and fast foods, is a major contributor. Diet-related diseases such as these pose a significant public health problem and place a strain on health-care resources. Yet, addressing the problem is difficult given that food choices are made in a food environment saturated with advertisements for foods high in fat and empty calories. This global juxtaposition of the “stuffed and starved” is a symptom of a food system that is gravely out of balance (Patel 2007).

The plight of the world’s farmers is another of the global food economy’s most pressing crises. In the global North, three decades of neoliberal reforms have accelerated the decline of small- and medium-sized family farms. The remaining farms are highly productive, highly capitalized, and very large, yet many farm operations cannot survive without substantial support from off-farm income and/or government programs. Likewise, these farms are increasingly likely to be integrated into corporate food chains through contracting arrangements wherein farmers have only limited negotiating power. In the global South, chronic underspending on rural development and agriculture, the corrosive effect of cheap imports, the overreliance on some export commodities, and the dominance of corporate agro-exports have left smallholder farmers in ever more precarious conditions. Indeed, tens of millions of small farmers have, in recent decades, abandoned the countryside for the city, contributing to the “planet of slums” phenomenon (Davis 2006). Even if cities offer better opportunities for some, the scale and speed at which this rural–urban migration is occurring mean that many migrants become a part of the “surplus population” for which there are no (or only poor) jobs, insecure housing, and few if any

basic amenities. Those small-scale farmers that stay on the land have shown great resilience but continue to face hunger – many poor households are still net buyers of food – poor access to markets, low productivity, and worsening environmental conditions.

The ecological cost of industrial food production is another highly contentious issue. As Weis (2010) has argued, the productivity of the industrial food system is underwritten by a series of “biophysical overrides” that boost yields but externalize environmental costs. The common denominator for each of these overrides – artificial fertilizers, chemical pesticides, and cheap fuel for machinery – is fossil fuels. The ecological harm wrought by the extraction and burning of fossil fuels is unaccounted for in the cheap price of fuel and other petroleum inputs, which masks the true cost of industrial food. In addition, a highly integrated global food economy depends on cheap fuel to transport food from farm to plate, often across thousands of miles. The global agri-food sector is therefore a major contributor to greenhouse gas emissions and climate instability. This is ironic since the agricultural sector stands to be among the most negatively affected by climate shocks such as drought, flood, and extreme heat. The spread of industrial agriculture is also associated with biodiversity loss, the toxic effects of pesticides on nontarget species, and damage to waterways from the overaccumulation of artificial nutrients.

Finally, the spread of industrial livestock operations and meat-centered diets raises animal welfare and social justice issues in the global food system. Weis (2007) has documented the rapid rise of the global livestock sector, citing an estimated fivefold increase in global meat production from 1950 to the early 2000s. The global farm animal population puts a huge strain on resources – referred to as the “ecological hoofprint” – including land, water, and waste-absorption capacity. Given the inefficient rate at which grain and water are converted into food nutrients in meat, the rising global appetite for meat tends only to exacerbate the inequalities between the world’s poorest and more affluent consumers. Moreover,

industrial methods tend to maximize animal turnover through speedup and other technologies, exacting a heavy toll on animal well-being.

Countermovements and Alternatives

A wide range of social actors, including farmers, NGOs, academics, food system activists, and environmentalists, working within and across their various networks, have challenged the dominant relations of the global food system. Three broad sets of alternative approaches, each grounded in an ethical critique of the status quo, are highlighted here. First, social actors have created alternative food networks (AFNs) that circumvent the regular channels of production, distribution, and consumption of the global food system. At local and regional scales, AFNs include farmers’ markets and community-supported agriculture schemes, where consumers invest in a local farm in order to share in the risks and rewards of food production. These types of AFNs reconnect farmer and consumer and return a larger share of the food dollar to farmers. At an international scale, fair trade schemes for commodities such as coffee, tea, sugar, chocolate, and flowers provide a guaranteed price to smallholder farmers, ensure decent labor conditions, and often include environmental provisions. By purchasing fair trade-certified products, consumers engage in a form of ethical consumption where social and ecological values are added to other considerations such as price and quality.

Second, recent food crises have led to a call among some multilateral bodies, NGOs, activists, and academics for a new commitment to farmer-led rural development. The idea here is that investing in the livelihoods of poor farmers is the best way to tackle the food, farming, and climate crises. Since hunger and poverty disproportionately affect farmers and rural populations, raising the incomes of small-scale farmers must be a priority. This can best be achieved, according to this view, by providing farmers with the knowledge and tools to make the best possible use of their existing resources, including

land, water, and agro-biodiversity. Indeed, low-input, resource-conserving methods – referred to as agroecology – have been shown to significantly raise yields and, by extension, the incomes and food security of poor households. The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), a major UN-sponsored study, favored pro-poor, agroecological strategies over continued agro-industrialization as a means of meeting the challenges of global food security, poverty alleviation, and climate stabilization.

Third, social movements of various stripes have rallied behind food sovereignty, a far-reaching vision for putting human rights at the center of the food system. The idea of food sovereignty was first articulated by Via Campesina, an international peasants' movement. Above all, food sovereignty asserts the right of peoples to democratic control over food and farming. In practice, food sovereignty requires that agri-food systems provide a decent living for farmers, ensure that the food needs of all members of the society are met, and create the conditions for long-term sustainability. The food sovereignty movement sees the neoliberal framework of liberalization, commodification, and corporate dominance as illegitimate and seeks to replace it with decentralized, democratically governed food systems. Food sovereignty is in large measure compatible with the other alternatives outlined above but goes beyond them by proposing a paradigmatic change that integrates ecological, social, and political goals.

Summary

Over 150 years of global capitalist development, an increasingly integrated global food system has tied distant producers, consumers, and ecosystems into new relations. The consolidation of the corporate-dominated global food system since the 1980s has led to a series of ruptures, dislocations, and conflicts that have raised pressing social, ecological, and political questions. The trajectory of the global food system will be influenced by the competing interests and strategies of dominant social actors, including states

and agri-food corporations committed to the status quo, and coalitions of civil society challengers committed to deep-seated change.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Biofuels: Ethical Aspects](#)
- [Community-Supported Agriculture](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Land Acquisitions for Food and Fuel](#)
- [Meat: Ethical Considerations](#)
- [Private Food Governance](#)
- [Trade and Development in the Food and Agricultural Sectors](#)

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Ecosystems, Food, Agriculture, and Ethics

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Rural, Urban, and Wild

Aristotle said that humans are by nature “political animals” (Greek *polis*, town, Aristotle, *Politics*, 1, 2). We live in towns; we are civilized. But by nature too, we are residents on landscapes, placed in a more comprehensive community of life and life support. The rural environment is more central, more basic than the urban or wild environments. Humans may believe they have a right to a healthy and productive environment, providing needed commodities – soil, food, water, timber, and natural resources. Still, an encounter with all three dimensions – urban, rural, and wild – protects a comprehensive experience of human identity. Nature is *resources*, but in a deeper perspective, nature is the *source* that produces life, the ecosystemic life-support system.

Culture remains tethered to the biosystem. Culture depends on airflow, water cycles, sunshine, nitrogen fixation, decomposition bacteria, fungi, the ozone layer, food chains, insect pollination, soils, earthworms, climates, oceans, and genetic materials. An ecology still lies in the background of culture. In any future that we can presently envision, some sort of comprehensive or inclusive environmental fitness is required. Nature is not gone. Nor are we post-natural; rather, nature is forever lingering around. Humans and this planet have entwined destinies.

Such more comprehensive fitness is more than just a reliable supply of wheat from the breadbasket plains. People have a sense of place. Americans sing, with goose bumps, of “mountain majesties above fruited plains.” All peoples need a sense of “my country,” of their social communities in place on a sustaining landscape they possess in care and in love. The English love their countrysides. The promised land has been central in

Hebrew faith. Both involve a rural land tended with care and, more inclusively, an embodied sense of residence on a landscape.

Caring for landscapes goes back to Adam and Eve, to baseline human agricultural experience. The first couple was set in Eden “to till it and keep it” (Genesis 2.15). “Be fruitful and multiply, and fill the earth and subdue it; and have dominion . . .” (Genesis 1.27–28). Even hunter-gatherers attempted some landscape tending, such as setting wildfires to increase grass and attract game. With the coming of agriculture, humans found tilling the good earth a toilsome blessing, reflected in the Genesis fall: “In the sweat of your face you shall eat bread” (Genesis 3.19). In the struggle for food and health, we want a naturally healthy body, but we do not want naturally healthy wild ecosystems and nothing more. We transform them agriculturally; we are stewards who garden the Earth. We “produce” food and fiber. Still, some dimensions of health pervade both wild and agricultural nature – the need for air, water, fertile and nontoxic soil, sunshine, suitable climate, and a land with promise that can be tended as a promised land.

This ancient pursuit continues. How ought humans to reside on landscapes on which they must earn a living? Some prominent figures in thinking philosophically and ecologically about agriculture are as follows: Paul Thompson (Thompson 1995, 2010); Wes Jackson, founder and president of The Land Institute in Salina, Kansas (Jackson 1994, 2010); Fred Kirschenmann, North Dakota organic farmer and also at the Leopold Center for Sustainable Development, Iowa State University (Kirschenmann 2010); and Wendell Berry (2002).

Ecosystem Services

Natural systems have provided the wider envelope in which human agriculture (and culture) functions. “Ecosystem agriculturalists will take advantage of huge chunks of what works . . . the natural integrities of ecosystems worked out over the millennia” (Jackson 1985, p. 145). This surrounding milieu provides what are now called

“ecosystem services,” contributions of natural processes without which no agriculture (or culture) can flourish, but which do not classically enter into the accounting of economists. These include primary photosynthetic productivity, nutrient dispersal and cycling, pollination, food, fuel, cleansing air and water, soil renewal, and living space that is habitable and pleasant. Wild pollinators, for example, provide free pollination; in some areas honeybee colonies must be supplied to replace lost wild pollinators, at a cost of billions of dollars. Analysts who examine this may call their discipline ecological economics and distinguish it from environmental economics, which is classical economics applied to natural systems thought of as market resources. Ecological economists are holists who think more ecologically than environmental economists.

Robert Costanza led an effort to value such ecosystem services. He came up with a value of about \$33 trillion, in a range of \$16 trillion to \$54 trillion (Costanza et al. 1997; Pimm 1997). The global GDP in 1997, the year of the study, was \$27 trillion. So natural ecosystem services may exceed the entire output of the global human economy. As might be expected, the study was criticized, although critics agreed that “externalities” (as classical economists call them) – benefits from Mother Nature that belong to no one in particular and so are enjoyed for free by all – are huge. These common benefits do indeed force us to rethink what we ought to do in terms of our treatment of nature. This may also be called “translational ecology.”

Ecological economists find that this goal of forever giving people more and more, however humane, drives an escalating degradation of the natural environment, undermines ecosystem services, makes it harder to grow enough food for people, reduces biodiversity, and makes the rich richer and the poor poorer. Such a humane economy is inseparably entwined with biological processes, a bioeconomics (Costanza et al. 1997; Spash 1999; Kolstad 2000; Daly and Farley 2004; Common and Stagl 2005; Millennium Ecosystem Assessment 2005).

Ecological economics thinks of the flow of energy and materials that enter and exit the

economy as a kind of metabolism, digesting life nutrients, but needing environmental sources and sinks, analogous to organisms in their environment. They may worry about pushing crop yields and losing the natural fertility of the soil and replacing this with synthetic agricultural fertilizers in increasing amounts, even if this increases yields in the short term. Or they may worry about what high pesticide use is doing to the rivers and groundwater. Carrying capacity ought to govern resource use, rather than maximum exploitation. Environmental integrity and quality is as central as are production, growth, and profit.

A massive *Millennium Ecosystem Assessment*, sponsored by the United Nations, involving over 1,300 experts from almost 100 nations, begins: “At the heart of this assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted” (Millennium Ecosystem Assessment 2005, p. 5). The principal authors conclude:

We lack a robust theoretical basis for linking ecological diversity to ecosystem dynamics and, in turn, to ecosystem services underlying human well-being. . . . The most catastrophic changes in ecosystem services identified in the MA (*Millennium Assessment*) involved nonlinear or abrupt shifts. We lack the ability to predict thresholds for such changes, whether or not such a change may be reversible, and how individuals and societies will respond. . . . Relations between ecosystem services and human well-being are poorly understood. (Carpenter et al. 2006)

In a review of biodiversity in ecosystem functioning, the authors conclude: “Maintaining a high proportion of biological diversity leads to efficient and stable levels of ecosystem functioning. . . . Protecting biodiversity is a goal of fundamental importance and can support efforts to safeguard the intrinsic capacity of ecosystems for self-renewal, adaptive dynamics, and supporting humanity now and for generations to come” (Naeem et al. 2012, pp. 1405–1406).

Some critics reply that, moving into the Anthropocene epoch, humans are creating novel ecosystems, new combinations of species under new biotic and abiotic conditions. More than

80 % of all people live in densely populated rural, village, and urban landscapes, what may be called “anthropogenic biomes” (Ellis and Ramankutty 2008). These critics further argue that adaptive ecosystem management approaches must explicitly acknowledge the current status and predict the future conditions of these systems. Old styles of management, which focused on removing undesirable species or conditions from ecosystems to return them to a prior condition, are no longer sufficient. We need to consider, and experiment with, novel outcomes or trajectories, rather than simply take preventative or therapeutic measures (Seastedt et al. 2008).

But ecological economists are doubtful about all this scaled-up, clever management of rural and wild lands. We have too much experience already with unexpected outcomes (e.g., kudzu, CO₂ in the atmosphere). Maybe even in the Anthropocene, we need to keep (as Wes Jackson says) “huge chunks” of what has worked well for millennia.

Farming, Food, Human, and Ecological Health

People work to domesticate their landscapes. They have grazed and plowed fields, cleared forests, planted crops, domesticated animals, and built roads, canals, and dams. Imperial China built irrigation canals and deforested mountains. The great Southeast Asian rivers were lined with rice paddies, and their well-watered deltas have proved superb locations for the cultivation of wet rice, the staple food of much of the population. Nepalis terraced their hillsides for more, drier rice. The Hebrews, in Biblical times, terraced theirs to grow wheat. Americans had their manifest destiny to conquer their continent, planting where they could and making the rest range for their cattle. Their wheat is not native to their landscape; in fact Americans eat almost nothing that was native to North America. Soviet socialism pressed a vast plan to reinvent nature, transforming it into the obedient servant of human society. People try to get the most they can out of their agriculture.

“Domesticated nature in its simplest form means nature exploited and controlled” (Kareiva et al. 2007). Humans reshape their environments, rather than being themselves morphologically and genetically reshaped to fit their changing environments. So entering an Anthropocene epoch is just continuing what we have always been doing.

Yes, but the recent century has dramatically escalated the classical transformations. Human-dominated ecosystems now cover more of Earth’s land surface than do wild ecosystems (Foley et al. 2005). Nature now bears the marks of human influence more widely than ever before. Humans now consume 30–40 % of all terrestrial net primary production (Vitousek et al. 1986; Imhoff et al. 2004). Humans produce more reactive nitrogen than all other terrestrial processes combined (Galloway 2004). Human agriculture, construction, and mining move more earth than do the natural processes of rock uplift and erosion (Wilkinson and McElroy 2007). These human activities alter the composition of the atmosphere, the soil, levels of biodiversity, and energy flows within food webs enough to threaten important ecosystem services. Most of life for most people takes place on landscapes that are a hybrid tapestry of nature and culture and rural, agricultural, pastoral landscapes. Humans have a huge “ecological footprint.”

According to a widely held account (descending from the philosopher John Locke), value arises when nature is mixed with human “labor” or “industry,” with the human labor adding most of the value. A person finds little food or shelter hiking through a forest; a farmer cuts down the trees, builds a house with the wood, and plants a vegetable garden, which must be tended or else there will be mostly weeds. Where a natural “source” can be “redirected” into channels of human interest and preference, nature is redone, “resourced,” and made over into an artifact that we can use. Nature is “transformed” into a more desirable humanized form. If you prefer a biological word, human values and natural values are “symbiotic.” If nature means absolutely pristine nature, totally unaffected by human activities, past or present,

there is relatively little remaining on Earth. If culture means totally denatured, reconstructed, and civilized with no dependence on natural systems, there is none of that on Earth either. What is all over the landscapes is nature linked with human identity.

So are we to celebrate this escalation of human agricultural powers? Or should we be concerned about it? Have we passed our landscape-carrying capacity? Fewer farmers feed more people. In the United States in 1850, less than 20 % of Americans lived in towns and cities. Today more than 80 % are urban, and the prosperity in cities is made possible by increasingly productive mechanized agriculture on the farms, as we next see. This urbanization has also decoupled increasing numbers of humans from any direct experience of agriculture. A typical reply will be that all this is a good thing, provided only that the agriculture is sustainable, provides the population with healthy food, and continues on healthy ecosystems. One way to keep people in touch with their ecosystems is to eat local and eat organic food.

Ecosystem *health* is a somewhat metaphorical term, extrapolated from health as found in individual organisms, but it is a term to which people relate easily. Everybody wants to be healthy and to live in healthy places. “An ecological system is healthy and free from ‘distress syndrome’ if it is stable and sustainable—that is, if it is active and maintains its organization and autonomy over time and is resilient to stress” (Costanza et al. 1992, p. 9; Mistretta 2002). Biological *integrity* has as a baseline index the ecosystem that was originally there before human changes, the natural history, while biological *health* may – but need not always – require all the species that were originally there. There may be culturally introduced replacements. If there is health, these replacements will thereafter function with minimal management intervention. Generally, environmentalists dislike moving to a bioengineered agriculture that involves a constantly doctored landscape (removing toxics from streams, bringing in bees to fertilize the crops).

The 1998–1999 Malaysian Nipah virus epidemic emerged when pigs (raised for international trade) were crammed together in pens

located in or near orchards. The orchards attracted fruit bats whose normal habitats had been disrupted by deforestation; their droppings contained the as yet unknown paramyxovirus and infected the pigs. The overcrowding led to explosive transmission rates and to infections in pig handlers. So a virus that was once not disruptively epidemic became so because of human disruptions of natural habitats of bats and overcrowding of pigs, driven by global commercial interests. The Malaysian government culled over one million pigs (Morens et al. 2004; Dobson 2005). Globalism sets up atypical ecological conditions favorable for invasives and pathogens. The result is human disease but the inclusive framework is agricultural and social upset of natural ecologies.

One of the classical proverbs of ecologists is that everything is connected to everything else. This proverb is proving true with links between ecological and human health, links that tie local to global events, in wild nature, agriculture, and culture. The larger framework requires thinking holistically “based on the understanding that there is only one world—and only one health” (Karesh and Cook 2005, p. 50; Rolston 2005). “Health effects ripple throughout the web of life. Health connects all species” (Tabor 2002, p. 9). Human health requires thinking in ecological contexts, increasingly in more global ones.

Industrial Agriculture

Yes, classically ecosystems did provide the wider envelope in which human systems of agriculture have functioned. But in the Anthropocene age, we have moved past that. Now and henceforth, the principal way to think of agricultural lands is as capital. Economists may speak of “capitalizing nature.” Land and resources are “natural capital.” We have “factory” or “corporate” farming. Farmers ought to be “industrious.” Traditional agriculture was powered by muscle and blood, humans and horses, and perhaps some water power for irrigation or grinding grains. Commercial agriculture is powered by engines and gears, tractors, combines, and harvesters, in turn powered

by fossil energy. Farming is technoscientific, with innovations in agricultural machinery, massive irrigation dams, and genetic technology, producing high-yield varieties, large-scale production, huge fields, massive harvests, patent protection, and global trade. Land is part of the machinery. There are confined animal operations (CAFOs); animals are fed enriched food, growth hormones, and antibiotics to assure maximum productivity in terms of size, taste, and sales. Traditional fertilizer was manure; now the increase comes from synthetic nitrogen and other fertilizers.

There are positive results for those in developed countries: cheaper and more plentiful food in nearby supermarkets and myriads of workers employed in the distribution system, from growers to harvesters to processors to sellers. Those in developing countries are better fed (at least they can be; many are obese). Agricultural production is over ten times what it was a century back, although the number of farmers has dropped dramatically. Now, we can support escalating populations with escalating appetites in consumption. In the 1930s, 24 % of the American population worked in agriculture compared to 1.5 % in 2002; in 1940, each farm worker supplied 11 consumers, whereas in 2002, each worker supplied 90 consumers (Scully 2002, p. 29). The hope is to transfer such productivity to developing nations and feed the starving world, a “Green Revolution.”

But there is bad with the good. Often there are serious environmental and social costs (Gardner 2002). There is global warming from heavy use of fossil fuels. The large scale of disturbed soil for planting monocultures invites invasives, weedy plants, and exotic insects, microbes, and fungi, which must be controlled. There are increased health risks from pesticides and other agricultural chemicals, both to wildlife and to humans. Many agriculturally used chemicals have long lifetimes; they spill over and migrate from the sites where they are applied; they build up in food chains. We woke up to this with discoveries about the unintended consequences of the pesticide DDT, Rachel Carson’s “Silent Spring.” In places, human breast milk has become contaminated at levels that exceed those permitted in

dairy milk sold in stores. Many pesticides seem to be endocrine disrupters, disturbing reproduction. Pollution that leaks into groundwater is often impossible to remove. Pollution released into the air moves around the globe. One problem here is that agricultural uses (in contrast with industrial plants) are nonpoint sources. It is hard for regulators to pinpoint who is responsible exactly when, where, and how much. Nitrogen in fertilizer on farms in the Midwest has been traced to fish kills in the Gulf of Mexico.

The victims who live downwater or downwind never gave any free, informed consent and usually have no means of proving their damages or asserting their rights. The ill-health effects of pollution often show up first in women, especially pregnant women, and in children. The ill effects may never show up in most of the population, only in a segment of the population that is more susceptible (perhaps the senior citizens). With the long-lived pollutants, the benefits (agribusiness profits, cheap food) may be enjoyed at present, but the suffering (toxic groundwater carcinogens) is borne by future generations. The toxic effects of many of these pollutants can be much longer-lived than the human institutions set up to deal with them.

Longstanding public policies governing chemical design, production, and use need deep restructuring in the light of new science on the health and environmental effects of anthropogenic chemicals. The prevailing view is that we have to maximize yields, at risk of degrading ecosystems. Better to think more holistically. More organic farming can produce enough, healthier foods; it can even outperform chemically dependent farms in periods of drought and climatic stress (Seaman 2011). Such reforms are essential to safeguard ecosystem integrity, human health, and economic sustainability. The U.S. Congress has passed numerous laws to address these issues – notably the 1976 Toxic Substances Control Act, the 1977 Clean Water Act, the 1977 Clean Air Act, and the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, with its Superfund). But these issues escalate when one moves from the traditional family farm to

industrial agriculture. Corporate agriculture, with its focus on increased production, sales, and profits, is not inclined to consider the externalities, the wider and long-term consequences of its operations. The family farm could still be contained in an ecosystemic envelope; industrial farming pushes that envelope toward ecosystemic collapse.

Agriculture in Developing Nations

The Millennium Ecosystem Assessment found that “the poor are most dependent on ecosystem services and vulnerable to their degradation” (Carpenter et al. 2006). In Nepal, one of the poorest nations on Earth, there are melting glaciers in the Himalayas, resulting in glacial lake outburst floods, destroying homes and crops. At the same time monsoon rainfall is increasingly erratic, often delayed past the season for planting rice, and producing landslides that destroy agricultural terraces. This is widely ascribed to global warming, the effects felt in a nation that contributes virtually nothing to CO₂ emissions. So far as this is true, the industrial nations are depriving poorer nations of their ecosystem services, vital to their agriculture.

The “Green Revolution” produced some positive results but came nowhere near solving the problem of feeding the world, and it is increasingly harder to bolster crop yields. Corporate agriculture, especially when faced with overproduction in developed countries, has turned to developing nations. But productivity improvements are hard to transmit there (Wilkinson 2009). This can be deliberate; high-yield varieties may be engineered so that farmers must purchase new seed each year. It can be more social or political. Often there are patent disputes or water relocations. Developing states may enter into agreements with large food corporations to grow food and may displace local farmers. There is often dispute over regulation and local corruption. Corporations may seek control over large amounts of land (“land grabbing”).

Foreign businesses entering local agricultural systems can upset them as often as improve them,

since they are there to make a profit, perhaps to grow crops for export (palm oil, coffee, tea, soy, shrimp). Many agricultural systems may have worked for centuries, but with recent population explosions and resulting land degradation, those in developing nations increasingly need fertilizers to boost yields – synthetic fertilizers if they can get them – but such fertilizer will be proportionately much more expensive in developing nations. African soils are often not especially fertile, and farmers there must pay two to four times the average world price for fertilizers (FAO 2008); prices are not competitive; fertilizer traders charge what they can get; and transportation is inefficient and expensive (sometimes carried on the backs of donkeys or women).

Industrial agriculture, critics often say, needs to be replaced by sustainable agriculture, and again, there are opportunities and challenges.

Sustainability: Local and Global

One powerful movement has been the turn to sustainable development, growing out of the United Nations Conference on Environment and Development in 1992. But there are two ways of thinking about sustainability. First, the economy can be prioritized: this is the usual case. Anything can be done to the environment, so long as the continuing development of the economy is not jeopardized. If economics is the driver, we will seek maximum harvests, a bioindustrial model, pushing for bigger and more efficient agriculture, so long as this is sustainable. What we must push for, according to the Royal Society of London, the world’s oldest scientific society, is “sustainable intensification” of reaping the benefits of exploiting the Earth (Royal Society 2009).

In a second way of thinking, the environment is prioritized. A “sustainable biosphere” model demands a baseline quality of environment. The economy must be worked out within such a policy for environmental quality objectives (clean air, water, stable agricultural soils, attractive residential landscapes, forests, mountains, rivers, rural lands, parks, wildlands, wildlife, renewable resources). Ecosystem services have

to be sustained. The economy must be kept within an environmental orbit. One ought to conserve the ground matrix of life. Development is desired, but even more, society must learn to live within the carrying capacity of its landscapes. The model is land as community.

The Ecological Society of America advocates research and policy that will result in a “sustainable biosphere.” “Achieving a sustainable biosphere is the single most important task facing humankind today” (Risser et al. 1991). Any sustainable economic development ethic needs to be brought under a sustainable ecosystems ethic. Development concerns need to focus on natural support systems as much as they do people’s needs. “Sustainable” is an economic but also an environmental term. The fundamental flaw in “sustainable development” is that it typically sees the Earth only as resource.

Philosophers may enter the dialogue to claim that sustainability of any kind needs also to be fair and just. There is nothing in either ecology or economics per se that gives either any authority or skills at making these further social decisions. Perhaps ecologists can at least make the claim that any fair and just society, over time, requires a local, regional, and planetary sustainability. The ultimate unit of moral concern is the ultimate unit of survival, and that is the biosphere on this wonderland Earth.

Summary

Food and agriculture when linked together with ecosystems raise ethical issues, in addition to technological and scientific concerns. This requires considering rural, urban, and wild landscapes; ecosystem services; human and ecological health; industrial agriculture; agriculture in developing nations; and local and global sustainability.

Cross-References

- [Africa, Food, and Agriculture](#)
- [Agricultural Ethics](#)

- [Community-Supported Agriculture](#)
- [Corporate Farms](#)
- [Environmental Ethics](#)
- [Human Ecology and Food](#)
- [Trade Policies and Organic Food](#)

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Ecotopia

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Synonyms

Ecological utopia; Environmental utopia; Ideal ecological state

Introduction

Ecotopia, a novel written 1975 by Ernest Callenbach (1929–2012), describes an ideal ecologically oriented sustainable society (an ecological eutopia). The book discusses a wide variety of environmental topics of ethical relevance, including issues pertaining to organic food, healthy eating, organic agriculture, and sustainable forestry. The novel illustrates how these issues can be addressed ideally and practically. Sometimes the term ecotopia is also used loosely to refer to real existing ecological communities or blueprints of such communities. This entry, however, is focusing on the novel *Ecotopia* and its description of an ideal ecological state by the same name. The entry briefly situates the novel as a utopian text that is relevant in the context of the discourse on ecologically ideal living, and then it deals with two philosophical presuppositions of the fictitious state “Ecotopia,” sustainability and holistic well-being, before focusing on agricultural and food issues, respectively.

The novel *Ecotopia* is not a negative utopia (Dystopia) such as the dystopias *Brave New World* by Aldous Huxley (1932) and *Nineteen*

Eighty-Four by George Orwell (1948). On the one hand, the utopian connotation of Callenbach's novel title, *Ecotopia*, points to a place (Greek: topos) that does not (Greek negation: "u-") exist (yet) but also to a place which is good (Greek: "eu"). Hence, in many ways *Ecotopia* is an "eu-topia" as, for example, Aldous Huxley's *Island* (1962). Some ecological paradigms of the fictitious state "Ecotopia" can be traced back to ancient Greek philosophy. Plato's dialogue *Nomoi* (2008) implies an ideal sustainable and stable state in terms of politics, society, population, households, and environment, while the Ancient Stoic philosophy valued the ideal of living according to (or in harmony with) nature.

The detailed and practical ecological solutions in *Ecotopia* include, but are not limited to, all possible types of waste management encompassing recycling programs, plant-derived biodegradable durable plastics, renewable energy, car and airplane free transportation, a wide variety of public transport opportunities (high and simple tech, such as free public bicycles), organic farming, renaturation, and reforestation. In *Ecotopia* ecologically compatible high technology exists besides postmaterial(istic) lifestyles and attitudes of its citizens. Environmental paradigms of ethical relevance include a holistic concept of well-being, intra- and intergenerational justice, sustainability, steady-state economy, prices of goods that reflect the real costs (speak the "ecological truth"), anti-consumerism, slowly declining population, and strict environmental laws. The ecocentric worldview, with a romantic undertone regarding "mother" nature, gives preference to the quality of life and holistic well-being, but not to the economic paradigm of growth (Meinhold 2011).

Ethical-Philosophical Presuppositions

Ecocentric Worldview

Two pertinent ethical-philosophical presuppositions which guide both food production and food consumption in *Ecotopia* are based on an ecocentric worldview in general and more specifically a holistic and sustainable perspective on well-being in particular. In accordance with

Ecological Economics' or Deep Ecology's view of the world, in *Ecotopia* humans and their economies are taken as subentities or subsystems of the ecosystem (mother nature). This argument is ontologically and logically consistent, since human economies take place within the context of ecological systems. The ecosystem is a *conditio sine qua non* for human economies, but the economy cannot exist sustainably without the sustainable support of the ecosystem (e.g., the sustainable supply of natural resources). Critics have referred to such ecocentric perspectives as ecofascism, especially if the ecosystem is always and without exception taking precedence over any other subentity or subsystem (cf. Callicott 2005). *Ecotopians* utilize natural resources by at the same time minimizing its impact on nature. But *Ecotopians*' hunting and eating game, for example, is an indication that the ecosystem in *Ecotopia* is not always and not without exception taking precedence over human wants and needs.

Holistic Well-Being and Sustainability

In a time of accelerating and intensifying globalization, depletion of nonrenewable natural resources and growing disparity of incomes standard economics' paradigm of growth are even more subject to critical scrutiny. Most economists concerned with sustainability and well-being accept that sustainability of nature, society, and economy is not achievable via economic growth alone. Callenbach's *Ecotopia* developed a contrasting worldview in which economy's, society's, and nature's sustainability is a consequence of a "steady-state" economy in which economic growth is not an important indicator for measuring economic progress or society's well-being (Thailand's King Bhumibol Adulyadej proposed a similar concept of sustainability, the Philosophy of Sufficiency Economy, in which economic growth plays a less important part, while the Buddhist value of moderation is considered a key for the improvement of general well-being).

In *Ecotopia* the quality of life or holistic well-being of humans and the ecosystem is considered key indicators of a philosophy of a good life in

general and a sound economy in particular. This paradigm of holistic well-being is similar to since 1972 ongoing attempts in Bhutan which established gross national happiness (GNH), instead of gross national product (GNP), as major indicator of a society's well-being.

Low Consumption and Justice

This relativization of economic-monetary values and the accentuation of holistic well-being are also manifested in prices of goods and services that reflect the real costs. An ethically just price for goods and services includes, for example, costs that reflect and thus monetarize environmental and health impacts. The price of fabric, for example, is comparatively expensive due to its high production costs, which "internalize" (monetarize) health and environmental implications (e.g., external effects such as air, water, or soil pollution). Another indication of the relativization of economic-monetary values is an anti-consumerist attitude, which manifests for example in low consumption lifestyles and in the popularity of easily maintainable and repairable products that have a long lifespan.

Well-being in Ecotopia is considered to be of importance for all currently living humans (intragenerational or intragenerational justice) but beyond that also for future generations (intergenerational or intergenerational justice). The latter is manifested in Ecotopians concern for nonrenewable and renewable resources (e.g., the sustainable forestry and the narrowly regulated and closely monitored harvesting of timber, which has been the paragon for sustainability ever since).

Agriculture

Ecotopian farming regulations permit neither nonorganic fertilizers nor herbicides/insecticides. Fields and forests planted in organic, sustainable, polyculture supply natural, plant-derived renewable, raw materials for building, clothes, and other goods. Organic and sustainable farming also includes waste recycling that is not only

practiced on farms but in all sectors. Farms as well as corporations are co-owned in such a way that all workers are at the same time owners of the business. Forestry regulations based on intergenerational justice demand personal commitment of potential buyers of large amounts of timber who have to work in the forest (e.g., planting new trees) for a certain time that is equivalent to the amount of wood they want to purchase, thereby promoting awareness for sustainability. Prices of all goods, raw materials, and energy reflect the real costs or the ecological footprint. Technically this means that ecological costs (externalities) are monetarized (internalized). This is the reason why prices of fabrics such as cotton and wool are comparably high whereas synthetics are not permitted. Leather and fur are preferred raw materials for clothes and bags instead of fabrics, because of their durability (sustainability) and due to their natural origin. Leather, fur, and fabrics are frequently reused and recycled. Environmental pollution is strictly enforced and punished with severe jail sentences. Farming and production, including energy production, are decentralized. Education fosters environmental awareness by theoretical lessons in biology, environmental philosophy, excursions, and practical garden work.

Food

In Callenbach's ideal ecological state, the ethics of food and its consumption reflect the conception of an antithesis to today's still prevalent American mainstream diet which is seen as ethically inappropriate due to its health risks and because of its environmental externalities. Ecotopian food is (technically) organic, healthy, less processed, and without refined sugar. Besides organic fruit and vegetables from farms and gardens, so-called "core stores" supply healthy but cheaply produced food items such as dried, frozen, and otherwise preserved food, for example, bread, beans, rice, and other staples. If packed, the packaging is biodegradable and recyclable or consists of standardized reusable

containers all of which eliminate or at least minimize external effects on environment and consumers. The food ethical antithesis to mainstream nutrition in western and western-oriented cultures consists also in partially environmental law backup bans on items such as convenience food, sodas, sweetened foods, chewing gum, and microwave ovens. Wine, cafe, tee, marihuana, and cigarettes are not banned, because fun and pleasure (in accordance with nature) are considered as essential for an ethics of holistic well-being or a good life. The consumption of meat and fish is held as ethically appropriate. Hunted game is believed to have “spiritual” powers, and farming of animals must be according to (what technically can be described as) species-appropriate husbandry.

Summary

With the title for the novel Ernest Callenbach coined a name for the sub-genre dedicated to ecological utopias in which *Ecotopia*, with its idealistic impetus and its practical relevance, is the major landmark. Thus, the term Ecotopia today stands for both, as concept in the discourse on environmentally ethical or ecologically ideal living (e.g., Anderson 2010; de Geus 1999) and for practical endeavors and projects creating ecological optimal and environmentally ethical communities and cities. The novel *Ecotopia* situates organic healthy food and organic sustainable agriculture as integral components in the context of an ideal ecologically envisioned good life and holistic well-being.

Cross-References

- Biodiversity
- Community-Supported Agriculture
- Corporate Farms
- Economy of Agriculture and Food
- Environmental Ethics
- Free Trade and Protectionism in Food and Agriculture

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Egg Production: Ethical Issues

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Synonyms

Animal ethics; Animal rights; Animal welfare; Environmental impacts; Food quality; Food safety; Human health; Industrial agriculture; Intensive farming

Introduction

Like any human food of animal origin, eggs raise ethical issues with respect to safety and quality for human consumption, environmental impact, and duties regarding the animals themselves and with respect to a cluster of social issues associated with the economic structure of the egg industry. Eggs do have a number of singular features,

however. On the one hand, egg production does not strictly require the death of an animal, and eggs are consumed by many people who adopt vegetarian diets for ethical reasons. On the other hand, industrial egg production in the so-called battery cages (discussed below) has been an especially visible target for activists promoting more humane care for farmed animals. Ethical critiques of egg production are also plagued by significant gaps in lay knowledge – the fact that eggs and chicken meat are as distinct from one another in terms of ethical issues as they are from pork or milk production being a leading case in point. This article begins with an overview of the methods being employed in contemporary egg production and moves on to consider first the animal welfare issues, second the human health and environmental issues, and finally social issues associated with the production of eggs.

Contemporary Egg Production

Eggs have almost certainly been consumed by human beings since prehistoric times. Eggs became a household product in conjunction with keeping various bird species in captive or semi-captive conditions for a variety of nonfood-related purposes. Eggs from several bird species have become elements in human diets, but chickens dominate on a worldwide basis. Chickens have been kept in close proximity to human habitations for the purpose of harvesting eggs for centuries, usually in flocks of 10 to 50 birds, though it has not been unusual for householders to keep a single animal for this purpose. As the modern food system evolved over the nineteenth century, eggs became available from butchers, grocers, and other market vendors, giving rise to commercial production of eggs on farms. Prior to the twentieth century, this production was an auxiliary activity of farm households, with chickens typically kept near the kitchen and fed on scraps. It was not until the 1930s that a commercial industry of farms specializing in production of eggs for urban markets began to evolve (Oesterle 1995).

The first generation of egg farms for large-scale commercial production utilized large open

areas with feeding and water stations distributed around the area. Producers developed “deep litter” flooring systems that captured urine and manure. Eggs were gathered by hand. These systems began to be replaced by barns where hens were kept in cages suspended above the floor. These cages were designed with wire flooring that allowed eggs to roll out into a trough, significantly reducing the cost of hand collection of eggs. Eventually, cages were augmented with automated systems for delivery of feed and water, for collection of eggs, and for removal of wastes. These automated systems were most efficiently used when cages are lined up in long rows (or batteries), generally hung from the ceiling of the barn in 3–5 tiers. This became known as the “battery cage” system for egg production. Equipment manufacturers developed many variations of the battery cage, with cages ranging from cubes of roughly 14” or 36 cm on each side to rectangles that could be several multiples of 14”, 36 cm dimension on the side where automatic feeders and egg collection machinery were operating. The battery cage became the most widely used practice in industrialized food economies by the 1970s (Stadelman 1995). As discussed below, it has been a frequent target of criticism on ethical grounds.

Equipment for automating egg collection and feed delivery in floor-based systems has allowed this system to coexist with the battery cage. As a market for “non-cage” or “cage-free” eggs began to emerge in the 1990s, floor-based systems were the main alternative to battery cages. By 2010, several alternative systems had been developed. The aviary system looks a bit like battery cages without doors, but it permits birds free movement within the house. Since birds overwhelmingly prefer to nest and lay eggs in the cage-like niches, the aviary is able to utilize automated egg collection that is very similar to that of battery cages. A third alternative is the “furnished cage” or “colony housing system.” Here birds are kept in cages that are much larger than a battery cage – as much as 10’ or 3 m in length and 6’ or 2.5 m in width. These cages are equipped with nesting boxes, perches, and scratch areas that are intended to afford the

opportunity for performing a number of species-typical behaviors believed to be significant for hen welfare (Mench et al. 2011).

Commercial production of eggs in concentrated animal feeding operations (CAFOs) utilizes all of these systems, typically in ventilated and temperature-controlled (but windowless) industrial buildings of immense size. A commercial egg production facility in any industrialized country will generally operate several of these buildings, which will house between 300,000 and one million birds each. Buildings are generally clustered near a centralized facility for washing and processing eggs and preparing them for sale. Eggs are processed either for sale in the shell (shell eggs) or as liquid or powder (breakers). Other food industry firms (such as bakeries) and institutional kitchens (such as hospitals or hotels) are the primary market for liquid and powdered eggs. As markets have become more specialized, producers have followed suit: most egg farms are geared exclusively to either shell egg or breaker markets (Stadelman 1995). This point becomes ethically significant because farms producing for institutional markets have proven to be far less sensitive to consumer preferences for animal welfare or other ethically significant traits.

Hens for egg production become available through a supply chain that begins with a breeding company that develops a particular strain of bird through genetic selection. Breeding companies have started to use genomics and marker-assisted breeding, but genetic engineering has not had commercial application in the egg industry. Breeding companies may operate their own hatcheries or may license independent owners to produce their strains. Hatcheries maintain a breeding stock of hens and roosters: their product is chicks intended for egg production (Stadelman 1995). (Hatcheries may also produce chicks for meat production, but broiler production is increasingly becoming a wholly vertically controlled process.) In 2013, researchers announced a test capable of discriminating the sex of a chicken embryo (Golovan et al. 2013). Male chicks have no value in the egg industry and are destroyed in macerators within minutes of

being born. If embryonic sexing can be made practical for use in commercial hatcheries, it will end the ethically problematic practice of destroying 50 % of the chicks and will save the costs associated with this waste of life.

The methods just described are responsible for an overwhelming majority of the egg production in the industrialized world – perhaps 98 % or 99 % of all eggs consumed. Eggs continue to be produced in traditional “backyard” settings reminiscent of the preindustrial era. In less developed economies, such production may be consolidated for retail sale much as it was done in the United States, Europe, and other industrialized economies prior to World War II. However, the use of industrial methods described above is growing rapidly in the industrializing world and especially in Asia. There are also egg farmers producing free-range and organic eggs in floor-based or aviary systems on a drastically reduced scale, in flocks ranging from 200 to 10,000 birds. Organic egg production prohibits the use of battery cages and requires both outdoor access and the use of organically produced feed. This segment of the market is growing rapidly in the United States and Europe, but most organic production does not impose limits on scale. Thus, most organic production is done by firms that operate floor or aviary systems at industrial scale, and most of these producers also operate barns producing for the conventional caged layer market. Caged production is under a phaseout in the European Union and should have ended entirely by 2013 according to directives enacted in the early years of the twenty-first century. Reports indicate that compliance with these directives is uneven, however (Mench et al. 2008; Millman et al. 2010).

Health and Environmental Issues

Keeping poultry of any kind can be a contributing cause to unwanted health and environmental impacts. The ethics of egg production must therefore consider why these impacts are taken to be harmful and what measures should be taken to mitigate harm or forestall the occurrence of harm, on the one hand, and the extent to which

unwanted impacts can be viewed as costs that are offset by the compensating benefits of egg production, on the other. After many years of uncertainty over the impact of eating eggs on human health, mainly associated with dietary consumption of cholesterol, the current scientific consensus alleviates that concern (Fernandez and Calle 2010). Unwanted human health impacts include food safety, occupational health and safety, and the role that keeping poultry plays in the transmission and control of communicable disease. Environmental impacts include pollution from manure and any other harmful outputs of the egg production process and the secondary environmental impact of producing and consuming inputs to egg production such as feed, fuel, and water.

Food Safety: Raw eggs are an especially good medium for growth of microorganisms, but the egg's shell is also a very effective barrier against the initial contamination of this medium. There are thus good reasons to be attentive to egg safety and reasons to expect that an intact shell egg will be an unlikely threat. Removing and destroying broken eggs becomes the primary means for limiting health risks from eggs. Developing control mechanisms within egg production systems that limit damage to eggs and that identify and eliminate eggs with cracked or damaged shells is the key means for doing so. Commercial producers, processors, and retailers have significant economic incentives for maintaining these control mechanisms, and there has been virtually nothing written on this activity that takes an explicitly ethical standpoint in respect to them. Advocates of industrialized egg production assert that mechanization of the process along with the inventory control that mechanization facilitates yields a food safety advantage for industrialized egg production when compared with traditional methods. This assertion has also received relatively little consideration from an ethics perspective.

In statistically rare cases, freshly laid eggs can be contaminated by *Salmonella* apart from any defect in the integrity of the shell. The occurrence is rare enough that definitive research on the phenomena has proven elusive. Data from the

US industry shows a greater statistical occurrence of this phenomenon in non-cage production systems, especially those in which hens are free to roam about on the floor. Data from the European industry has shown just the opposite result. Some investigators have speculated that this difference may arise from the fact that the non-cage production facilities from which data has been collected in the United States tend to be relatively old, while those in Europe are new, many having been placed into production only 1 or 2 years before data was collected. However, others cite the European data as evidence for the inherent superiority of non-cage systems and tend to ignore conflicting data from the United States (Holt et al. 2011). This is, as yet, an issue that could be a topic for future investigation from an ethics or philosophy of science perspective.

Occupational Safety and Other Health Impacts: One US egg producer who was at the center of a controversy over *Salmonella*-contaminated eggs in 2011 had also been cited for numerous workplace violations. Yet, there is very little to no work on the extent to which egg production can be associated with health or safety impacts for the human beings who are employed in egg production facilities, and any connection between worker health and safety and the methods or corporate culture of egg production is, at the time of writing, purely speculative. Animal production of all kinds has been subjected to ethical criticism for excessive use of antibiotics, and some critics have included egg production. However, there are no economic advantages to be obtained from feeding subtherapeutic doses of antibiotics to laying hens, and egg producers assert that antibiotics are not administered to hens in industrial egg production.

There are also human health issues associated with the role that agricultural animals may play in zoonosis, in this case the crossover between avian and human infectious diseases. Avian influenza (or "bird flu") would be an example that is familiar to most people. Some speculated that keeping a large number of birds closely confined in an enclosed space provides an ideal opportunity for new infectious diseases to evolve and to cross the

species barrier to human workers who are in contact with them (Hinchliffe and Bingham 2008; Nickelsburg 2013). Others have argued that infectious diseases are much more likely to evolve in non-domesticated species and that contact between chickens and other species of wild birds is a much more likely source of zoonotic disease (Otte et al. 2007). Since great care is taken to protect laying hens kept in industrial facilities from contact with wild bird species, advocates of this perspective believe that traditional production methods, as well as backyard chickens and organic egg production where birds have outdoor access, are much more conducive to zoonosis. What may be of most interest from an ethics perspective is the way that debates over zoonotic disease and egg safety tend to be cited as evidence that bears on the scale and organization of egg production. Animal welfare or socioeconomic considerations may be ethically more fundamental to the reasoning process of individuals who take sides in these health-related debates.

Pollution and Environmental Impact: CAFOs are point sources for air, water, and soil pollutants associated with manures and other animal waste matter. Egg production in CAFOs has incorporated numerous devices to monitor and regulate ammonia levels both within and near buildings. After a decade or more of difficulties in capturing nitrogen from manure, current systems are very effective in capturing, drying, and reusing manure to fertilize soil. As compared to beef, milk, and pork CAFOs, poultry CAFOs and especially caged layer systems with automated manure collection have transformed animal wastes from being pollutants into being a coproduct with significant economic value. Ironically, it is the more traditional non-cage facilities for egg production that are now more strongly associated with animal waste management issues (Xin et al. 2011).

A life cycle approach to evaluating the environmental impact would also include feed and fuel utilization as well as the environmental impact from manufacturing, operating, and disposing of buildings and machinery. As of this writing, life cycle analyses are only now beginning to appear for all phases of egg production.

In a further irony from the perspective of those who oppose CAFOs and industrial egg production, the efficiency of feed utilization in these facilities may prove to be the dominant factor in assessing the more comprehensive environmental costs of consuming eggs in the human diet. Facilities that use feed efficiently require less land and less carbon fuel to produce and transport the grain fed to laying hens. Non-cage systems currently tend to be less efficient both due to loss from the machinery for distributing food to birds and because the systems allow hens to engage in behavior that wastes feed. The efficiency of many traditional systems is lower still for purchased feed, though allowing hens to consume kitchen scraps and to graze on yard grasses may compensate for these inefficiencies (Mench et al. 2011). As with human health impacts (and distinct from environmental issues associated with other animal food commodities), the ethical significance of environmental impacts of egg production may reside in the way that they do or do not augment or offset more fundamental debates over animal welfare and socioeconomic impact.

Hen Welfare

The welfare of hens in egg CAFOs is a signature issue in food ethics. The crowded condition of hens in caged layer systems is one of the most frequently cited problems in ethically oriented critiques of industrial food production. Efforts to address this situation are usually addressed within the framework specified by two of the Brambell Commission's "Five Freedoms": hens should be "free from discomfort" and "free to express normal behavior," (Farm Animal Welfare Council 2009). The lack of space allocated in egg production facilities should not be source of pain or discomfort and should be sufficient to allow for expression of behaviors typical for mature, egg-laying hens. The ethical mandate for limiting pain can be specifically derived from Peter Singer's earliest advocacy on behalf of animals, while the need to express a species-typical behavior might have been grounded in

Bernard Rollin's idea of *telos* – a set of genetically based needs and drives that provide the basis for respecting animal rights (Rollin 1981, 1995).

As a practical matter, there have been two responses to crowding. One is to utilize “cage-free” or “free-range” egg production systems where birds are not physically constrained in the way that they are in the battery cage production system discussed above (Rollin 1995). This approach has been the basis of European directives that have banned battery cages and has been adopted elsewhere as a response to consumer demand for ethically produced eggs. The alternative (and not mutually exclusive) approach has been to specify a minimum space allocation for each hen as one component of an animal welfare standard or guideline. This approach is potentially compatible with battery cage systems and also with the furnished or “enhanced” cage system, also referred to as “colony housing” (Lay et al. 2011).

Space allocation is only one dimension of welfare in egg production. Basic physiological elements include access to food and water and living conditions that are free of ammonia and fecal material – criteria that overlap with environmental impacts. The ability to perform natural or species-typical behavior will also include a bird's access to nesting areas and the ability to sit on perches or perform grooming behaviors such as wing flapping and scratching claws. Not all cage-free or free-range facilities will necessarily be equipped with furnishings that permit these behaviors, nor are they necessarily guaranteed simply by focusing on crowding. Access to the outdoors is a somewhat controversial component of hen welfare. Considered in isolation from other aspects of a hen's environment, outdoor access may not be deeply significant, and if access areas expose birds to attacks from predators, going outdoors can be inimical to survival (Millman et al. 2010; Lay et al. 2011).

Current thinking on the ethics of animal welfare recognizes three broad domains. Standard *veterinary health indicators* of welfare include morbidity and mortality, as well as physiological functions such as respiration, digestion,

reproduction (egg production), growth, and development. Pain, discomfort, and correlative indicators of satisfaction or feelings of well-being constitute a set of *cognitive indicators* for welfare, while nesting, wing flapping, and scratching or going outdoors are *behavioral indicators*. A key area of philosophical debate arises in connection with the interpretation of behavioral indicators. One way of understanding the ethical significance of an ability to perform natural or typical behavior is to presume that birds suffer when they are prevented from doing so. That is, one assumes that hens experience some degree of cognitive discomfort or frustration when their living conditions preclude the performance of an indicated type of behavior. On this interpretation, the ethical significance resides in the experience or feelings of the animal, and the behavior itself is an easily observable and specifiable signal that can be addressed through policy or management. The alternative view is to attribute ethical significance directly to the behaviors themselves, irrespective of whether birds experience frustration or dissatisfaction when they are unable or unwilling to perform them (Swanson 2010).

These contrasting views underlie several points of continuing dispute with respect to current and future initiatives that might be taken on behalf of animal welfare in egg production. Outdoor access is an immediate case in point. Although production systems for eggs that can be labeled as organic require outdoor access, producers often observe relatively little use of outdoor areas, especially when outdoor temperatures are uncomfortably hot or cold. Given the assumption that it is the underlying experience of frustration that makes a behavior ethically important, there is no particular problem associated with this. Birds are in some sense choosing not to utilize outdoor areas, and it is reasonable that their actual behavior indicates a preference for remaining indoors. On the alternative view, a producer would have an ethical obligation to encourage or perhaps ensure that birds *do* use outdoor activities. Failure to do so would be regarded as unnatural and ethically problematic (Veissier et al. 2011).

These two ways of conceptualizing animal welfare have been noted by numerous authors. Peter Sandøe and Mike Appleby have characterized the first viewpoint as *welfarist* because it emphasizes animal feelings and preference satisfaction. The view that sees performance of natural behaviors as intrinsically valuable is what they call *perfectionist* because it specifies the behavior as something to which a producer (and perhaps the animal itself) should aspire, irrespective of an individual preference (Appleby and Sandøe 2002). Bailey Norwood and Jayson Lusk characterize people who prioritize the cognitive experience as “basic welfarists” and those who value performance of species-typical behaviors as “naturalists.” Norwood and Lusk have conducted empirical research on human attitudes to animal welfare and have noted that some respondents will regard aspects of animal comfort and even survival as relatively unimportant, as long as the animal is living a life that would be comparable to the life that they would lead in a wild or natural setting. For example, such respondents do not regard loss of life from hawks or other predators as particularly contrary to animal welfare. According to Norwood and Lusk’s research on the US population, basic welfarists comprise slightly less than half of Americans, while roughly the same number are naturalists, with the remaining minority being classified as “price seekers” who appear not to value animal welfare beyond the satisfaction of the most basic physiological needs (Norwood and Lusk 2012).

This basic philosophical divide is also relevant to the use of genetic approaches to address welfare problems in egg production. For welfarists, it would presumably be permissible to resolve a problem by breeding animals that were less inclined to the behavioral patterns or needs associated with pain or suffering. For example, hens have a genetically based drive to establish a dominance order (a pecking order), and in small groups they will do so through pecking at each other’s feathers. Once established, this behavior typically recedes, but some individuals persist in feather pecking, and in large groups it may be impossible for birds to establish stable

dominance rankings. In any case, in cage-free environments with a quarter of a million birds housed under a single roof, relatively weak birds will be subjected to pecking by so many different animals that they will suffer significant injuries, stress, and cognitive suffering. A potential response is to use breeding to develop birds with much weaker drives to establish a pecking order (Cheng 2010). The welfarist position will presumably offer a strong ethical argument in favor of such genetic strategies, while a perfectionist or naturalist perspective would presumably regard the attempt to remove this species-typical behavior as inimical to the naturalness of the bird’s life.

More extreme genetic strategies might substantially alter a bird’s basic physiological capabilities. Egg production has provided one example of this with blind chickens, a genetically stable strain of birds that are less inclined toward aggressive behaviors, presumably associated with their lack of sightedness. The blind chicken strategy for addressing welfare in egg production has been discussed in the philosophical literature and has, at this writing, spawned a more extended debate on the Internet. However, blind chickens have never been seriously proposed as a practical or ethically defensible approach for addressing welfare in egg production, and empirical research on blind chickens indicates that their welfare is so compromised by congenital blindness that it is unlikely to ever become a feasible approach in practice. This does not prevent the blind chicken idea from serving as a potentially useful thought experiment, often in conjunction with speculation on the potential for genetic modifications that might eliminate an organism’s capability for conscious experience altogether. Such a thought experiment was pursued in connection with meat-producing (broiler) chickens in Margaret Atwood’s work of speculative fiction *Oryx and Crake* (Warkentin 2006). Philosophers continue to explore the ethical arguments associated with alternative rationales for addressing animal welfare issues in livestock production through these more extreme forms of genetic modification (Thompson 2008).

Summary

Health and environmental issues, on the one hand, and hen welfare, on the other, provide the general framework in which ethical criticisms of industrial egg production continue to be mounted. The overall ethical evaluation of egg production should also take dietary benefits of egg consumption and consumer cost into account (Watkins 1995). At this juncture, ethical issues in egg production conjoin with arguments for and against vegetarianism or vegan diets. Public debates as well as critiques within the philosophical literature often overlook some basic socioeconomic and biological elements of egg production when health, environmental, and animal welfare critiques of egg production (especially battery cages) conjoin with these broader themes. It is important to underline the utter separation of meat and egg production in modern industrial agriculture. Critiques of broiler production have their own merits, but the ownership structure of this industry, the production methods, and the breeds of birds that are used have little carryover to a critique of eggs. To note just two instances, the bone breakage that has been observed among broiler chickens does not occur in egg-laying hens, and while broiler production has become highly concentrated, the ownership of egg CAFOs remains more competitive and diverse.

In addition, many vegetarians continue to consume eggs. Ethical evaluation of egg production is thus highly pertinent to the ethical case for vegetarianism. Second, eggs are available in convenience stores and other inner city food outlets. They often are among the healthiest items available at fast-food restaurants. The ability to prepare eggs is widely dispersed and does not presuppose education. As noted above, egg production does not involve the use of antibiotic additives to feed. There are thus a number of reasons to view the ethical analysis of egg production and consumption as having a logical structure that differentiates eggs from other animal food commodities. Animal agriculture is not monolithic, in any case. Industrial producers specialize in one animal product, and the producers

of one animal commodity view the producers of other types of animal protein as fierce economic and political competitors. In general, scholarship on ethical issues in all areas of food animal production would benefit from more detailed understanding of the structure of animal industries.

The above survey of ethical issues is not exhaustive. One welfare issue that has been omitted concerns the depopulation of CAFOs, a process fraught with technical difficulties. Because spent hens are not slaughtered for meat, they have little economic value, and there is little incentive for even the most basic attention to humane killing methods. A second set of issues arise in conjunction with the regulatory framework and the various mechanisms that are being used to organize and influence egg production. Like other animal producers, the egg industry has been targeted by activists and journalists seeking to develop sensationalistic stories – a practice that raises ethical issues itself. As such, there are many topics that can potentially engage future work on the ethical issues that arise in conjunction with industrial egg production.

Cross-References

- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Industrial Food Animal Production Ethics](#)
- ▶ [Sustainability and Animal Agriculture](#)
- ▶ [Telos and Farm Animal Welfare](#)

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Emergency Food System: Soup Kitchens and Food Pantries

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Synonyms

Bread lines; Emergency food; Food access; Food banks; Food security; Hunger; Pantries

Introduction

More than 800 million people globally do not have access to sufficient amounts of food on a consistent basis. The emergency food system, also referred to as the emergency food assistance system (by the USDA) or emergency food relief, is part of the private sector's efforts to address hunger and food insecurity among low-income individuals and families, as well as other vulnerable populations such as seniors and the homeless. As the name implies, programs under this umbrella aim to supply food to people in need on a temporary and supplemental basis at no cost. However, in many parts of the world the experience of hunger is an ongoing issue for a large

number of individuals, and as such people in need may access emergency food resources on an ongoing basis and rely on these resources as their primary means of accessing food.

In the USA, approximately one in six people, including about 17 million children, do not have continuous access to enough food to eat to meet their nutritional needs (Coleman-Jensen et al 2012). Given these levels of poor access many people around the world, including the USA, must rely on emergency food in order to stave off hunger and attempt to meet their nutritional needs critical to maintaining health and well-being. Due to persistent social and economic conditions that continue to make hunger and food insecurity a growing problem in the USA, it is clear that emergency food assistance programs have ironically taken on a regular and ongoing role in food provisioning for many Americans. Soup kitchens and food pantries are the dominant forms of emergency food in the USA. Estimates ranging from 12 to 21 million people in the USA annually utilize these resources to supplement their dietary needs. With continued threats to federal safety net programs such as Food Stamps (SNAP); Supplemental Nutrition Program for Women, Infants and Children (WIC); and the school lunch program, this condition of long-term reliance on emergency food is likely to continue (Nestle and Guttmacher 1992).

Soup kitchens, also referred to as emergency kitchens, breadlines, or meal centers, provide prepared foods for individuals and families to eat on-site. Meals at soup kitchens are typically provided for free, though sometimes clients are charged a low price at some facilities. Soup kitchens are nonprofit organizations and are typically staffed by volunteers and/or run by faith-based organizations. Much of the food and related resources used by soup kitchens are provided through charitable contributions.

Food pantries, on the other hand, are sites that distribute groceries and other food products for consumption off-site, most typically for at-home preparation. The groceries distributed to clients typically include major staple items such as grains, beans, and other proteins, as well as

canned fruits and vegetables, among others. Foods are packaged together to include these staple items at most food pantries, though a smaller percentage of pantries provide for consumer choice, where clients “shop” the pantry shelves for preferred items and are not required to take products they do not typically consume. Food distributions to pantry clients are expected to last for several days.

Both soup kitchens and food pantries are viewed as critical community resources that support low-income individuals’ and households’ dietary needs. The majority of pantry and kitchen clients report high levels of satisfaction with the quality and quantity of foods and services they receive. In addition, there is a great deal of overlap among kitchen and pantry clients, with almost three-quarters of emergency food recipients using two or more resources. At the same time, however, there is ongoing concern among hunger and food policy activists that the gap filled by the emergency food system serves as a pressure valve that diverts energy and concern away from addressing the fundamental structural issues at the root of this persistent problem of hunger in the USA (Winne 2005).

This entry centers on the emergency food system in the USA, with a focus on food pantries and soup kitchens. The key issues of poverty, food insecurity, and hunger, which are the root problems and ultimately form the need for this system, are also addressed here in order to provide some background and context to the practices and understanding of emergency food. In addition, as the quality and quantity of food consumed is fundamental to health and well-being, the issues of health-related outcomes associated with food insecurity will also be briefly discussed in this entry.

Poverty, Hunger/Food Insecurity, and Health

Hunger and access to food in the USA are discussed in terms of food security. Hunger is a frequent condition of food insecurity and involves the involuntary lack of access to food

that is linked to the development of malnutrition over time (Cook and Frank 2008). Approximately half of emergency food clients are food insecure with hunger. Food security denotes access to readily available, healthful, culturally appropriate, and safe foods by all people, sufficient to meet the nutritional requirements for an active and healthy life. Thus, alternatively food insecurity is the condition of insufficient or uncertain availability of these foods or other barriers to acquiring these foods. Food insecurity may result in individuals seeking out foods in ways outside of the conventional food system, including utilizing emergency food supplies. The majority of emergency food recipients identify as food insecure, with approximately half of clients identifying as food insecure with hunger. Recently, the USDA moved to no longer report the number of households that experience food insecurity with hunger. This move has come under fire by food advocates and activists. Joel Berg of the New York City Coalition Against Hunger (NYCCH), for example, states strong opposition to this move discounting the arguments the panel responsible for making this decision proposed, including the issues of measurability and the political nature of the word *hunger* (Wilde 2005). Berg argues that *hunger* in fact is a term that is used broadly and is, or can be clearly defined, and the move to eliminate this language itself is political and an attempt to remove the imagery of severe deprivation. The use of the term is still being debated among policy makers, scholars, and advocates with concern for the conceptual and ethical implications the language of hunger versus food insecurity connotes.

In the USA, food insecurity is regularly measured at local, regional, and national levels (USDA/ERS nd). Food (in)security is often measured at the household level and examines both physical and economic access to appropriate foods to meet nutritional needs of all members of the household. The US Census Bureau, through the Current Population Survey (CPS), collects the primary national measurement of food security in the USA. This survey, called the Food Security Scale (FSS), includes 18 questions examining household budget allotted for

food, quantity and quality of food available for all members of the household, and instances of reduced food intake for adults and children in the household. The results of the FSS are reported by the US Department of Agriculture's Economic Research Service (USDA/ERS). This data is critical in informing programs and policy related to food access and emergency food support.

Food insecurity is a major health issue, especially among children, with infants and toddlers at particular risk for serious health implications and developmental problems (Cook and Frank 2008). Those making food purchasing decisions for households, most typically mothers, often have to navigate food choice and make tradeoffs such as choosing quantity over quality to prevent family/household members from experiencing hunger. Some of these tradeoffs might include choosing lower-cost energy-dense foods, over higher-priced nutrient-dense whole foods. There is some research that suggests these lower-cost energy-dense foods, which typically are more processed and contain higher amounts of fats and sugars, may contribute to adverse health outcomes. These foods typically are comprised of refined grains, added sugars, and fats, such as pre-prepared and prepackaged convenience foods (Drewnowski 2004).

In addition, people utilizing emergency food resources report more hardship with health and material resources than the general population – reflecting higher rates of poverty. Approximately half of pantry clients and two-fifths of kitchen clients report “fair to poor” health, as compared to a third of the general population. This poorer-than-average health status among emergency food services clients may be a barrier to and a reflection of their access to healthful foods. In addition, often times, mothers and other caregivers may reduce their own food intake in order to provide food for children in the household. This sacrifice on the part of caregivers further compromised their own health status.

In the USA, hunger and food insecurity are closely tied to poverty and consequently to the access to emergency food. This is largely due to the absence of state and federal safety nets and systematic benefits that ensure adequate food

supplies to individuals and households, which contrasts with other developed regions of the world, such as many nations in the European Union (Nestle and Guttmacher 1992). These conditions position the emergency food system to be forced to whatever extent possible to attempt to fill the gap left by the lack of federal support for the members of the food-insecure public.

The majority of emergency food clients in the USA report utilizing these resources due to low or fixed incomes. Poverty thresholds in the USA are closely tied to food access and are constructed around the affordability of food based on historical estimates of the amount of funds necessary to purchase a “minimally nutritious diet.” The majority of emergency food clients live at or below 130 % of the US poverty line (USDA/ERS nd). This threshold is set federally and does not take into account regional differences in the cost of living, including variations in the cost of food, which can differ dramatically by geography in the USA. Thus, urban centers, particularly on the coasts, may face even higher food costs, but see the same benefit levels and thresholds, further comprising food access for these residents.

Emergency Food System

Throughout the period of the 1980s and 1990s, there has been a shift in food policy reducing the level of federally supported food assistance programs while at the same time the number of individuals in the USA requiring food assistance has been on the rise (Nestle and Guttmacher 1992). This erosion of federal level support has shifted the responsibility of food assistance to the state level including the private sector, as mentioned above. Much of the private sector is comprised of volunteer driven community-based and faith-based organizations that work tirelessly to organize and distribute food resources to those in need. However, Nestle and Guttmacher suggest that this shift is highly problematic due to the lack of adequate resources available through the private sector to meet the growing demand of hungry Americans. Furthermore, it has been suggested that the scale of this problem is

unconscionable in a country with one of the largest economies in the world such as the USA, further suggesting that the federal government must take a larger role in addressing hunger and food security issues.

Much of the private sector work in emergency food is structured through a distribution system with food banks at the center that administer food and other related goods to local sites – food pantries and soup kitchens – for consumption by clients (Arnold 2004). Food banks are typically nonprofit organizations and may be independent, though many are part of national networks and partnerships. Food banks developed as repositories of emergency food and were once synonymous with food pantries. However, over time, food banks came to expand their role in the collection of food and shifted away from distributing food to consumers and toward working in collaboration with food pantries – which remained in the role of direct distribution – and soup kitchens. Second Harvest (n.d.) is a national organization, which was founded in 1971 and is the largest hunger-relief network in the USA. It administers a national network of food banks that supplies soup kitchens and food pantries across the USA.

The US government also supplies food to emergency food relief programs through The Emergency Food Assistance Program (TEFAP). TEFAP began in 1981, as the Temporary Emergency Assistance Program, distributing commodity foods, and is now legislated under the Farm Bill of 1990, where it was given its current name. In 2009, federal funding for TEFAP was over 600 million dollars, and the program provided over 700 million pounds of USDA commodity foods to states, to be distributed through local emergency food providers. Over 60 types of food products are made available through TEFAP and these include canned and dried fruits, canned vegetables, fruit juice, dried egg mix, meat/poultry/fish, dried beans, pasta products, peanut butter, rice/grits/cereals, and soups. TEFAP also provides administrative funds to states in order to support the distribution and storage of these food products.

The emergency food system also distributes a great deal of food that would otherwise go to

waste in the USA. This food is gathered and distributed by various food rescue organizations and include many donations from corporations. Much of this food, if not donated and distributed through the emergency food system, would end up as landfill. This activity contributes to the emergency food system's reputation as a food waste prevention option – increasingly part of the identity and mission of many food banks, which also sometimes are referred to as food rescue organizations (Poppendieck 1998). Food activist Mark Winne suggests that this role of food waste prevention/food rescue should not be such a major part of the emergency food system as it further contributes to serve as a pressure valve and distraction for policy makers and the public in addressing the more pervasive issues that set the conditions for hunger.

While some support for the emergency food system comes from the federal government, the majority of funding, food products, and labor come from charitable organizations and volunteers. Approximately two-thirds of emergency food providers are affiliated with faith-based organizations. A number of these organizations do ask clients to engage in prayer or related religious activities with them while receiving emergency food services. In a report by the USDA/ERS (n.d.), it states that the majority of clients are comfortable with these requests.

In a recent study conducted by the USDA/ERS, 90 % of clients reported that they were satisfied with the quantity and quality of the food provided at pantries and kitchens. However, a minority of clients in this study reported experiencing difficulty acquiring needed food at times, mainly due to barriers with transportation.

Soup Kitchens

As noted above soup kitchens are an emergency food resource, which provides prepared, often hot, meals to clients for consumption on-site. Meals are provided to individuals and families in need and typically do not require the provision of means testing or income requirements. Approximately a quarter of kitchen clients visit

daily, with just under half visiting 2–5 days per week. Many clients rely on these meals to sustain them for months at a time, while a smaller proportion may rely on kitchens for years.

The majority of the food and labor that supply soup kitchens come from local resources, most often from charitable donations and volunteer support. Most soup kitchens are affiliated with faith-based organizations such as churches, which provide the facilities for preparing meals as well as the space to serve them to clients. Most soup kitchens are open during weekdays and serve either lunch or dinner, though usually not both. Even though soup kitchens are considered a form of emergency food relief, many individuals rely on them as a regular form of nutrition and sometimes for up to several years. For vulnerable populations, including homeless and the elderly, this may be their only meal of the day.

In the USA, soup kitchens entered mainstream awareness during the Great Depression but have been providing prepared meals to the needy since the nineteenth century. The Humane Society of New York established the first recorded soup kitchen in the USA in 1802. Soup kitchens continued to serve communities, but fell out of popularity during the 1820s as prevailing attitudes toward providing such charitable services shifted toward moralizing concerns related to the destruction of self-reliance among the poor and away from an ethic of providing for material needs of those less fortunate. However, the Great Depression brought on a resurgence of soup kitchens, which grew to feed millions of people during the 1930s.

The USDA/ERS reports that during 2000 there were more than 5,000 soup kitchens in the USA, which served nearly a half million meals on a typical day and 173 million meals per year. Furthermore, over one million different individuals were served by soup kitchens in a typical month, with almost a quarter of these participants served being children under 18 years of age. However, most kitchen clients are single adults, the majority of whom are men. Nearly half of kitchen clients identify ethnically as non-Hispanic black, while just over a third identify as non-Hispanic white.

Food Pantries

As described above, food pantries are a community-based emergency food resource that provides food products to households for preparation and consumption off-site, most commonly in the home. The USDA/ERS estimates that approximately 32,000 pantries were in operation during 2000 and during an average month distributed 239 million pounds of food to over four million different households. This distribution is equivalent to approximately 2.2 billion meals per year.

Recipients of food for at-home use typically are required to meet income eligibility criteria set by the state. Nearly half of those receiving food from pantries are children under 18 years of age, with about a quarter of clients being single adults. Approximately half of pantry clients identify as non-Hispanic white and just under a third identify as non-Hispanic black. Pantry clients may be restricted or limited as to the number of visits per month they may make to a given pantry as directed by the pantry administrators. Of pantry clients, about half visit once a month; however, this is unlikely to reflect actual need, but rather system constraints placed on individuals and households.

The majority of food supplied through pantries is through charitable donations of funds or food products, along with some public funding and distribution of commodity goods as described above. Much of the distribution of this food is through food banks which are centralized locations that process food donations from individuals and organizations, as well as government distributions and coordinate among food pantries across a metropolitan area, region, or state. These organizations themselves are non-profits and many are affiliated with national organizations such as Second Harvest, as described earlier. These organizations are critical in also rescuing food – the process of coordinating with food manufacturers and retailers to obtain foods that are not suitable for commercial sale but still safe and appropriate for consumption. This process takes an enormous number of volunteer hours in order to sort through foods and ensure it is safe for pantry clients. In many ways this

process of sifting through donated food, a good proportion of which is not salvageable, serves the needs of donors as much as if not more than the recipients of this surplus food. Moreover, the energies put into “rescuing” food further serves to divert attention away from the pervasive problems that cause hunger to persist in the USA.

Food pantries distribute foods received from food banks, as well as local donations and purchased food stocks. The typical pantry, as mentioned above, limits visits per household to on average once a month. This is in contrast to the rates of average US households that shop for food at stores approximately twice per week. Clearly the resources available to them limit pantries, but these limitations severely constrain and shape the food access and practices of the communities served. There is a movement to increase the number of possible visits to pantries among administrators, emergency food provider, and food advocates, although the practical constraints of limited resources, space, food, and volunteer labor may remain a barrier for many organizations.

Discussion

Low-income individuals and households use a variety of strategies to meet their food and nutrition needs. However, many depend solely on emergency food system services such as food pantries and soup kitchens over long periods of time due to persistent economic difficulties as well as obstacles in accessing and/or insufficient public safety net programs. While a good number of clients utilize a mix of public and private resources, some clients prefer to avoid or have too much difficulty navigating government benefits and programs and thus solely rely on private sector support. This is highly problematic as the emergency food system is ultimately designed for short-term and periodic use and is ultimately not sufficiently resourced to serve as a long-term solution to hunger and food insecurity.

Emergency food, including food pantries and soup kitchens, along with other charitable activities that support individuals and families struggling with food insecurity may partly decrease

the risks of lack of availability and access to healthful foods, but the impacts of these activities can be difficult to measure as they are not systematically evaluated as part of national “safety net” programs such as food-related benefits including the Supplemental Nutrition Assistance Program (formerly known as Food Stamps) and aid to Women, Infants and Children (WIC), as well as feeding programs like school lunch. Furthermore, with the continual decline in funding and popular support for safety net programs, the emergency system takes on a greater role in feeding the hungry while at the same time serving as a pressure valve distracting the public and policy makers from the social and moral problem of hunger and food insecurity.

In a recent report from the USDA/ERS, it is suggested that more emergency food clients may participate in public food assistance programs if it were easier for these individuals and households to determine their eligibility. For this to be possible, these programs would need to include expanding efforts around outreach and education among clients and providers. However, the researchers from this report do suggest additional research is necessary to further understand how to facilitate the increase of access to these programs.

The USA is a wealthy nation with many resources that could address the persistent problem of food insecurity and hunger in a systematic way. While emergency food is a valuable resource to families and individuals in need, it cannot replace a comprehensive policy intervention that ensures the distribution of healthful foods to all. At the same time, even though there may be as many as 40 million Americans experiencing hunger over the course of a year, the US public has a limited understanding and awareness of the conditions and issues related to food insecurity and hunger. Clearly more research and education must be done to improve understanding among the public in order to build support for the types of policy and program intervention changes that must be made in order to solve the problems of food insecurity and hunger in the USA in a comprehensive manner.

Poverty is a critical factor in hunger and food insecurity. In the USA, unlike other regions of the

world, enough food is produced to feed everyone in the country. So it is poverty that remains the greatest barrier to accessing healthy foods for low-income individuals and households in the USA. Currently, efforts to relieve hunger and address food insecurity are dominated by the private sector, particularly charitable and faith-based organizations addressing these problems in a valuable albeit ad hoc manner, with a great deal of good will but limited resources. However, in the USA, the major obstacle to a more systematic national intervention appears to be a lack of political will in the face of growing neoliberalism in various social sectors including health and social welfare.

Summary

The emergency food system, particularly food pantries and soup kitchens, provide a vital service to up to 70 % of individuals and households in the USA that may be at risk for hunger and in need of greater access to healthy foods at some point during a given year. Many of these individuals and household members are low income or elderly on fixed incomes, as well as other vulnerable populations such as the homeless. These groups experience some form of food insecurity due to limited resources and lack of a systematic public safety net program and therefore rely on the services provided by the emergency food system in order to meet their nutritional needs vital to maintain health and well-being. In the USA, more systematic policies and programs must be enacted to both compliment and support the valuable work of private sector emergency food, as well as find definitive and enduring solutions to the major problems of food insecurity and hunger in the country.

Cross-References

- ▶ [Food Security](#)
- ▶ [Food Waste](#)
- ▶ [Obesity and Responsibility](#)
- ▶ [Poverty and Basic Needs](#)

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Environmental and Animal Pragmatism

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Synonyms

American pragmatism; Eco-pragmatism; Ethical pluralism

Introduction

Environmental pragmatism is a cluster of positions within environmental philosophy that brings ideas from the American philosophical pragmatist tradition to bear on methodological and theoretical issues within environmental philosophy and ethics. Environmental pragmatism began to emerge in the environmental ethics literature in the early 1980s in light of concerns over the ineffectiveness of environmental ethics on environmental policy. Animal pragmatism emerged within animal ethics and philosophy in the early 2000s, bringing pragmatist thought to bear on a variety of human-animal relationships, as well as relationships between conflicting positions on animal ethics.

Environmental Ethics Prior to Environmental Pragmatism

The emergence of environmental ethics as a subfield of philosophy in the 1970s arose as a rejection of the ability of standard ethical theories to account for the value of nonhuman nature. Conventional ethical theories can be used to understand nature as having instrumental value, for example, when determining that humans are harmed through environmental degradation, or in the judgment of nature to be aesthetically pleasing. Nature, on a standard view, is valuable because it matters to humans. Ethical theories that ground the value of nature, as well as the value of all things, solely in their importance to humans are known as “anthropocentric” theories. According to these theories, only humans have intrinsic value; everything else has extrinsic or instrumental value for us. Reasons given for the intrinsic value of humans differ depending on the theory. For instance, utilitarianism attributes intrinsic value to any being that has the capacity to suffer; deontological ethics attributes intrinsic value to humans based on our rationality and autonomy.

The basic contention of early environmental ethicists is the broad claim that nonhuman nature has intrinsic value. Hence, conventional ethical theories, due to their anthropocentrism, fail to

capture the true value of the environment. If these views are inadequate, then new views need to be presented which are nonanthropocentric, that is to say, nature is valuable in itself and that the value of nature does not depend on its importance to humans. While environmental ethicists generally agreed that anthropocentrism did not provide a proper foundation for the value of nature, there are a number of other potential ethical principles that could serve as a foundation for the intrinsic value of nature. For example, according to biocentric theories, individual life forms, regardless of their possession of sentience, rationality, or autonomy, possess intrinsic value. According to ecocentric or holistic ethical theories, intrinsic value lies not in individuals, but instead in ecosystems or biotic communities as a whole. Philosophers such as Holmes Rolston, III, J. Baird Callicott, and Paul Taylor engaged in scholarly debates over which kind of nonanthropocentric ethical theory was the true foundation for the intrinsic value of the environment.

Given the connections existing between environmental ethics and the environmental movement, these theoretical positions were intended to provide a basis for stronger environmental policies by providing arguments for the intrinsic value of nature. However, while the field of environmental ethics has flourished on a theoretical level within academia, many of its key figures have lamented the relative ineffectiveness of the field in regard to contributing to increased interest in and protection of the environment outside the academy. It is here that environmental pragmatism gained traction within environmental ethics as a way of increasing the field's relevance.

American Pragmatism in Environmental Ethics

Though environmental ethics diverged from conventional Western ethics in its defense of the intrinsic value of nonhuman nature, it retained important similarities to theories such as utilitarianism and deontology in terms of its emphasis on foundationalism. American pragmatism rejects the idea that such foundations are necessary for

ethics; instead it emphasizes context and situatedness. Rather than developing a fully formed ethical theory in the abstract and then applying it to particular concrete situations, pragmatism favors a case-based approach where an ethical principle may be applicable in some cases but not in others. Rather than arguing for and defending a certain set of principles and sticking to it regardless of the circumstances, pragmatism is geared toward finding solutions in a situation. Pragmatism recognizes that the world is dynamic, rather than static, and calls for a way of doing ethics that takes this into account as well.

Weak Anthropocentrism

Bryan G. Norton is one of the first philosophers to bring ideas from the pragmatist tradition to bear on issues within environmental ethics. Norton's 1982 papers "Environmental Ethics and Nonhuman Rights" and "Environmental Ethics and the Rights of Future Generations" convey his doubts regarding the possibility of deriving an environmental ethics from the rights or interests of nonhumans as well as future generations of humans, respectively (Norton 1982a, b). In 1984, Norton introduced the concept of "weak anthropocentrism" to the environmental ethics literature (Norton 1984). In a pragmatic turn, weak anthropocentrism entails a rejection of the dichotomy between anthropocentrism and nonanthropocentrism that has been perpetuated by environmental ethicists, as well as the alleged necessity of providing nonanthropocentric arguments for the value of nonhuman nature.

Norton distinguishes weak anthropocentrism from "strong anthropocentrism" (Norton 1984). Strong anthropocentrism is the view that felt preferences of human individuals are the determinants of value, and this is essentially the view which has previously been referred to simply as "anthropocentrism" and which has spurred the development of environmental ethics as providing an alternative to it. Because strong anthropocentrism takes the value of nature to rest solely on the satisfaction of human preference, this view can be used to justify the exploitation of nature with no ethical recourse.

In contrast, weak anthropocentrism provides a basis for criticizing purely exploitative actions toward nature by recognizing the strong ties between humans and other species (Norton 1984). As Norton writes, “[t]o the extent that environmentalists can show that values are formed and informed by contact with nature, nature takes on value as a teacher of human values” (1984). So, while strong anthropocentrism implies that humans simply develop or construct values and then impose these on nature, weak anthropocentrism essentially views the relationship between humans and nature as being part of a feedback loop, where nature itself “becomes an important source of inspiration in value formation” (Norton 1984). Norton goes on to argue that weak anthropocentrism can lead to the development of “powerful” reasons for protecting nature which are distinct from the strictly exploitative reasons for protecting nature provided by strong anthropocentrism (Norton 1984).

The Convergence Hypothesis

Norton continued to flesh out his pragmatic view of environmental ethics throughout the 1980s and first formulated the “convergence hypothesis” in his 1986 article “Conservation and Preservation: A Conceptual Rehabilitation.” According to Norton’s convergence hypothesis, “. . .if the interests of the human species interpenetrate those of the living Earth, then it follows that anthropocentric and nonanthropocentric policies will converge in the indefinite future. Showing respect for nature, its processes of life, may just be an alternative formulation of the injunction to show concern for resource stability essential to human survival over the longest term” (Norton 1986). On this view, whether a person takes nature to have intrinsic value or strictly instrumental value based on human interests, these two views will generally lead to the same positions on policy regarding protection of the environment. The convergence hypothesis has been revolutionary and controversial in environmental ethics because it challenges the view that environmental ethicists should be focused on articulating arguments in defense of the intrinsic (versus strictly instrumental) value of nature.

The convergence hypothesis is an excellent example of pragmatist modes of thought in its rejection of absolutism. For example, it may ultimately be the case that nonhuman nature *does* have intrinsic value, which is nondependent on human interest, or even on the interest of any sentient beings. At the same time, environmental policies are developed and evaluated by humans and are often dependent on human interests. While environmental ethicists may (or may not) have done an exemplary job in getting closer to the ultimate nature of reality regarding the value of nature, their arguments have been largely impotent at a policy level because many of the people responsible for environmental policy are more interested in the value of nature for humans.

Environmental pragmatism then raises the question of what it means to do philosophical work regarding the nature of value. It may, on this approach, be more important, even for philosophical purposes, to suspend metaphysical questions regarding the nature of value if the time spent pondering these questions detracts from the influence of environmental ethics on public policy. If Norton’s convergence hypothesis is true and an anthropocentric view of value leads to advocating the same courses of action as a nonanthropocentric view, then it may be well worth it for philosophers to dedicate their time and philosophical expertise to articulating the most persuasive arguments in favor of environmental protection. If the most persuasive arguments in favor of this happen to be anthropocentric in nature, then, from the perspective of environmental pragmatism, this should be accepted in order for environmental ethicists to be as effective as possible.

Methodological and Historical Environmental Pragmatism

While environmental pragmatism’s beginnings placed heavy emphasis on the importance of practicality within environmental ethics in keeping with the pluralistic nature of pragmatism, a variety of views have been articulated as part of environmental pragmatism. Andrew Light,

for example, makes a basic distinction between “metaphilosophical” or “methodological” environmental pragmatism and “historical” environmental pragmatism (Light 2004). Methodological environmental pragmatism consists of a critique of the methodology of environmental ethics, such as the aforementioned emphasis on the importance of environmental ethicists focusing on practical matters rather than becoming mired in strictly metaphysical questions which are removed from and have little bearing on concrete environmental issues. Light argues that this does not necessarily entail that environmental philosophers completely give up the largely theoretical questions that spurred the development of the field but that they “...must accept the public task as well, which requires that they be willing to translate their philosophical views about the value of nature, when necessary, into terms more likely to morally motivate policy makers and the general public even when they themselves have relied on nonanthropocentrism to come to their views about the value of nature” (Light 2004).

While methodological environmental pragmatism draws implicitly from the American pragmatist tradition due to its pluralist and democratic framework, historical environmental pragmatism explicitly brings particular aspects of the theories of pragmatists such as James, Pierce, and Dewey to bear on environmental issues and environmental philosophy. For example, Robert C. Fuller has argued that William James’ provision of the scientific and evolutionary foundations of philosophical pragmatism can be used to understand the connection between the fulfillment and well-being of individuals and that of ecosystems, as well as the spiritual importance of conduct toward the environment (Fuller 1992). Piers H. G. Stephens and Jason Scott Robert have also done work on applying James’ ideas to environmental philosophy, while Anthony Weston and Hugh P. McDonald have concentrated on the importance of the work of John Dewey for environmental philosophy (Stephens 2009; McDonald 2002).

In addition to Light’s distinction between methodological and historical pragmatism, in their seminal 1996 anthology *Environmental*

Pragmatism, Andrew Light and Eric Katz point to four major ways that pragmatist ideas have emerged within environmental philosophy. These include an analysis of the connections between American pragmatist philosophy and environmental issues; the articulation of strategies for linking environmental theory with practice, including activism and environmental policy; the examination of the normative theory undergirding particular environmental organizations in an attempt to work toward compromise and agreement between them; and arguments for pluralism in environmental theory (Light and Katz 1996).

Criticisms of Environmental Pragmatism

Criticism of Ethical Pluralism and the Convergence Hypothesis

A number of criticisms have been leveled against environmental pragmatism despite its popularity within environmental philosophy. J. Baird Callicott has been one of the most outspoken critics, arguing against ethical pluralism in favor of monism for the sake of having a consistent ethical theory (Callicott 1990). Callicott argues further that this monism should be based on work done within evolutionary theory and the natural sciences (Callicott 1995). While one may appeal to a variety of concepts (such as “God, creation, and stewardship”) which may be more persuasive in particular cases for drawing support of environmental policy, Callicott does not grant that these are legitimate reasons due to their lack of scientific basis (he points out that anthropocentric values are economic in nature and must compete with other economic values which are related to the exploitation of nature, arguing instead that appeals to the intrinsic value of nonhuman nature may stand a better chance of success). Callicott has also attempted to show that Norton’s convergence hypothesis is false by using the Endangered Species Act of 1973 as an example of a policy based on nonanthropocentric intrinsic value that would have been markedly different if it had instead been based on anthropocentric instrumental value (Callicott 2009).

Criticism of Environmental Pragmatism as a Philosophical Position

In his article “Environmental Pragmatism and Environmental Philosophy: A Bad Marriage!,” Lars Samuelsson argues that, given that the nature of philosophy entails examining theoretical questions such as the potential for nature to possess intrinsic value, a position such as environmental pragmatism is actually not a philosophical position at all (Samuelsson 2010). Environmental pragmatism brings with it the assumption, according to Samuelsson, that environmental philosophers should be concerned with “saving nature” and making arguments that address public concerns and aim to affect environmental policy. Samuelsson recognizes the “theoretical merit” of being dispassionate and unbiased regarding the subject matter of one’s area of research and argues that environmental philosophy should leave open the possibility that people working within this field do not necessarily have a bias toward arguing in favor of environmental protection of any sort (Samuelsson 2010). Environmental pragmatism threatens to undermine the philosophical goal of getting clear on “the problems that puzzle us,” and many of the concerns of environmental pragmatists are best left to practitioners of more empirical fields of study (Samuelsson 2010).

Criticism of Methodological Environmental Pragmatism

Mark A. Michael parses out three different positions within methodological pragmatism and provides a critique of the alleged importance of methodological pragmatism for environmental philosophy. According to radical methodological pragmatism, environmentalists should give up on the task of providing well-founded theoretical grounding for environmental policy and focus strictly on connecting policy with values that people already have (Michael 2012). Moderate methodological pragmatism advocates that it is okay to work on theoretical grounding for environmental values but that differences regarding this should be put aside to work together to affect policy. Weak methodological pragmatism is the

view that “environmental philosophers should work together where their policies coincide and there are no additional practical or moral considerations that might be relevant their ability to work together” (Michael 2012). Michael goes on to argue that radical and moderate methodological pragmatism are fundamentally flawed and that, while there are not significant objections to weak methodological pragmatism, the view is largely trivial (Michael 2012).

Animal Pragmatism

Recently, a number of scholars have begun to examine pragmatist approaches to animal ethics and to the relationship between human and nonhuman animals, resulting in the development of the tradition of animal pragmatism. This new area has taken a variety of forms, assessing issues such as the use of animals in food production, animal advocacy, the tension between animal and environmental activism, biomedical research on animals, and the relationship between humans and pets and other companion animals. In their introduction to *Animal Pragmatism*, Light and McKenna remark on the questionable relevance of the field of animal ethics in terms of its overall impact on the current industrial agricultural system and look to American pragmatism as a philosophical area that may be able to contribute to practical concerns regarding the treatment of farm animals (Light and McKenna 2004).

Pragmatism on Animal and Environmental Advocacy

Light looks at ways in which methodological pragmatism can be applied to issues regarding the treatment of animals. For example, the implementation of “humaneness” as a criterion regarding the removal of “pest” animals from ecosystems which they threaten is a clear point of convergence for environmental and animal advocates, where few environmentalists would completely reject the need to treat animals as humanely as possible even if some action should be taken for the sake of ecosystems (Light 2004).

Pragmatism and Animal Welfare

Paul Thompson contemplates animal welfare scientist David Fraser's criticism of the field of animal ethics as being too exclusively concerned with abstract theoretical issues regarding the treatment of animals (Thompson 2004). While many of the issues tackled by animal ethicists such as Tom Regan and Peter Singer do have real-world implications, there is an immense shortage of animal ethicists who are well versed in particular technical practices, which are staples of industrial agriculture. Also, while Regan, Singer, and others have been very vocal regarding the promotion of vegetarianism, fewer philosophers have looked at ways to improve the lives of farm animals and what criteria could be used to signify such improvement. Thompson looks to the philosopher Bernard Rollin as an example of someone undertaking a pragmatic approach to farm animal welfare, though Rollin does not identify explicitly as being influenced by the American pragmatists (Thompson 2004).

Rollin brackets the question of whether or not animals should be used in food production and instead accepts that they are and then looks at specific ways that animal lives can be improved (Rollin 1995). For example, in his book *Farm Animal Welfare*, Rollin catalogs a number of standard procedures regarding animal treatment in industrial agriculture, such as debeaking chickens and castrating cattle, and suggests ways that these methods can be made more humane to increase animal welfare, sometimes arguing that certain practices should be discontinued entirely due to being harmful and unnecessary (Rollin 1995). Rollin's specific ethical prescriptions are undergirded by his adaptation of the concept of *telos* (from Aristotle) to the field of animal ethics. As Thompson writes, "...animal telos is intended to reflect the biological and functional needs that would be characteristic of a given species. Thus, if pregnant sows experience a drive for nesting behavior, this will be characteristic of the pig telos" (Thompson 2004). Rollin's idea is that treating an animal in such a way that it can fulfill its telos will generally result in higher welfare.

Pragmatism and Animal Use in Research

Todd Lekan applies pragmatist thought to the use of animals in biomedical research. He looks for ways to balance the interests of scientists who use animals for research and advocates who work for animal welfare organizations. The dialogue and compromise that Lekan advocates is indicative of the pragmatist emphasis on the development of science, which is informed by public interests through communication between members of the scientific community and laypersons. One way that Lekan proposes to mend the gap between animal advocates and scientists using animals in research is by necessitating the inclusion of animal advocates on institutional animal care and use committees, or IACUCs (Lekan 2004). IACUCs evaluate proposals for research projects, which include the use of animals in various capacities. However, at this time there is no legal requirement for animal advocates to serve on these committees (Lekan 2004). The absence of such a requirement leaves open the possibility that research projects may be approved, which potentially allow for low levels of welfare regarding animals used in such projects. By proposing the required inclusion of animal advocates on IACUCs, Lekan hopes to work toward the achievement of a "middle ground" between abolition and the use of animals in research (Lekan 2004).

Pragmatism and Companion Animals

In her 2013 book *Pets, People, and Pragmatism*, Erin McKenna examines the ways that American pragmatist philosophy can enhance understanding of the relationship between humans and their pets and companion animals. Drawing from her own life experience and devoting entire chapters to horses, dogs, and cats, respectively, McKenna utilizes the pragmatist ideas of naturalism, pluralism, developmentalism, experimentalism, and fallibilism to develop subtly nuanced positions on a variety of human-animal interactions, such as the use of animals in breeding, research, competition, and work, ownership of animals, and dealing with the death (or impending death) of one's companion animals (McKenna 2013). While

many animal and environmental philosophers drawing from American pragmatism focus on the work of Peirce, Dewey, and James, McKenna addresses (in addition to these) the ideas of Jane Addams, Charlotte Perkins Gilman, and Alain Locke as they are applicable to human-animal relationships (McKenna 2013).

Though McKenna's arguments and conclusions are subtle and complex, she argues against the outright rejection of human-animal relationships that is taken by some of the more radical animal advocates and philosophers in favor of a view that sees many human-animal relationships as having the potential to be mutually beneficial, rather than necessarily involving the exploitation of animals on the part of humans (McKenna 2013). Often, the moral permissibility of particular human-animal relationships depends on a number of context-specific particularities. For instance, some horses genuinely enjoy engaging in certain types of competitions, while others may not be physically and psychologically suited for competition (McKenna 2013). McKenna writes that "[a]s long as one has appropriately matched the activity with the physical and psychological abilities of the horse and is able to work with the particular personality and interests of the individual horse (respect the *plurality* of horses), there is not *inherently* wrong with these activities from the Pragmatist point of view" (McKenna 2013, emphasis in original).

Regarding the death of companion animals, it is important to understand and to respect the nature of the animal as much as possible and not to let this respect be overridden by human desires, such as the urge to keep an animal alive as long as possible. Given the evolutionary history of humans and companion animals (especially dogs), it is important for ethical reasons to take into account the fact that these relationships are mutually transformative rather than unidirectional.

Summary

Environmental and animal pragmatism both incorporate ideas based in the American philosophical pragmatist tradition and emerged due to

concerns over the ineffectiveness of animal and environmental philosophy in affecting policy and addressing concrete issues. This entry traces the historical development of environmental pragmatism and the differing views that comprise it, as well as some of the criticisms leveled against it. The recent emergence of animal pragmatism is also discussed, as well as several ways in which American philosophical pragmatism has been brought to bear on specific issues within animal ethics.

Cross-References

- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Environmental Ethics](#)

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Silent Spring was published 1 month before the Cuba missile crisis and owed its worldwide success at least in part to Carson's comparison between the effects of atomic radiation and those of synthetic chemical pesticides. By framing pesticides as another form of fallout, Carson's book made a powerful impression on a generation that grew up under the shadow of nuclear destruction. It brought about the transformation of the earlier conservation movement into a worldwide environmental movement.

An important milestone in the emergence of environmental ethics was the first Earth Day on April 22, 1970, when environmentalists started urging philosophers who were involved with environmental groups to think through the norms and values that lead to environmental problems, as well as the norms and values that are necessary for resolving them.

Anthropocentrism and Non-anthropocentrism

In its early stages, the debate among academic philosophers on environmental issues was strongly stimulated by Lynn White's seminal article "The Historical Roots of Our Ecological Crisis." In this article from 1967, White claims that Christianity, as "the most anthropocentric religion the world has seen" (p. 1205), is to be blamed for the ongoing exploitation and degradation of nature in the occidental world. Richard Routley (1973), in another highly influential article, also identifies anthropocentrism, or basic human chauvinism, as the core principle of Western ethical systems and argued that it is inconsistent with a true environmental ethic. A thoroughgoing environmental ethic would reject the anthropocentric principle of total use, "implying that every natural area should be cultivated or otherwise used for human ends, 'humanized'" (p. 206).

In the footsteps of authors such as White and Routley, environmental ethics developed primarily as a radical critique and correction of anthropocentric ethics. There are at least three main approaches to radical non-anthropocentric

Environmental Ethics

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Introduction

The development of environmental ethics was inspired by the widespread perception of an "environmental crisis" in the 1960s. Rachel Carson's landmark book *Silent Spring* (1962), which documented the accumulation of dangerous pesticides and chemical toxins throughout planetary food webs, played a vitally important role in raising awareness of this crisis. Never before and since has a book been so successful in providing impetus for action against a common threat to so diverse a body of people.

environmental ethics: Arne Næss' deep ecology (1989), in which the current environmental crisis is attributed to modern humanity's anthropocentrism; Murray Bookchin's social ecology (1995), which explains hostile behavior toward nature in terms of the existence of hierarchical relationships among human beings; and ecofeminism (see Merchant 1983), which points to androcentrism rather than anthropocentrism as the main culprit and assumes a strong relationship between suppression of nature and of women. It is interesting to notice that this discussion has made it very difficult to reconcile environmental ethics with an agricultural perspective, because the latter, necessary for survival and quality of human life, has a clear anthropocentric focus.

An important goal within this field has long been to find a convincing theory of the intrinsic value of natural entities. The debate focuses on whether this noninstrumental value of nature has a subjective or an objective character. Subjectivists claim that the only sources of value are the evaluative attitudes of humans, whereas objectivists (such as Routley) deny that value depends on the attitude of valuers (O'Neill 1992).

The Expanding Circle

Another important debate within the new field of environmental ethics concerned the question of which entities possess intrinsic value. Here the idea of the so-called expanded circle proved to be important, i.e., the idea that humans' moral development is characterized by a constant extension of the moral community (Nash 1989). In the beginning, the circle of beings considered morally relevant was confined to fellow tribesmen, but in the course of history, this circle gradually expanded until all of humanity was encompassed, a milestone reached during the Enlightenment in the declaration of human rights. At first these rights only applied to male proprietors, but this gradually changed during the nineteenth century, with the abolition of slavery, the emancipation of the laborer, the introduction of female suffrage, and the ban on child labor.

As discussed below, the moral community once again experienced a powerful expansion during the twentieth century and now extends to future generations. However, the expansion of the moral community did not come to a halt at the human species boundary, but also continued, step by step, outside the domain of humankind, first to animals (zoocentrism), next to plants and microorganisms (biocentrism), and finally to collectives such as endangered species and complete ecosystems (ecocentrism).

Transgenerational Ethics: Past and Future Generations

In reaction to the emergence of environmental problems on a global scale, the moral community recently underwent a powerful extension to future generations. This expansion of the moral community is evident in the 1989 Brundtland report *Our Common Future*, in which sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Present generations are obligated by considerations of (distributive) justice not to pursue policies that create benefits for themselves but impose costs on those who will live in the future.

The Brundtland report mentions not only justice *between* generations (intergenerational justice) but also justice *within* generations (intragenerational justice) as preconditions for sustainable development (see also "► [Sustainability of Food Production and Consumption](#)"). For example, there is a huge difference between the rich North and the poor South with respect to the consumption of natural resources. This difference can be visualized with the help of the so-called ecological footprint ("EF" for short) (Wackernagel and Rees 1996). The EF is a measure of human demand on the Earth's ecosystems that indicates how many hectares of productive land and sea area an average person needs for his or her consumptive activities on an annual basis. The present footprint of inhabitants of poor countries is far below the global average of

2.2 ha, whereas the footprint of those of rich countries is far above this average.

A bone of contention with respect to sustainability lies in how far nature's services can be viewed as resources that are substitutable (in the sense that it is acceptable that when one destroys one and leaves another intact) or not: the first view is called weak sustainability and the second view strong sustainability (Norton 2005). Weak sustainability allows for virtually unlimited substitution between man-made, manufactured capital, which incorporates resources such as infrastructure, labor, and knowledge, and natural capital, which covers the stock of environmental services. The decline of natural capital can be compensated by an increase of manufactured capital. Intergenerational equity is guaranteed as long as the total capital is left constant over time. Strong sustainability on the other hand denies that man-made and natural capitals are interchangeable, implying that natural resources should be passed to future generations still intact in their original form.

People have duties not only to future and current generations but also to past generations. One should pay honor and respect to the dead. That means remembering their achievements, continuing their work, or paying compensation to their children for a wrongdoing they may have suffered. Transgenerational ethics can underpin the notion of "cultural heritage." Of course, these retrospective, present, and prospective duties can conflict with each other.

Zoocentric Ethics: Utilitarian and Deontological Perspectives

In his 1840 *Preisschrift über die Grundlage der Moral* [On the Basis of Morality], Arthur Schopenhauer remarked, much to his regret, that above the entrance of occidental ethics hangs a prohibition sign with the inscription: "Tiere müssen draußen bleiben" [Animals have to stay outside].

One of the first modern philosophers who successfully denounced this situation was Peter Singer. Singer (1975) blames traditional ethics

for the fact that animals are wrongly excluded from the moral community. Traditional ethics attributes a superior moral status to humans on the basis of their exclusively possessing specific capacities like the ability to think or to speak. If this criterion were applied rigorously, however, then newborn children and demented people would not deserve any moral consideration. If one wants to avoid this consequence, then one has to choose a less demanding criterion for right of entry to the moral community. Singer borrows this criterion from Jeremy Bentham, the famous founder of utilitarianism. "The question is not," Bentham stated in 1789, "Can they reason? Nor Can they Talk? But Can they *suffer*?" If one accepts the ability to suffer as the main criterion for right of entry, then there is no reason to exclude animals from the moral community.

Singer argues that one should engage in actions that result in the greatest good for all sentient organisms. Thus, in the utilitarian calculus, the damage to animal welfare has to be weighed against the human benefits of food, shelter, medicine, and so on. Animal experiments can, for instance, be justified on utilitarian grounds if substantial human health interests are at stake which outweigh the harms to the animals and when there are no alternatives that produce a greater net balance of benefit over harm.

Tom Regan has strongly rejected utilitarianism as foundation of animal ethics. In his influential 1983 book, *The Case for Animal Rights*, Regan develops a theory of animal ethics along deontological lines. According to Kant's categorical imperative, one should treat fellow humans never merely as a means, but always at the same time as ends-in-themselves. Tom Regan has applied Kant's categorical imperative to animals. Animals should not simply be appreciated for their instrumental value but they should be respected for their inherent value. To achieve this, one should grant animals certain rights, according to Regan. These rights prevent trade-offs between animal welfare considerations and human welfare considerations. For Regan, virtually any type of captivity or manipulation of a sentient animal is morally unacceptable, irrespective of the possibly beneficial

consequences for the protection of rare or endangered species.

Although most animal ethicists only attribute moral standing to individual animals, and not to plants or collective entities such as species or ecosystems, they are nevertheless convinced that animal ethics is an environmental ethics, because individual animals can survive and flourish only if they have a sustainable and sound environment.

Biocentric Ethics: Egalitarian and Hierarchical Approaches

The next step, the transfer of ethical fundamentals from human beings to plants and microorganisms, was taken by Paul Taylor, who was influenced by Albert Schweitzer (1923) and his “reverence for life” ethic. Taylor (1986) defends a biocentric position, implying that not only humans and animals should count as members of the moral community but all living beings, including plants and microorganisms. Without exception, all organisms deserve moral consideration because as “teleological centers of life,” they have a good of their own. This good consists in the realization of capacities and the fulfillment of needs in a regular, well-balanced way that goes with the species-specific nature of organisms. According to Taylor, human beings can claim no primacy over other living beings. On the basis of his “principle of species impartiality,” all organisms should be treated with equal care and respect, regardless of the species they belong to. However, not all biocentric approaches are egalitarian and consider all organisms to be equal. Hierarchical approaches make an organism’s value dependent on their organizational level; they will generally attribute higher value to animals than to plants.

Endangered Species and Biodiversity Protection

While some people would dispute whether ethical obligations exist to protect or prevent harm to

individual organisms, many more are willing to acknowledge that it is morally wrong to jeopardize the continued existence of an entire species. This has become a particularly central issue in public land-use policy as urban development and habitat loss have increasingly become major causes of species extinction.

Much of the reasoning used to justify concern about loss of endangered species in recent years has clearly been anthropocentric in nature. There are many important pragmatic reasons for protecting endangered plant and animal species (see also “► [Biodiversity and Global Development](#)”). They represent a tremendous biological storehouse, the loss of which may deprive us of substantial medical, scientific, and commercial benefits. But non-anthropocentric arguments have also been offered. Similar to the positions embraced by animal rights supporters, the protection of species diversity is sometimes defended on the grounds that species have an inherent right to exist regardless of the utility or value such species might hold for humans (Rolston 1986).

Ecocentric Ethics: Land Ethic Versus Animal Ethics

Both Singer’s utilitarian (animal welfare) approach and Regan’s deontological (animal rights) approach center on individual organisms, the difference being that Singer allows for utilitarian trade-offs between the various interests of individuals. The same holds for biocentric approaches. For both zoocentrists and biocentrists, collectives (e.g., endangered species) do not possess any intrinsic value or direct moral standing at all. This individualistic approach was opposed by philosophers who felt that the narrow focus on individual welfare failed to address the concerns of environmentalists about pollution, biodiversity loss, habitat fragmentation, and so on. They advocated a holistic approach in which organisms are perceived as parts of a greater whole such as biotopes or ecosystems. The *locus classicus* of this holistic approach is *A Sand County Almanac* (1949) by Aldo Leopold (1887–1948), a famous nature

conservationist who was strongly influenced by the science of ecology. The basic moral rule of his so-called land ethic goes as follows: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold 1949, p. 262).

Around 1980, a fierce conflict erupted between individualistic animal ethicists and holistic environmental ethicists. Tom Regan maintained that as long as proper respect was shown for the rights of individuals, the biotic community would also be preserved, simply because this community is ultimately made up by individuals. Environmental ethicist Baird Callicott (1980) depicted this conviction as a certificate of "ecological illiteracy." Animal ethicists make no distinction whatsoever between wild and domesticated species, between rare and common species, and between native and exotic species. According to Callicott, the moral worth of individuals is relative to be assessed in accordance with their particular relation to the collective entity which Leopold called "the land." Tom Regan responded to this attack with the accusation that environmental ethicists were committing the crime of "environmental fascism" by subordinating the rights of individuals to the interests of the greater whole. "Environmental fascism and the rights view are like oil and water, they don't mix" (1983, p. 362).

Eight years after his frontal attack, Callicott (1989) offered individualistic animal ethicists an olive branch. As a compromise, he proposed to order one's moral relations according to concentric circles. He now made a distinction between three different communities: the human community, the mixed community of humans and domesticated animals, and, finally, the wider biotic community that also includes wild animals. This attempt to reconcile individualistic animal ethics and holistic ecoethics through a theory of concentric circles comes down to a division of labor between three moral regimes: traditional, anthropocentric ethics is about humans and their relations to each other, zoocentric and biocentric ethics are about the well-being and the integrity of domesticated and cultivated species, and

ecocentric ethics deals with wild species as members of the biotic community and as parts of the ecosystem.

Climate Change and Global Justice

A new impulse for environmental ethics is the all-pervasive problem of climate change. It permeates everyday actions in the West, such as eating meat and driving a car. It challenges environmental approaches to find the causes of climate change and, as a consequence, the proper allocation of responsibility for human actions that increase climate change. Responding to climate change requires huge investments in new technologies both to moderate and to accommodate climate change, and the main issue here is who is to bear the burden? (see also "► [Climate Change, Ethics, and Food Production](#)"). Consider an issue that was already implicitly mentioned in the discussion about sustainability: is it ethically acceptable to put price tags on natural services to make clear what damage is being done and what repairs should be done? On various levels, the issue of "monetarization" or commodification plays a role: rich countries, for example, can satisfy their duty to compensate for increasing climate change by investing in climate neutral technologies in poorer countries, or individual countries can charge climate changers to pay for their role in climate change. Many will argue that this type of commodification is inappropriate, given the intrinsic value of nature, and that paying a price means degrading the climate as a common good; finally it motivates the rich to continue with their conduct and not to look after more sustainable patterns of behavior. There are also other arguments against pricing, including the fact that pricing requires a strict analytical approach to exactly delineate which elements and particular services of the environment are harmed and which are not. The itemization or disaggregating this requires is argued by many to require a slicing up of nature which is impossible; you cannot piece by piece unravel the threads of which nature's network is composed (O'Neill, Holland and Light 2008).

Methodological Approaches: Principalist, Virtue/Care, and Pluralist Value Approaches

Next to this substantive grouping of approaches, a more methodological division is possible between fundamental or principalist positions, value- and experience-oriented positions, and pragmatist positions. In the first approach, the idea is that ethics should begin with identifying and justifying fundamental principles and obligations that can rightly claim universal respect and agreement. On the basis of these principles, people can then try to tackle more practical problems by applying them to local circumstances. The ideal principles function more or less as foundations but also as searchlights that assist in identifying the main bones of contentions. Utilitarians like Peter Singer (1975) and deontologists like Regan (1983) argue in this way. Regan, for example, argues for not interfering with animals on the basis of the principle of animal integrity. The principalist approach is helpful in delineating lots of possibilities but does not assist in procedural questions of discussing them, such as the selection of urgent topics, the procedure, and the type of information needed; moreover, it leaves out virtue ethics and long-term processes.

The value-oriented approach, like the first two, is a top-down approach, starting with the right values and then delineating what a valuable agriculture could be (Sandler 2007). A kind of ideal picture is sketched, and concrete reality is measured according to that. However, there are other approaches that start with human experiences. Eco-phenomenology, based on phenomenology, studies the nature of humans' and animals' first-person experiences, which include moral feelings of the environment and behaviors with respect to it. Abrams (2010) delineates a primordial space of relationality in which beings become experiencing humans and animals. Environmental hermeneutics emphasizes the importance of narratives and stories that people tell (O'Neill, Holland and Light 2008). In the case of Hulme (2009), this line of thought is unpacked considering mass and social media myths.

Another approach is the pluralist and democratic approach. This one starts with the practices in which people are involved and tries to find their standards of excellence and their aims, and on the basis of these values and norms, it searches for problems, inconsistencies, and failures and then develops improvements (O'Neill 2008; Keulartz et al. 2004; see also "► [Environmental and Animal Pragmatism](#)"). Although the other approaches can be used as searchlights in these processes, they are not used as principles. In the case of animals, it means that the a priori abolitionist position of, for instance, Regan is rejected and one looks instead to practices in which human-animal relationships can flourish and that one tries to expand these: not leaving animals alone but living with them (Donaldson and Kymlicka 2011; Harroway 2008). This approach has also a clear connection with the capabilities approach of Sen (2010), who stresses that the concept of justice can be given shape step by step in comparing different practices that promote the flourishing of the capabilities of people and nature.

The Task of Environmental Ethics

Environmental ethics has a difficult task: it not only requires the application of ethical principles, but it also requires extensive analysis in which technical details are to be taken seriously. During this process, cherished notions of fundamental, non-applied branches of philosophy, such as the radical distinction between humans and animals or between culture and nature, can turn out to be insufficient.

The main tasks of environmental ethics are, first, to give a coherent overview of all the ethical problems people are confronted when dealing with environmental problems, such as pollution, habitat destruction, biodiversity loss, and climate change, and the preservation and conservation or construction of ecosystems. Therefore, environmental ethics is very much a collaborative endeavor with the environmental sciences, but it tries to do more than these particular disciplines in that it tries to unify all of different aspects of the problems and different levels of analysis. Second, environmental

ethics explicates, analyzes, and evaluates the most relevant and important ethical issues. Again, it does this together with other disciplines, but it also maintains close contact with stakeholders, and so it can contribute to acceptable solutions. Third, environmental ethics can delve deeper by proposing and explicating ethical principles, norms, values, and meanings that are important in dealing with environment; analyzing cases is very helpful here. Finally, environmental ethics can contribute to the question of how to study the environment and so can help to improve the environmental sciences. Finally, “environment” is an essentially contested item, thoroughly impregnated with values and ethical questions. It cannot be studied in a neutral way, and ethics can help in analyzing its meaning.

Just like in any other philosophical discipline, nothing is outside debate and unquestionable: controversies abound. However, within the arena of environmental ethics, there is one value that seems to be a fundamental assumption: the environment is an essential context for and element of human life. Many environmental ethicists want to argue for more than this and believe that the environment has an independent meaning which cannot be neglected. The environment covers relationships that one cannot annihilate; they require maintenance, exercise, and cultivation. When humans distance themselves too much from environmental relations, for example, when important elements of the environment are made of plastic or are only available through two-dimensional electronic screens, they are degrading these relations and themselves.

Because humans always have multiple bodily and material meaning experiences of their environment, humans have to exercise the capacities that allow them to have these as much as possible in balance with other important capacities. As a matter of fact, these meanings are always culturally and socially differently shaped, but humans have to continuously learn to deal with those differences and to be sensitive to the relevant environmental problems and overlapping concerns. The bodily aspect of our relation to environment also implies that a sense of place, even in a mobile society, is important in

connecting with landscapes and with the people one trusts. This anthropological insight could contribute to a better relationship with the environment: less spoilage, less waste, and less neglect.

Environmental Ethics and Politics

The rise of environmental ethics was accompanied by activism, by writing, by organization of sit-ins and boycotts, by initiating local conservation areas, by participating in social media, and by political action. The relation between environmental ethics and politics can be diverse and can be directed toward governments, farmers, corporations, and supermarkets. Moreover, these kinds of activism manifest themselves in the supermarket by urging for more and relevant information on the ecological footprint of products, where they come from, how they are made, and which ethical decisions are made in their production process. Political action can be so strong that governments are compelled to issue strict regulations or better oversight of existing regulations; some companies are playing a key role and business can in some cases be seen as a “green avant-garde.” Many citizens find it frustrating that environmental problems and solutions are not always a priority for political parties and so exercise their agency via traditional media, new social media, or directly via the civil society groups.

Therefore, many ethical consumers become members of NGOs and other organizations when they want to contribute to “other regarding” political and ethical action. They contribute to these joint actions, although it is often not in their direct own interest, but in the interest of others, often people abroad. Environmental ethical activism is therefore more than citizen action, because it often transcends the borders of the nation-states to many areas in the world, like rainforests, tiger parks, and river deltas. Many activists act out a new kind of obligation, and in particular in acting together, they develop a first-person plural perspective of a group that act “vicariously” as advocates of silenced groups like next generations or nearly extinct animals.

For ethicists engaged in controversial issues such as animal welfare or environmental degradation, it is not always easy to meet norms of scholarly integrity and to take the relevant aspects fairly into account. Pure neutrality in this field is impossible; however, the rules and values of good scholarship are clear for many, and upholding them can have a purifying and ideas generating effect. One of these values is the concrete engagement with practitioners and nature managers; here one learns what concrete problems arise in dealing with a certain ecosystem in which people have lived for a very long time. One learns to understand that these people often care very much about their surroundings and that environmental fundamentalism, which under all circumstances puts the environment first and gives the people living in it only an insignificant role, is a serious mistake.

Ethics and Environmental Sciences

The relationship between ethics and the environmental sciences is often described as a kind of norm-fact relation: the sciences deliver the facts and ethics develops principles and norms to act upon. Often, the deliverers of the facts, the scientists, are attributed also normative tasks in dealing with humans' distorted relations with the earth (see "► [Ecotopia](#)"). Lewis Mumford writes "One of the major tasks of the twentieth century is the resettlement of the planet. The past three centuries have been centuries of random exploration ... spontaneous and guided by insufficient knowledge; and much of the work of settlements to be done over again ... Population that spread with no more social direction than the surface tension which gives definition to an ink blot, must be regrouped and nucleated in a fashion that will make possible a co-operative, civilized life. Industries ... must now flow out into new centres ... conscious scientific intelligence must determine the new loci of industrial advantage" (Mumford 1940, p. 388; Keulartz 1998). However, these scientific proposals run several severe risks. First, the environmental sciences (like any science) suffer from controversies, and it requires normative

assumptions to choose one party; second, societal processes have a logic of their own and cannot change just because scientists say that they should. Moreover, environmental sciences incorporate values and normative assumptions that steer their research. So, there are perspectives that try to have a more critical and distanced relationship with the sciences and to look for a broad spectrum of inspiration, like social movements and various neglected social practices.

Outlook: Future of Environmental Ethics

One assumption of the environmental ethics of the eighties and nineties of the last century (in particular deep ecology, Naess 1989) was that the environmentalists of the West should have very strong opinions about the "wild" ecosystems in the South: they have to be preserved, and poor people that live in these areas are harming nature and should give way to, for example, nearly extinct species like tigers. It turns out that the opposite is true: poor people are much more dependent on regular ecosystem services, and as the Indian social ecologist Ramachandra Guha (1994) argues, environmental and human justice need to be brought in balance (see also "► [Environmental Justice and Food](#)"). The future of environmental ethics lies in a careful integration of global and local orientations, of natural and human values, and requires respecting the diversity of nature and humans and a sustainable form of agriculture. In particular, in Asia the challenges, especially those posed by climate change, are enormous and will require integrating population growth, increasing welfare, and growing demand for animal proteins on the one hand and nature conservation of huge areas with incredible ecosystems on the other. The Asian religious traditions, just like other movements, can be an inspiration. Finally, the stalemate between an environmentalism – which focuses on wild nature – and agriculture, which focuses on the expression of a so-called anthropocentric, dominating attitude, needs to be expanded to include more sophisticated approaches that consider the need of all humans to live well with food and nature.

Summary

Non-anthropocentrism is one of the main starting points in environmental ethics, and it implies that the moral domain covers not only humans but also animals and, depending on one's outlook, species, ecosystems, and the land. According to transgenerational ethics, even future generations are considered to be moral objects, which raises the issue of balancing current generational interests with those of the future. Utilitarian and deontological perspectives will give different answers to these questions, as will egalitarian and hierarchical approaches. An important issue is what to do with endangered species and biodiversity protection. According to ecocentric ethics, the land requires priority vis-à-vis animal ethics. A recent and growing challenge is the relationship between climate change and global justice. From a methodological perspective, one can distinguish between principalist, virtue/care, and pluralist value approaches. The tasks of environmental ethics were discussed as well as the relationships between environmental ethics, politics, and the environmental sciences.

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Environmental Justice and Food

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Synonyms

Accessibility; Agriculture; Climate change; Diet; Environmental justice; Food

Introduction

Environmental justice, understood here as a call for stronger consideration of social justice in environmental policy, is receiving increasing attention in policy, politics, and academic research. With social justice understood as concerns of fairness and equity as they are experienced within and between societies, environmental justice advocates make claims relating to the ways in which features of the environment, both positive and negative, are experienced differently depending on demographic factors such as ethnicity, gender, and income. Food – an essential environmental resource, intimately bound up with our health, practices, and cultures and stemming from increasingly globalized and industrialized production systems – is an issue that should be at the heart of these calls.

In mapping out the food dimension of environmental justice, this entry explores four particular ways in which the consumption and production of food have implications for justice. The first is the accessibility of food, which is quite distinct from other consumer products and has wide-ranging implications for health and social inclusion. The second is climate change, a key *intergenerational* and *intragenerational* justice issue. Agriculture and food processing and distribution not only contribute to climate change, they are also likely to be affected as its impacts are experienced. The third is the perception of injustice in global supply chains, with palm oil as a specific example. Finally, the relationship between diet and justice to nonhuman nature is considered.

Environmental Justice

The environmental justice movement is generally understood to have originated in North America in the 1970s, with roots in the civil rights and anti-toxics movements. Protests about the location of toxic disposal sites raised concerns about disproportionate impacts upon demographic groups, particularly in terms of race and ethnicity. Agyeman recounts a clash of ideology between environmental

justice campaigners and the established environmental movement. He argues that the former can be seen to represent a “grass-roots (re)definition of environmental issues, not (only) as wildlife, recreational or resource issues, but as issues of justice, equity and rights” (Agyeman 2000, p. 36). It can be seen, therefore, as a social justice challenge to the environmental movement. The concept and movement have expanded to bring environmental justice dimensions to campaigns on farmworker rights, incinerators, lead poisoning, and transportation, to name a few.

Gottlieb and Joshi build on the common notion that environmental justice is about recognizing the environment as “where we live, work, and play,” to introduce food justice as “where, what, and how we eat” (Gottlieb and Joshi 2010, p. 5). It is, they continue, about “ensuring that the benefits and risks of where, what, and how food is grown and produced, transported and distributed, and accessed and eaten are shared fairly” (2010, p. 6). Food democracy builds on another central tenet of environmental justice, that of procedural justice, in which fair and inclusive procedures are in place to address injustices and eliminate negative environmental impacts at their source (Agyeman 2003).

As the notion has spread around the globe, so have a multiplicity of conceptualizations. While the first decades of environmental justice campaigning saw a focus on the ways in which race and ethnicity affected environmental burdens, recent research has focused on injustices experienced due to age, gender, indigenous status, disability, and income. The scope has broadened from a focus on “environmental bads” to one that also encompasses “goods,” such that it is concerned not only with protecting people from the effects of pollution but also with providing access to environmental resources, such as transportation and green space. Agyeman has posited “just sustainability” as a concept that brings together environmental justice with more conventional environmental campaigns toward a “sustainable society, locally, nationally and internationally, both within and between generations and between species” (Agyeman 2003, p. 323). While we should recognize that not all efforts to minimize environmental impact will

maximize social justice and vice versa, just sustainability can be read as a call to find common ground between these agendas.

In the UK, there has been no direct equivalent of the environmental movement in the North America. It can be seen as an emergent policy principle rather than a direct focus of grassroots anger (Agyeman 2000), and there has been a focus much more on income than on race and ethnicity. In contrast to the grassroots origins of environmental justice in North America, work on the issue in the UK was initiated by established environmental NGO Friends of the Earth (Walker 2012, p. 25) and by the Environment Agency's establishment of a program to look at "environmental inequalities."

The environmental justice movement in South Africa drew many parallels with the USA, making connections between the civil rights movement and anti-apartheid struggles, sharing a focus on toxic and polluting activities, and making deliberate contrasts between these concerns and more traditional colonial and postcolonial ideologies relating to wilderness and nature conservation (Walker 2012). In Central and Eastern Europe, the "Transatlantic Initiative on Environmental Justice" networked with US contacts to work on regional issues, with a focus on the discrimination against Roma.

Although these are examples of self-identified environmental justice activity, it is also evident that environmental campaigners around the world have increasingly taken on board justice concerns. Palm oil and climate change, discussed below, are just two examples of this. In discussing environmental justice, then, we need not be limited to those movements and organizations that refer to their work as environmental justice, but be open to broader discourses in which concerns about fairness and the distribution of impacts on people have influenced thinking on issues of environment and sustainability.

Access to Food

A well-established food justice issue is the accessibility of food to disadvantaged populations.

This can be observed not only at a global scale but also within societies in the Global North. In an increasingly urbanized society, our food is generally produced, processed, and packaged as part of a globalized supply chain, with attendant impacts around the world. In this sense, it is like any consumer product. Yet food presents a special challenge, not least because it is a physiological requirement and one that we need to consume often: at its most basic level, it is not substitutable. In comparison to shortages of other consumer goods, lack of access to food provokes a very strong sense of injustice. Our diet has a profound impact upon our mental and physical well-being: it is not simply the bare provision of food that should concern environmental justice, but access to a healthy, culturally appropriate diet.

One aspect of access to food is affordability. A report by Friends of the Earth as part of the ESRC Global Environmental Change Programme (Stephens et al. 2001) found that around 20 % of the UK population had difficulty affording healthy food, especially where other costs such as fuel and rent take priority. Food insecurity in developed countries has been linked to a prevalence of obesity, diabetes, anxiety and depression, loss of dignity and to lower educational attainment and behavioral issues in children (Burns et al. 2010, p. 2). In the Marmot review of health inequalities and the social determinants of health, food and diet were recognized as part of a group of health issues with "persistent and complex causes and relationships [which are] multi-faceted, between, for instance, early years, education, employment, living environment, income and health" (Marmot et al. 2010).

Another aspect is the availability of healthy food and the provision of affordable, adequate transport to reach shopping facilities (Social Inclusion Unit 2003). A study into accessibility in the West Midlands town of Sandwell found that many residents had no fresh food within 500 m of their homes – which is the distance a healthy person is considered able to walk in 10–15 min – whereas the food that was available locally comprised predominantly high fat, high salt, cheap, and easily storable foods (Steel 2013). Numerous studies of

cities in the USA have identified links between limited or no fresh food access and health-related disparities associated with race, ethnicity, and income (Gottlieb and Joshi 2010), and, as discussed, this “grocery gap” can be linked to a “transportation gap.” “Food deserts” has become a popular description of such situations and illustrates the complex relationship between local environments and diet.

As an issue of justice, however, food accessibility is concerned with more than just physical and financial access to basic foodstuffs. Food is bound up in our social and cultural lives, and what it means to “eat well” varies from culture to culture and person to person. Food demands competencies from the consumer: we need knowledge and skills to plan our diets and to select, store, and prepare meals, and these competencies can mean the difference between a healthy relationship with food and an unhealthy one. Understandably, then, projects such as the Bentley Bulk local food initiative (Sherriff 2009), Growing Manchester, and Incredible Edible Todmorden all incorporate elements of education and awareness raising.

Such an understanding demands a nuanced conceptualization of food security: Burns et al. (2010, p. 2) attempt to do this, for example, with “all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximises self-reliance and social justice.” It has also been argued that discourses and practices relating to “alternative foods” may be specific to particular cultural contexts or ethnic groups through the ways in which they are constructed and understood. Guthman et al. argue, for example, that “many of the discourses of alternative food hail a white subject and thereby code the practices and spaces of alternative food as white” (2011, p. 264). It is important, therefore, that inclusivity and cultural appropriateness are taken into account when creating projects and systems designed to improve accessibility, an example of justice as recognition and inclusion.

The temporal dimension of food consumption is also distinctive: we consume food often and make choices about it daily. In comparison with

other consumer purchases, such as televisions or cars, food is subject to an ongoing series of daily and weekly choices and, although this means that there are in theory opportunities for rapid changes in diets, these must be understood within the context of enduring habits and social and cultural meanings. That is, food consumption must be understood as more than a series of individual choices: it is an ongoing relationship. An improvement in food accessibility, therefore, is more likely to result from ongoing sustainable practices and systems that engage with cultures and communities, rather than simple, one-off interventions.

One way to improve food access is to promote local growing projects at the individual, household, or community level. The availability of green spaces therefore becomes an issue. Green spaces have been identified as promoting other benefits as well, including improving air quality reducing flooding, and raising overall neighborhood quality (Walker 2012) and can thus be considered an environmental good. Involvement in food growing has been recognized as bringing numerous benefits beyond the direct contribution of food availability, including opportunities for social interaction, physical exercise, and skills development. Germany’s *Interkulturelle Gärten*, for example, are aimed at helping integration into a “migration society” by bringing together people from a variety of backgrounds with food and outdoor activity as a focus (<http://www.stiftung-interkultur.de/>). This is an example of an approach to environmental justice that encompasses both the cultivation of environmental goods and the minimization of environmental bads.

Climate Change

Food production, consumption, and distribution both affect and are affected by one of most pressing and wide-ranging international justice issues: climate change. This is the change experienced in climate as a result of rising global mean temperatures due to an accentuation of the naturally occurring greenhouse effect, a process commonly

referred to as global warming. “With climate change,” argues Walker (2012, p. 179), “we are confronted with evidence of patterns of inequality and claims of environmental justice that span the globe, that permeate daily life and which pose threats to the current and future health and well-being of some of the poorest and most vulnerable people around the world.” EU food consumption accounts for 31 % of all consumption-related greenhouse gas emissions, while in the UK the figure is estimated at 19 % (Sustainable Development Commission 2008). It is a prime example of *intergenerational* (in)justice, since current emissions cause climate change impacts in coming decades. It is also a case of *intragenerational* (in)justice since, while the greatest proportion of the greenhouse gas emissions come from the Global North, that is, the richest, most economically developed countries, it is well established that the Global South – the poorest, least economically developed countries – will bear the brunt of the impacts (Walker 2012).

A further dimension of justice in the relationship between food and climate change is the vulnerability of agriculture to changes in climate. Climate scientists are not able to predict exactly what impacts will occur, but they could carry a high risk of causing major damage. Policy makers must therefore take into account both uncertainty and risk. The emerging consensus is that higher-latitude regions such as North America and Northern Europe may benefit from longer periods of warm weather that may increase yields, but water shortages may constrain production. On the other hand, in the low-latitude regions such as Africa, parts of Asia, South America, and Australasia, the negative impacts are already being seen (Garnett 2008). Extreme weather could affect transport and storage infrastructure, and could put the rural poor, who rely in a direct way on getting to market to both buy and sell, in a particularly vulnerable position. Moreover, such fluctuations could threaten the security of the world food supply and bring increased volatility to food prices, again affecting poor consumers the most. The world’s poorest and most vulnerable will be hardest hit by climate

change, and this applies at the global scale as well as within countries in the Global North (Marmot et al. 2010, see pp. 77–78, 127–129).

(In)justice in the Supply Chain

Transnational agricultural corporations control 40 % of world food trade, with 20 companies controlling trade in coffee, six controlling 70 % of wheat trade, and one controlling 98 % of packaged tea (Patel 2013). One justice dimension of food is the concern about the impact of industrialized and globalized agriculture and associated industries.

Protests within the global neoliberal economy can be seen as “a call for recognition and preservation of diverse cultures, identities, economies and ways of knowing” (Schlosberg 2004, p. 524). People’s movements exist with the aim of “conserving livestock diversity and protecting the basis of sustainable agriculture” as a reaction to the pressure to produce meat for export (Shiva 1999, p. 59). In Brazil alone, the equivalent of 5.6 million acres of land is used to grow soya beans for consumption by farm animals in Europe (Lang and Heasman 2004). These “ghost acres” not only illustrate the inefficiency of much agriculture but also highlight equity concerns: land used to grow food for export becomes unavailable to the poor to grow staples to meet basic needs. This process fuels displacement to urban areas, adding to overcrowding and creating new challenges of feeding rapidly urbanizing populations. Between 1979 and 1999, when Kenya almost doubled the proportion of its vegetables being grown for export, vegetable consumption in the country decreased by 39 % (Jones 2001, p. 52).

An example of these global impacts through the corporate food regime is the “palm oil industrial complex” (Pye 2010, p. 854). The nonprofit, industry-led Roundtable on Sustainable Palm Oil has been created to promote the production and use of sustainable palm oil (Laurance et al. 2010), following concerns about the ecological and humanitarian impacts of palm oil’s rapid spread across tropical regions, especially Malaysia and Indonesia. Alongside palm oil’s use across the

food chain, a driver for its development in global markets has been the push for biodiesel in the EU's transport targets: a fuel once seen to be sustainable but now associated with rainforest destruction and food crisis (Pye 2010). Environmental justice campaigners allied themselves with indigenous peoples, whose lifestyles, such as farming smallholdings, were seen as exemplars of sustainable resource management. International NGOs such as Friends of the Earth and Greenpeace have campaigned on this issue, not only from the angle of more conventional environmental concerns, such as deforestation and the plight of the orangutan, but also from the point of view of the displacement of, and health impacts experienced by, the indigenous peoples. There have been numerous protests by the "independent peasantry," and some village-led struggles have been successful in preventing the imposition of plantations (Pye 2010).

The New Economics Foundation is one of the organizations raising concerns about the dominance of supermarkets and drawing connections with justice issues in the supply chain (Simms 2007). Campaigners argue that the supermarket business model, in its attempts to bring uniformity to products and cut costs, results in produce that does not fit high standards of cosmetic uniformity being wasted and therefore also the effort that went into growing it; workers being subject to low wages and cost-cutting hazardous conditions; and environmental resources, not least land and water in the Global South, being used for export products and luxury horticulture items rather than for the production of produce that local people can access and afford. While supermarkets have programs to improve supply chain standards, campaigners argue that they are "freshening the dragon's breath" (Simms 2007, p. 282) rather than making fundamental change. Well-known standards such as Fair Trade offer a way to try to ensure higher standards and fairer reimbursement for producers, but some argue that this does not bring fundamental change but is "a way for farmers, hanging on by their fingernails, to be able to hang on a little longer" (Patel 2013, p. 317). It is argued, for example, that underrepresentation of farmers on the certification bodies, in

comparison to that of distributors and retailers, means prices are still relatively low and pressure to grow monocultures continues. The point is not to dismiss the role of supermarkets and efforts to improve trading standards and working conditions, but rather to show that these have been subject to claims of (in)justice.

Justice to Nonhuman Nature

While the environmental justice discourse is predominately concerned with injustices to people, there is a school of thought that nature itself should be considered a subject of justice. Given the role of animals and ecosystems in food, this is of interest in this entry. That is, parts of nature should be treated as moral subjects because they have worth beyond their value to humans. While statements about the rights of nature, and its intrinsic value, are rhetorically impressive, they are viewed by some as ontologically and practically problematic, although it could of course be argued that this is the case for all attempts to ground rights, including human rights.

The notion of environmental pragmatism can be considered an alternative to the attribution of intrinsic value to nature. It holds that there is nothing upon which intrinsic value can be placed that does not also have some extrinsic value. For example, the protection of rainforests could be argued on grounds of their intrinsic value, for their own sake, but the same argument could be made on less controversial grounds by appealing to the extrinsic value of their contribution to the climate that supports human life, the habitat it provides for humans, or the pleasure individuals have from knowing that rainforests exist. Some therefore argue that an "injustice" to a part of nature can be (more usefully) understood as an injustice to those people who benefit from it, and this certainly makes the concept more workable in the context of current environmental justice discourse.

Another way to understand the impact of food production on ecosystems is through considering the impact upon individual animals and species: while, a rainforest may seem a rather nebulous

moral subject, justice to animals may be a more workable conceptualization. Spreading monocultural production, for example, has an impact on biodiversity and this can threaten the habits of wild animals. The use of pesticides and fertilizers in agriculture can also have a detrimental effect on wildlife. In April 2013, for example, the EU banned some widely used pesticides out of concern for bee health and the value of their pollination services. In some cases, endangered species are hunted for high-value food products: bluefin tuna, the Chinese giant salamander, and green sea turtles are examples, as are lions and tigers. In some instances, however, there is a complex relationship between human rights and the preservation of a species, as is the case with whale hunting by the Inuit in the polar regions of North America. In such instances, there is a need to address the competing values of nature and humanity.

An issue that has direct resonance with justice and nonhuman nature is the role of animals in agriculture and in our diets. Philosopher Peter Singer, seen as the founder of the modern “animal rights” movement, has argued that we have responsibilities in terms of the ways we treat other species, concluding that we should not be using them for food. He argued that animals are moral subjects because they are sentient and feel pain. As well as concerns for animal welfare, the thinking behind vegetarian and vegan diets reflects concerns about the environmental impact and inefficiency of meat production, particularly in its intensive forms such as factory farming (FOA 2006); the global justice implications of the spread of soy and palm oil to produce animal feed; the health implications of diets high in meat; and the welfare of animals in agriculture, particularly intensive farming. While some argue for the wholesale removal of animals in agriculture, others see some uses as beneficial, particularly in more traditional production systems in which they can provide fertility, traction, and useful by-products.

Summary

Environmental justice has developed from its roots in the 1970s in North America to

a movement, policy perspective, and area of research that have international reach and geographical differentiation in their application and conceptualization. Food production and consumption, which is intimately related to human health and environmental quality, is an important area of environment justice. One dimension is the accessibility of food, an exploration of which has revealed the importance of understanding not only physical accessibility but also the competencies people have in dealing with food and the ways in which food is bound up in our social and cultural worlds. Another is climate change, which is a prime example of *intergenerational* and *intragenerational* justice. There are concerns about the injustices experienced by those working in the global supply chain or displaced to make way for its spread. Finally, while environmental justice has been primarily concerned with justice to human communities, it can be argued that elements of nature, can also be brought within an environmental justice frame and that this has implications for the role of animals in agriculture.

Cross-References

- [Climate Change, Ethics, and Food Production](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Food Deserts](#)
- [Peter Singer and Food](#)
- [Urban Agriculture](#)
- [Vegetarianism](#)

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Epicureanism and Food

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Synonyms

Epicure and epicurean; Gourmand and gourmandism; Hedonism

Introduction

The briefest definition of Epicureanism is hedonistic materialism. However, this technical description is potentially misleading to those unfamiliar with philosophical terminology. Similarly, the terms “epicure” and “epicurean” are now commonly associated with luxurious or recherché appetites and even vulgar excesses, although the Hellenistic Greek philosopher Epicurus (341–271 BC) encouraged moderation and a simple diet. It is true that he advocated pleasure (*hēdonē*) as a criterion of ethical choice, but his ethics must be understood within the context of his physics. To understand what Epicurus taught about food and pleasure, or even what he meant by pleasure, one must turn to the ancient sources.

The first vulgar yet comedic caricatures of Epicureanism emerged in antiquity, deceptive but memorable distortions of the teachings of Epicurus. Philosophical opponents from his own day including his own disaffected students, later Roman and Greek authors including Cicero and Plutarch, early Church Fathers, and medieval sources misrepresented and distorted Epicurus and Epicureanism to such an extent that their caricatures have persisted in common use today. However, the positive influence of Epicureanism on Renaissance, Enlightenment, and Romantic thinkers and on modern intellectuals and writers demonstrates the indestructible longevity of and persistent ideological resistance to this Hellenistic school of thought.

Basic Description of Epicureanism

According to Epicurus, human happiness is possible only through an understanding of the physical world and its unseen workings. Ignorance of one's surroundings and of the composition of the universe leads to irrational and superstitious preoccupations, such as fear of death and dread of the gods. Epicurus sought to rid mankind of these worries through an explanation of theoretical physics based on the atomism of Leucippus and Democritus. Through careful study of the workings of the universe and the knowledge that everything consists of atoms and void, man is able to achieve peace of mind (*ataraxia*), an inner calm and sense of equilibrium, which is the highest pleasure, the greatest goal in life. Epicurus also encourages a careful discrimination among pleasures, rejecting pleasures that are momentarily intense but followed by pain. He argues for moderation, the pleasure obtained by the self-sufficiency of living a simple life, the joys of friendship, and even the withdrawal from an active political career, as summed up in the maxim, *lathe biōsas* ("live unnoticed").

The philosophy of Epicurus demonstrates a keen awareness of, engagement with, and frequently polemical responses to the works of his philosophical predecessors and contemporaries. Although clearly in debt to the earlier work of the atomists, Leucippus and Democritus, and the hedonism of Aristippus, Epicurus nonetheless criticizes their work as insufficient. He attacks other philosophers on whom his own work rests, including Plato and Aristotle, and his former teachers, reserving particular contempt and vitriol for Nausiphanes, an atomist with skeptical inclinations, who clearly had a formative influence on Epicurus. However, Epicurus did not allow criticism of himself from his followers. An oath of obedience to Epicurus and strict adherence to his teachings were required of members of Epicurean communities. Some of the most vicious comments about Epicurus and his philosophy come from his contemporary and former student, Timocrates, who, upon leaving the school, wrote a book called *Pleasant Things*, in which he accuses Epicurus of profound ignorance

of philosophy and disgusting habits, including cohabiting with numerous women (perhaps a criticism of Epicurus' inclusion of women as full members of his school), spending an immoderate amount of money on food, and vomiting twice a day because of his luxurious living. Diogenes Laertius mentions these criticisms in his biography of Epicurus but discounts them as calumny.

Sources

Although Epicurus was a prolific author of over 300 works, few survive in their entirety or at all.

What little is known of his life is found in the tenth chapter of Diogenes Laertius' *Lives of the Eminent Philosophers*, written in the second century AD. Diogenes' biography also preserves the text of the three complete letters of Epicurus (the *Letter to Herodotus*, the *Letter to Pythocles*, and the *Letter to Menoeceus*) and a collection of quotations known as the *Principal Doctrines*. A fourteenth-century Vatican manuscript preserves a similar collection of quotations, the *Vatican Sayings*.

Among the primary sources for Epicurean philosophy are the fragments of an inscription from Oenoanda, in Lycia, modern southwest Turkey. In the second century AD, Diogenes of Oenoanda, an Epicurean Greek, carved a summary of Epicurus' philosophy onto the wall of a portico in his hometown. The inscription provided Diogenes' synopsis of Epicurus' teachings on physics, epistemology, and ethics. The three registers of the inscription contained three treatises, on old age, on physics, and on ethics. Less than a third of the inscription, an important source, has been recovered.

Charred papyrus fragments of Epicurus' 37-volume treatise *On Nature* and the works of authors who quote him were found in the eighteenth century in the personal library of the Epicurean philosopher and poet, Philodemus, at Herculaneum. Some 1,500 papyrus scrolls were semi-preserved at the Villa of the Papyri when the city was buried by volcanic ash during the eruption of Vesuvius in AD 79. Because of the

extremely fragile condition of the recovered papyri, it was not until the mid-1980s that researchers were able to develop an effective technique for reconstructing and reading the fragmentary documents. Today, a UCLA-led international team of scholars, the Philodemus Project, works to reconstruct, translate, and publish the texts. Philodemus (ca. 110 BC–ca. 35 BC) was a member of the literary elite, who counted the Roman poet Virgil (70 BC–19 BC), possibly Lucretius (ca. 99 BC–ca. 55 BC), and Horace (65 BC–8 BC), among his many students. Philodemus' circle was an important point of entry for the ideas of Epicureanism and other Hellenistic philosophies into the Roman world and Latin literature.

Numerous quotations, fragments, and testimonies on Epicurus found in Greek and Roman literary sources are collected in Usener's (1887) compilation, *Epicurea*.

However, the most important extant source for Epicurean philosophy is Lucretius' hexameter poem, *De Rerum Natura* (*On the Nature of the Universe*), the title itself a translation of Epicurus' Greek *Peri Phuseōs* (*On Nature*). Lucretius' work is best understood as a lengthy exposition of Epicurean philosophy, addressed to his patron, the Roman aristocrat and politician, Gaius Memmius. Lucretius describes the poetic form of the treatise as "honey on the cup of wormwood" (a phrase perhaps better understood as "a spoonful of sugar helps the medicine go down") as it is calculated to make the work's technical content more pleasurable and palatable to its reader. Lucretius' poem is dominated by the Epicurean desire to free mankind from superstition and fear of death. Death is nothing more than the dispersion of atoms, which make up the human soul. Although the gods exist, they are unconcerned with human affairs and need not be feared. For if they concerned themselves with mortals, they would be troubled, and gods in their blessedness, by definition, cannot be troubled. Rather, their tranquility provides the ideal for Epicurean peace of mind, which each member of the sect should strive to emulate.

A brief summary of Lucretius' poem will show which aspects of Epicureanism he chose

to elaborate. Book I is devoted to an explanation of atoms and the void (space necessary for the movement of atoms) and an attempt to refute the physical systems presented by the pre-Socratics Heraclitus, Empedocles, and Anaxagoras. Book II presents the kinetics of atomic theory, with particular emphasis on the properties and movement of the atom. Book III discusses the material composition of the human soul and develops various arguments for its finite existence. Book IV contains Epicurean theories of sense perception, psychology, and will, concluding with a disillusioned description of love and sex. Book V discusses the origins of the world, astronomical phenomena, the origin and development of the human species, and the growth of human institutions, language, art, and religion. Book VI, loosely organized, explains various natural phenomena, including thunder, lightning, the periodic rising of the Nile, the attraction exercised by magnets, etc. It concludes rather abruptly with a description of the plague at Athens at the beginning of the Peloponnesian War.

Although Lucretius is faithful to the teachings of Epicurus, his primary focus is on Epicurean physical theory. There are, however, moments in the poem when Lucretius either highlights parts of the Epicurean system or depends upon methodologies or procedures that he does not explicitly set forth. These are the *Canonic* ("Rules of Investigation"), Epicurus' moral theory, and the beliefs about the gods and religion.

Insofar as the criteria of truth and moral theory are relevant to a discussion of food and pleasure in Epicurean thought, further discussion of these elements is necessary.

Epicurean Criteria of Truth

The fundamental criterion is sensation. All objects of perception are true and real, and the criteria of truth are sensations and concepts and feelings. Epicurus holds that while sensation is irrational, there is no other criterion by which one can test it. Sensation must be trusted as a reliable guide to the world, insofar as it is perceptible. Thought is derived from sensation. The

perceptible world is an instructive guide for the investigation of imperceptible objects. Several images of any one class of things unite to form a general concept of a thing, to which we can refer as a test. This general concept of Epicurus is called “anticipation,” because it allows one to anticipate or identify the appearance of anything one seeks or wishes to construct. The third criterion of truth is feeling (*pathos*), which is the basis of Epicurean moral theory. All sensations are accompanied by feeling, but feeling is the distinction between pleasure and pain.

Epicurus distinguished between two classes of objects of investigation: things perceptible in normal experience and things imperceptible. The latter category is subdivided into things that are perceptible but distant (not close at hand for investigation), such as celestial bodies, and things, which by their very nature are imperceptible, such as the atoms and the void.

Epicurean Ethics

Epicurus’ *Letter to Menoeceus* is probably the best exposition of Epicurean moral theory. However, this theory is also evident in most of the *Principal Doctrines* and in many other quotations and references in other authors. It is not, however, featured prominently in *De Rerum Natura*. According to Epicurus, every sensation is accompanied by the feeling (*pathos*) of pleasure or pain. The end or purpose (*telos*) of action is pleasure; pleasure is good; pain is bad. Like sensation, feeling is immediate and irrational. It is also universal. All living creatures, as soon as they are born, take delight in pleasure but resist pain. For example, they desire the pleasure of not being hungry and not being thirsty. They do this by instinct, a natural impulse apart from reason. Not only is pleasure an immediate and irrational sensation but the processes of pleasure and pain are also atomic movements of dislocation and readjustment. Epicurean moral theory is firmly grounded in its physical system.

The assertion that it is man’s purpose (*telos*) to seek pleasure (“the pleasure principle”) led to popular misconceptions of Epicurean morality

in antiquity and later. For example, in a hostile passage, Plutarch alleged that the Epicureans measure the amount of pleasures with compasses, from the stomach as center (Plut., *Non posse*, 1098D). However, this was not Epicurus’ philosophy. He did not teach, as did the hedonist Aristippus and his followers, the Cyrenaics, that each successive moment should be filled with maximum pleasure. Epicurus comments in his *Letter to Menoeceus* that when he talks about pleasure as the goal of life, he is not talking about the pleasures of sensuality, but rather of freedom from pain and mental affliction. It is not eating, drinking, and sex but sober reasoning and the virtue of prudence that produce the happy life. The highest pleasure is thus associated with the absence of pain (*aponia*).

Three further considerations refine Epicurus’ concept that pleasure should be sought and pain avoided. Some pleasures bring pain; some pains result in pleasure; therefore, not every pleasure should be chosen, nor every pain avoided. Pleasure is the satisfaction of want. According to Epicurus, what the body desires is not to be hungry, not to be thirsty, and not to be cold. Such pains are caused by atomic dislocation, and thus, the process of readjustment brings pleasure, as does the equilibrium that results. The static or *katastemic* pleasure of equilibrium is greater and longer lasting than the pleasure of movement (*kinetic* pleasure). The Cyrenaics had been aware of the distinction between *katastemic* and *kinetic* pleasures but rejected it. For the Cyrenaics, *katastemic* pleasures were not pleasures at all but rather the experiences of a corpse.

Lucretius clearly describes this satisfaction of want with reference to eating and drinking. The taste and consumption of food and drink bring a certain kinetic pleasure, but it is in their satisfaction of the pains of hunger and thirst that they restore equilibrium to the body. Overindulgence in food or drink, while resulting in immediate kinetic pleasure, would disturb the equilibrium of the body and therefore should be avoided. It is always the *katastemic* equilibrium of satisfaction that should be sought over the kinetic pleasure of consumption. Cicero, himself a Stoic clearly engaged in polemic against the rival

Epicurean school of thought, misrepresents Epicureanism by saying that the Stoics understand correctly that the first natural impulse of children and animals is for self-preservation, while the Epicureans hold that this first impulse is for kinetic pleasure. Rather, it is clear that Epicurus sees this first natural impulse as a desire for katastemic equilibrium, akin to a desire for self-preservation, as it depends on the satisfaction of basic needs. Epicurus would acknowledge that the kinetic pleasures of taste and consumption accompany the satisfaction of the pains of hunger and thirst, but it is incorrect to attribute to him the notion that the first natural impulse is solely for the thrills derived from these sensations.

Thirdly, there is a limit to pleasure as the satisfaction of desire, beyond which pleasure cannot be increased, but simply varied. Desires may be divided into three classes: physical and necessary, e.g., food, clothing, and shelter; physical but not necessary, e.g., sexual pleasures; and neither physical nor necessary, for example, elaborate food or clothing. The first must be satisfied, the second should be limited by prudence, and the third should be rejected as unnecessary.

If one considers all these elements together, what emerges is that the maximum amount of pleasure is to be obtained from the simple life, which brings pleasures free from pain, results in the static pleasure of equilibrium, observes the limits of pleasure, satisfies those physical pleasures that are necessary, and wisely limits or rejects those that are unnecessary. This simple life is within the reach of everyone, as nature has made it easy for humankind to satisfy its most basic needs. What is not easy is unnecessary to satisfy.

There are pains of the body over which one does not have the same control as over one's basic needs, such as those due to disease or accident. If pain is acute, it does not last long, for it either kills or is cured. If pain is chronic, it is not severe and even permits a predominance of pleasure over pain. To obtain complete freedom from pain, one needs both the control of one's bodily desires and the gift of health.

The mind, too, has its special pleasures and pains. It shares the pleasures of the body, but it

also has the capacity for memory and anticipation, which the body does not. The mind also has its own unnecessary desires, which may bring pain, such as avarice, and the desire for wealth, ambition, and public recognition, such as honors like crowns and statues. Desires for power and wealth often lead to crime; the possession of wealth and power seldom leads to the security of a tranquil life. Lucretius also discusses the pain associated with the mind's ability to look back, which gives rise to remorse or the pangs of a guilty conscience, together with fear of punishment. This is often associated, especially in religion, with the fear of death. These latter two great fears of the mind arise from its ability to look into the future. Both the fear of the intervention of the gods in this life and the fear of the punishment of the soul after death may be dissipated by study of Epicurus' physical theory.

Beyond the dissipation of fear, the mind's greatest positive pleasure is obtained through the study of philosophy, which Epicurus promotes as appropriate and enjoyable during all stages of life. The joy of friendship is also encouraged, and the study of philosophy with a friend unites these two highest pleasures of the mind. Finally, to guard against all disturbance of the mind, the true philosopher will eschew public life and politics and live unnoticed (*lathe biōsas*).

Significance of Epicureanism/Conflation with Gourmandism

It should be clear from Epicurus' moral theory that he advocated a life of moderation and simple pleasures and that he taught that happiness is possible even when one experiences physical pain. Nonetheless, detractors often sought to distort and discredit Epicureanism for ideological purposes. Thus, maxims such as "men feast and drink because they know that pleasure is short-lived" (*De Rerum Natura* 3.913–15) are taken out of context and are understood, incorrectly, as a synopsis of Epicurean ethics. The hedonism of Aristippus and his followers is often wrongly attributed to Epicurus.

Epicureanism According to Early Church Fathers

Early Church Fathers such as Justin Martyr, Tertullian, Clement of Alexandria, Jerome, and Augustine, some quoting Cicero extensively, sought to discredit Epicureanism. They exaggerate the primacy of the “pleasure principle,” viewing it as incompatible with the forms of asceticism popular in the early church. In addition, they saw Epicurus’ teachings about divine indifference to human concerns or afflictions and the mortality of the soul as inimical to Christian thought, for Epicureans deny the immortality of the soul and invoke the study of philosophy and the workings of the physical universe to allay fears about death and the afterlife that are provoked by religious superstitions.

However, neither Epicurus nor Lucretius was an atheist, and both adduced arguments for the existence of the divine. Impiety, according to Epicurus’ *Letter to Menoeceus*, is to accept popular opinions about the gods, which in fact misrepresent them. Plutarch relates that Epicurus used to claim that although he destroyed providence, he left a place for piety (Plut. *adv. Colot.* 8.1111B). In Epicureanism this piety manifests itself in the contemplation of the world with an untroubled mind, which is in itself an act of worship. Since the tranquil life of the gods is the moral ideal, the imitation of their life is a form of worship. Epicurus saw in this tranquility a communion with the divine. In this way, “a blessing comes to men from the gods,” as Eusebius, an early Church Father noted (Euseb. *Praep. Ev.* 15.5).

Although the school of Epicurus at Athens was still open in the third century AD, when other schools had been closed, by the early fifth century, Augustine, a Neoplatonist, could declare that “their ashes [those of the Stoic and Epicurean schools] are not so warm as that a single spark can be struck out from them against the Christian faith” (Aug. *Ep.* 118, ch. 2). Augustine singles out Epicureanism as the school of thought most in conflict with the tenets of Christianity.

Middle Ages

As Epicurus’ teachings were considered the least adaptable to Christian theology, his works did not

circulate in the medieval period as widely as those of other pagan writers, such as Plato and Aristotle. Nonetheless, Lucretius’ poem was available in ninth-century Germany and in France during the twelfth. Quotations of Lucretius appeared in the Latin grammars of Probus and Nonius Marcellus, in Isidore of Seville’s encyclopedic *Etymologies* (seventh century), and in Hrabanus Maurus’ *De Universo* (*On the Universe*, ninth century). However, apart from Lucretius’ poem, there is no systematic treatment of Epicurean philosophy in this period.

But during the Middle Ages, a double image of Epicurus emerges: on the one hand, Epicurus the philosopher, the proponent of an atomistic view of the universe, and, on the other, Epicurus the gatekeeper of the garden of earthly delights, playing the vulgar roles of cook, bartender, and pimp. (Cf. Martianus Capella’s *Marriage of Mercury and Philology* [fifth century], John of Salisbury’s *Policraticus* [1159], John Gower’s *Mirour de l’homme* [1376–1379], and Chaucer’s *Canterbury Tales*.)

Christian polemic against Epicurus continues. Towards the end of the medieval period, Dante locates Epicurus in the Sixth Circle of his *Inferno* for denying the immortality of the soul.

Renaissance

Poggio Bracciolini’s discovery of a manuscript of Lucretius’ poem in a monastery near Lake Constance in 1417 aroused great excitement, but the first extended Humanist treatment of Epicureanism was Lorenzo Valla’s (1431) *De Voluptate* (*On Pleasure*), which was written without reference to Lucretius. Although Lucretius was readily available by the mid-fifteenth century, the general identification of Epicureanism with extreme hedonism was such as to discourage the orthodox from too open an interest in this philosophy. Nonetheless, Michel Montaigne’s *Essays* (1580) demonstrate a more than casual familiarity with Lucretius, containing no fewer than 149 quotations. François Rabelais’ *La vie de Gargantua et de Pantagruel*, five sequential novels written in the sixteenth century, are Renaissance tales based on medieval themes. Although Rabelais does not mention Lucretius or Epicurus by

name, his novels clearly bear the impression of the bawdy medieval persona of Epicurus. The story is that of a long wish fulfillment in nearly all areas of mental and physical, although not sexual, desire.

Among the scientists of the Renaissance who sought to revive the theories of the workings of the universe espoused by Epicurus and Lucretius were Giordano Bruno (1548–1600) and Galileo Galilei (1564–1642). Both of these men suffered severe censure from the Catholic Church for these and their other ideas, considered heretical.

Afterwords

In the seventeenth century, the anti-Aristotelian philosopher and scientist Pierre Gassendi undertook a dramatic revision of Epicureanism to remove it of elements at variance with Christian teaching. Although Epicureanism was practically unrecognizable as a result, Gassendi's efforts led to a dramatic upsurge in European scholars' interest in the scientific theories of Epicureanism. Influenced by Gassendi, John Locke's interest in Epicurean Canonics (the "Rules of Investigation") and in the primacy of sensation in the formation of ideas played an influential role in the development of British empiricism. Gassendi's counterpart in the English-speaking world was Dr. Walter Charleton, graduate of Magdalen Hall, now Hertford College, Oxford, and physician in ordinary to Charles I and Charles II and future fellow of the Royal Society and the Royal College of Physicians. Charleton's first publication, *The Darkness of Atheism Dispelled by the Light of Nature* (1652), advertised that it was the "new" atomism that he espoused. At about this time, a characterization of the Epicurean emerges that is closer to the modern connotation of "epicure," someone who cultivates refined and sophisticated tastes and manners at table. William Whately's *Prototypes* (1646) describes Potiphar as "such an epicure was [he] – to please his tooth and pamper his flesh with delicacies."

In nineteenth-century America, Thomas Jefferson identifies himself as an Epicurean in his 1819 *Letter to William Short* and provides therein an accurate précis of Epicurean philosophy. In England, the Epicurean promotion of happiness

as the chief end of living provided support for the Utilitarian movement of Jeremy Bentham (1748–1832) and John Stuart Mill (1806–1873). Bentham was an ethical hedonist, and drawing upon Epicureanism, he held that the moral rightness or wrongness of an action was a function of the amount of pleasure or pain that it produced. He formulated an algorithm, the *hedonic calculus*, to facilitate selection of the best course of action by considering the variables of the intensity, duration, certainty, proximity, proliferation, purity, and extent of pleasure and pain associated with it. Bentham's student Mill correctly cites the primacy of intellectual over physical pleasures in Epicureanism, and Mill's "proof" of the principle of utility adduces the Epicurean reliability of sensation. According to Mill, just as visible objects can be seen and audible objects heard, so desirable objects are desired. Walter Pater's *Studies in the History of the Renaissance* (1873) and his philosophical novel *Marius the Epicurean* (1885) were important contributions to the Aesthetic and Romantic movements. In the early twentieth century, the works of the French author and philosopher Anatole France (*The Garden of Epicurus* [1895] and *The Gods Are Athirst* [1912]) demonstrate sympathy with Lucretius' Epicureanism. In 1921 France won the Nobel Prize for Literature, and in 1922 the Catholic Church placed all of France's works on its Index of Prohibited Books.

Summary

The positive influence of Epicurean philosophy throughout the ages should not be underestimated. Simultaneously, the satiric caricatures of the vulgar gourmand and the fussy epicure yet persist. Nonetheless, these are incorrect characterizations of Epicurus' original philosophy.

Cross-References

- [Aesthetic Value, Art, and Food](#)
- [Food-body Relationship](#)

- Gluttony
- Gustatory Pleasure and Food
- Taste, Distaste, and Food

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Equipment Sharing in Agriculture

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Synonyms

Machinery sharing; Shared use of farm assets

Introduction

For many farming operations, shared use of machinery may offer a “trifecta” for improving farm business performance – increased profitabil-ity through production efficiency and cost reduc-tion, reduced risk, and a reduction in invested capital. Shared use of machinery, with or with joint ownership, is one strategy growers have explored to gain access to equipment that is used only infrequently and is relatively expen-sive, making individual ownership impractical or even infeasible. Access to new, technologically advanced farming equipment can directly affect the income statement through improved produc-tivity and quality and replace expensive or hard-to-find labor. Higher capacity equipment than could otherwise be owned alone can reduce time windows needed to complete critical opera-tions (e.g., planting or harvesting before the rains) significantly reducing production risk. In many cases, owning only a share of a high-priced machine reduces individual investment and the invested capital, increasing returns on assets and equity. However, the fact that shared use of machinery is relatively rare suggests that the costs involved in sharing outweigh the benefits for the vast majority of farmers.

Machinery sharing rings and other farm-level cooperative arrangements are more common in Europe and Canada. A report on the socioeco-nomic impacts of rural business rings in Scotland estimates that 23 % of Scottish farmers belong to a machinery ring. De Toro and Hansson report 5,000 members in 20 associations in Sweden

noting this is only about one-fifth the level of activity in Germany (2004). Harris and Fulton (2000a) report more than 1,000 member farms in 47 CUMA's (Coopérative d'Utilisation de Matériel Agricole – loosely translated as “cooperative for the use of farm implements”) in Quebec. In the United States, the practice of sharing equipment and labor with other producers on a more routine basis is less common, but there is some evidence that interest in the idea is growing. For example, the original idea behind the agricultural leasing firm MachineryLink was to share machinery between farmers over a geographic distance in order to take advantage of differences in growing seasons across regions.

Potential Benefits of Equipment Sharing

Cooperative equipment and labor sharing arrangements cannot only permit small- and medium-sized producers to access cost-reducing technology and economies of scale without incurring significantly more debt or acquiring more land, they can also provide less obvious benefits. For example, management and marketing benefits for the operation and its participating producers may come as a by-product of the coordination required to make the cooperative work.

Working in a group to share machinery tends to increase the number of acres serviced by the machinery, reducing inputs and average costs, for a given amount of output. Sharing can therefore result in greater efficiency, making newer, larger, and more technologically advanced equipment economical. Capital costs decline as the number of partners increases for two reasons. First, self-financing becomes easier. Second, capital will be used more intensively and thus more efficiently. In addition, group members can in some cases improve labor productivity, making more efficient use of labor during peak fieldwork times, by coordinating tasks to reduce duplication and allowing for task specialization (Allen and Lueck 1998; Edwards 2009b). Such managerial improvements result in internal economies of scale or an ability to produce more output with the same inputs.

The coordination of farming activities related to equipment sharing may also result in external economies of scale, or size advantages enjoyed in accessing inputs, obtaining and negotiating terms of credit, storage, services, and marketing and distribution opportunities. For example, larger farms can often negotiate volume discounts on inputs. Larger farms may be able to attract specialty contracts that pay premiums for delivery of a larger amount of product. Like marketing cooperatives which obtain higher retail prices through quality assurance, smaller farmer groups may be able to successfully coordinate production practices such as planting and harvest times, in order to maximize quality specifications.

Other benefits include an ability to draw on the experience, labor, and ideas of other members, lower financial risk, shared operational risk, and environmental benefits from reduced input use. Sharing equipment is also a strategy to help younger farmers get started in farming with lower upfront investment in machinery (Edwards 2009; Samuelsson et al. 2008; Andersson et al. 2005; de Toro and Hansson 2004; Harris and Fulton 2000a, b; Gertler and Murphy 1987; Gertler 1981; Groger 1981).

Potential Costs of Equipment Sharing

Thus, the question arises: if there are so many potential advantages to sharing equipment with other growers, why is the practice so rare? Certainly, there are some apparent additional explicit costs from sharing equipment relative to individual ownership. Transportation costs of moving equipment among farms can be significant, particularly if sharing occurs over some distance. There may be costs incurred in setting up an agreement, for example, legal fees for designing contracts or establishing a formal business entity and in enforcing the agreements and settling disputes should the need arise. In addition, there are a number of more subtle potential costs involved in joint use of an asset like farm machinery. A number of pecuniary and nonpecuniary costs may be incurred by partners in a sharing arrangement as a result of the need to make collective

decisions and the division of the benefits derived from the jointly owned or shared asset(s). Potential drawbacks identified in the research include a loss of timeliness in field operations, decreased autonomy in decision-making, more complex management, potential problems with lenders and split lines of credit, and difficulties in unwinding the arrangement should the partners desire to do so.

Because joint owners of an asset do not bear all the wealth effects of their decisions regarding that asset, joint ownership inherently produces conflicts of interest (Holderness 2003). The remainder of this entry discusses five overlapping categories of potential conflicts associated with shared use and ownership of an asset: scheduling of use and timeliness concerns, moral hazard or free-riding problems, costs of collective decision-making, opportunism and hold-up problems, and risk.

Scheduling of Use and Timeliness Concerns

One of the more obvious potential conflicts that may result from shared use of farm equipment is disagreement regarding who has use of the machine when. Crop yields and quality are impacted by the dates of planting and harvesting. Since the window of optimal timing for farming operations is often short and can be highly uncertain due to weather variability, timeliness is a critical issue. The value of losses due to bad timing is difficult to measure, but can certainly result in lost revenue due to less than optimal yields and quality (de Toro and Hansson 2004; de Toro 2005; Larsén 2007). The timeliness issue may be compounded when sharing occurs over some distance because of the time taken to transport the equipment to partners' field. On the other hand, significant distances between sharing partners may alleviate this problem if planting or harvest windows do not overlap. Farmers may experience fewer weather delays in farm operations if fields are more spread out. In addition, if pooling resources allows sharing partners to afford larger, higher capacity equipment, timeliness issues may not increase and, in fact, may be reduced if coordination of use is not too cumbersome (Edwards 2009).

Scheduling of equipment use to minimize, or at least reduce, timeliness costs can be achieved in a variety of ways. Contracts that include stiff penalties for failure to deliver the equipment can incent partners to hold to negotiated dates of transfer (Wolfley et al. 2011). In situations where sharing partners are geographically proximate, timeliness costs can be alleviated by treating all members' fields as one large operation and scheduling use on an "as ready" basis or by devising a rotation system that takes advantage of differences in land types (e.g., higher ground is typically ready to be worked earlier than lower ground (Artz et al. 2010)).

Moral Hazard or Free-Riding Problems

A free rider is a person that benefits from an effort contributed by other members of a group without contributing sufficiently himself. Free-riding problems may occur in equipment sharing arrangements when one or more of the partners involved do not contribute their fair share of equity, do not contribute a proportionate share of labor (an effort moral hazard problem), or do not provide adequate care of the shared machinery (an asset moral hazard problem). These situations occur when there is asymmetric information, in particular, when any individual member's benefit is determined by the joint effort of the group, and it is difficult to verify the actions of other partners because effort is not perfectly observable. When an asset is shared, users of the asset may have incentives to overuse or misuse the asset because they do not take into account the full value of the asset if they own only part of it (Holmstrom and Milgrom 1994; Holderness 2003; Holmstrom 1982). Wolfley et al. (2011) provide the following example: "a moral hazard problem, for example, may arise when one producer agrees to perform maintenance on the machinery as stated in the contract, but only performs the maintenance shortly before delivery rather than according to the manufacturer's recommendations." The effort moral hazard problem may become more severe as the number of partners increases because each partner shifts effort from farm to off-farm activities (Allen and Lueck 1998).

Monitoring can help ensure that other members are careful with the shared equipment or are contributing an agreed-upon number of hours of work when labor is shared, but it may be costly (Allen and Lueck 1998; Larsén 2007). Allen and Lueck (1998) find that when production is seasonal and there are many stages to production with few tasks, monitoring costs are high, and partnerships are relatively rare. Larsén (2007) contends that social norms, peer pressure, and dynamics (repeated interaction) can mitigate the moral hazard costs involved in sharing arrangements. She concludes that when there is a high degree of trust among partners, the perceived moral hazard problems are negligible.

The free-riding result rests on fairly strong assumptions about the inability of partners to observe one another's efforts. In reality, one likely can tell how much effort partners are putting forth (although imperfectly), so some amount of "horizontal monitoring" or informal policing through peer pressure is possible and effective at preventing free riding. This is more likely when partners are located in close proximity to one another, as opposed to sharing over long distances. Sharing equipment with a neighbor, or neighbors, facilitates observing one another's behavior on a regular basis. Personal relationships among the collaborating farmers make free riding more costly in terms of social norms (Larsén 2007). Furthermore, repeated interaction with partners sharing arrangements that exist over time (multiple years) provides incentives for producers to act in good faith in order to maintain the relationship. In cases where monitoring is more difficult, such as sharing machinery over long distances, well-written and enforceable contracts can help solve free-rider problems.

Costs of Collective Decision-Making

Joint use or ownership of farm equipment requires some degree of joint decision-making by the partners involved. Collective decision-making can be costly, not only in terms of the time involved but also because it may result in inefficient decisions, particularly when individuals in the group place their own interests above the interests of the group as a whole (Hansmann 2000).

Sharing equipment with other farmers decreases autonomy and reduces flexibility in individual members' decisions. While some types of equipment may allow for a degree of variation in cropping systems across member farms, other equipment might not. In these situations, collaborating farmers need to decide on a common production system. Brand loyalty or loyalty to particular suppliers can cause conflict and may prevent members from realizing other potential benefits of their cooperation, such as savings from bulk input purchases. If labor is also shared, the off-farm commitments of individual members may cause disagreements about the timing and amount of contributed labor (Artz et al. 2010). Conflicts of interest and inefficiency of collective decision-making can prevent quick responses to rapid changes in conditions which can be problematic in farming due to its weather-dependent nature and high levels of uncertainty.

Collective decision-making is easier, less costly, when the interests of group members are well aligned. This emphasizes the need for finding like-minded partners with whom to share equipment. Also, devising relatively efficient methods for making decisions such as delegating information gathering and other tasks to individual members or committees and establishing voting procedures can also significantly reduce these costs.

Opportunism and Hold-Up Problems

Sharing equipment with other farmers could create situations for opportunism and hold-up problems. Opportunism, in a broad sense, refers to a willingness to act in self-interest at the expense of another party (Love 2010). In the context of sharing a piece of farm equipment, one member may act opportunistically by failing to deliver a shared combine to his partner at an agreed-upon date, for example, if weather delays result in an inability to complete harvest in a timely fashion. In somewhat larger groups, a majority of group members could act to exercise their right of control in the decision-making process in such a way that members in the minority are harmed. For example, a majority of younger members could vote for the group to undertake significant

investments in new equipment. Members looking to retire or leave the sharing arrangement in the near future might not realize the returns from the long-term investment.

Hold-up problems, or situations in which one party to a contract holds some economical bargaining power and uses it to exact concessions from another party, can also arise in this context (Cai 2003). This may be especially likely when members' preferences, or resources, are not well matched. Hold-up problems can occur even without opportunism, in cases where unusual or unanticipated events render the current agreement obsolete (Love 2010). For example, even among farms of roughly equal size, differences in land productivity, or a localized weather event, could create a situation in which partners' financial resources diverge. As a result, they may disagree about when to replace or sell a shared machine, with the dissenting farmer effectively holding up his partner(s).

Additional Risk

Entering into a joint ownership arrangement can effectively tie the outcome of a critical farm operation (e.g., harvest) to another person's decision-making and behavior. In this way, partners in equipment sharing agreements can expose themselves to additional risk. A partner may not uphold his end of the bargain to deliver a shared machine on time or may incur a loss that has impacts on other partners. For example, individual default could lead to a collective liquidation of the asset. Well-written and enforceable contracts or a high degree of trust among partners can mitigate some of this uncertainty.

Summary

Shared use of farming equipment has the potential to improve farm business performance by enhancing profitability, lowering risk, and reducing invested capital. Yet, the costs associated with the variety of possible conflicts inherent in the joint use of an asset render the practice relatively rare. Nevertheless, interest in equipment sharing may grow as machinery costs rise, and

the level of technical knowledge and skill required for production increases. It is unlikely that widespread adoption of these models for sharing machinery will occur given their complicated nature unless solutions for resolving conflicts are devised and disseminated. Future work should therefore be aimed at developing practical strategies for reducing or eliminating these potential conflicts involved in shared use of an asset.

Cross-References

► [Farms: Small Versus Large](#)

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Escoffier

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Synonyms

César Ritz; Fine dining; French chefs; Haute cuisine; Menu design; Restaurant service

Introduction

The prima facie ethical problems surrounding the cultural practice of luxury dining are obvious enough. A market for great luxury implies great wealth disparity and is essentially classist.

The fact of luxury dining entails that some significant measure of the wealth of the better off is used for their own optional enjoyments instead of for the benefit of the needy. Luxury dining typically involves the extraordinary use of animals, for arguably frivolous human pleasures. It can also involve uses of land and energy resources that are inefficient, unjust, and unsustainable. Luxury dining arguably involves a very inefficient use of human capital as well, consuming countless labor hours that might be better spent helping to solve real problems, in order to tantalize a lucky few. In a world in which human malnutrition and poverty are widespread, enormous wealth is concentrated among the few and powerful, inhumane treatment of animals for food is routine, and unsustainable and inefficient agricultural and harvesting practices abound, luxury dining as a cultural practice must, from an ethical point of view, stand suspect at a minimum and perhaps be convicted. If a practice is suspect, then so must be its practitioners and perhaps chief among those its founders. One such founder of the current practice of luxury dining is the subject of this essay, the chef and father of modern French *haute cuisine* Auguste Escoffier. So it must be conceded at the outset that, from a variety of perspectives, Escoffier's contribution to ethics may well be negative.

But the ethical significance of a practice is more than just its overall tally on the ledger sheets of justice and the good. Ethics broadly conceived concerns the conditions for flourishing – excellent – human life. Cultural practices are in substantial part constitutive of situated human lives and thus represent opportunities for pursuing and attaining excellence of the self. Individual and collective pursuit of excellence within a cultural practice also advances the practice itself and may significantly contribute to the advancement of the social life in which that practice has its place. Striving for excellence within, and the advancement of, cultural practices is moreover a paradigmatic exercise of practical rationality, and so the development of new cultural practices provides opportunities for human beings to realize most fully their distinctive and highest virtues. The development of cultural practices in the

context of new kinds of lives, careers, artistic expressions, and social arrangements, each with their own distinctive normative dimensions and opportunities for excellence, may therefore be a significant contribution to ethics in this broad sense. In this light, Escoffier's contributions to ethics are substantial. Moreover, not only did Escoffier make substantial contributions to the development of a cultural practice, he did so in a way that was itself virtuous, with significant degrees of generosity, charity, and respect and concern for others, thus setting standards of excellence not only within his profession but for the conduct of that profession itself. These contributions, as well as some of the ethical concerns they bring with them, will be the focus of this essay, which begins with a brief sketch of Escoffier's long and productive life.

Life

Auguste Escoffier (the "Georges" which often precedes the "Auguste" was a nickname) was born in 1846 at Villeneuve-Loubet, in Provence. At the age of 13, he was apprenticed to his uncle's popular restaurant in the nearby resort city of Nice, there gaining his first experience of the hot, unsanitary, rough, and slavish life of the restaurant laborer. He was also exposed to wealth and its demands for excellence. Having completed his apprenticeship, Escoffier left Nice in 1865 for a position at the esteemed restaurant Le Petit Moulin Rouge, in Paris. He began service as a lowly kitchen assistant under Chef Ulysse Rahaut, who, though a tyrant typical of his metier at the time, recognized ability and ambition; he steadily promoted Escoffier through the ranks.

In 1870, the Franco-Prussian war broke out, and the Ministry of War, in need of cooks to serve the headquarters of the army of the Rhine, conscripted Escoffier, then on active reserve, from the Le Petit Moulin Rouge. During the campaign, Escoffier faced constant pressure to produce meals for a moving encampment with few provisions. He learned how to make much from want, wasting nothing. France lost, the army of the Rhine was taken, and Escoffier was encamped with hundreds of other prisoners of war near Mainz. Food was scarce and conditions

deplorable. But Escoffier soon managed to get himself appointed as chef to some aristocratic French officers whom the Prussians had interned in luxurious villas in Wiesbaden.

In 1873, Escoffier returned to Paris and Le Petit Moulin Rouge, taking over as chef de cuisine from the departing Rahaut. He introduced radical kitchen reform, banning the consumption of alcohol and the use of loud and vulgar language. Le Petit Moulin Rouge thrived and was a draw for royalty and celebrities. Around this time, he began his friendship with the actress Sarah Bernhardt, which would last the rest of her life. He also began experimenting with the preservation of foods, especially the canning of tomatoes. Tomatoes were a principal ingredient in many of his dishes, along with garlic – he was a true Provencal – this latter to the delight of his clients when they were unaware it perfumed their fare and often to their horror when they found out.

In 1884, Escoffier, now married to the poet Delphine Daffis and running the kitchens at the famed Maison Maire in Paris, received the summons that would make him a star. The Grand Hotel in Monte Carlo had lost the services of its valued chef. The hotel's director, and ambitious Austrian of humble origins named César Ritz, reasoned that he might as well seek out his departed chef's *maître*, who happened to have been Escoffier. Ritz made Escoffier a generous offer, which the chef accepted. Neither "Ritz" nor "Escoffier" was a household name at the time; both would soon become so.

It was at the Grand Hotel that Escoffier became persuaded that the complicated display system of the Grand Cuisine of the time, in which numerous elaborate and varied dishes were served to tables all at once, should be abandoned and replaced by a simpler kind of cooking, with meals tailored to the desires of individual diners. His conversion was total and zealous. He began revolutionizing kitchen organization, recipe design, menu composition, and even table setting to suit the new style. His motto was "*faites simple!*" He also ramped up his writing career, which had more or less begun in 1883, when he cofounded the journal *L'Art culinaire*, to which he contributed for many years.

One client of the Grand Hotel was the impresario Richard D'Oyly Carte, who had been made rich and famous by his productions of Gilbert and Sullivan operettas at London's Savoy Theater (James 2002, p. 113ff). D'Oyly Carte lamented the state of London hotels and dining and hatched a plan to remedy the situation: he would build a new hotel in London of the most opulent style imaginable, to go along with the Savoy Theater, and he would get Ritz to run it. Ritz's price was as follows: an astronomical salary, 6-months-a-year leave to pursue his own interests, and Escoffier to run the Savoy kitchens. Ritz approached Escoffier, who, daunted by the idea of dealing his French *cartes* to English tastes, reluctantly agreed to set up the Savoy kitchen and train the staff. Escoffier expected to be at the Savoy for some several months. He stayed for about a decade.

The labor of putting together a proper French kitchen *à la* Escoffier at the Savoy was enormous, especially since the dismissed staff had trashed the place before departing (Escoffier 1985). As Escoffier expected, winning the English over to French cuisine was a considerable challenge. His efforts were ingenious. For example, he tricked the English into eating frog's legs by coyly naming them "cuisses de nymphes" (nymph thighs). He also knew he could not trust the English, or even the English headwaiters, to order a dinner intelligently from an extensive *à la carte* menu of the sort he had devised. So, in an ironic turn back to the older style, he invented the *prix fixe* menu, a set meal devised by the chef at a given price. All the efforts paid off. The Savoy was a huge success, the place to be and be seen. Escoffier and Ritz were the talk of London society.

Ritz and Escoffier left the Savoy in 1898, under mysterious circumstances. But they were now in a position to do as they pleased. Ritz and his company set up the Ritz Hotel at the Place Vendôme in Paris and then the Carleton Hotel in London, with Escoffier designing the kitchens and menus and with the Carleton in direct and successful competition with the Savoy. Ill health forced Ritz into retirement in 1906. Escoffier continued his writing, publishing in 1903 his mammoth *Le Guide Culinaire* in 1903, a bible of French classical cooking still consulted by

chefs around the world. He also sought commercial success with preserved tomatoes and a variety of bottled sauces and jarred pickles. In this as in so much else, he was a pioneer of what is now a very common practice among celebrity chefs.

Escoffier helped establish the *Ligue des Gourmands*, an international culinary society that put on, to much press attention, elaborate multicourse dinners with identical menus of dishes from *Le Guide Culinaire*. He also helped found and contributed to the culinary journals *Le Carnet d'Épiqueure* before the First World War and *Revue Culinaire* after (James 2002, p. 228ff). Escoffier played the role of celebrity chef with vigor and panache, presiding over culinary exhibitions, lecturing, and arranging important dinners for aristocracy and royalty, including, on at least three occasions before the First World War, Kaiser Wilhelm II, who, so impressed by one meal Escoffier had put on, exclaimed "I am the Emperor of Germany, but you are the Emperor of Chefs." This oft published remark morphed into the title with which Escoffier's name has ever since been associated: "The King of Chefs, and Chef of Kings."

Escoffier retired from the Carleton in 1920, but remained engaged in sundry restaurant and commercial projects, and continued lecturing and writing. In 1928 he was made *Officier de la Légion d'Honneur*, the first chef to be so honored. 1934 saw the publication of his second major work, *Ma Cuisine*, with some 2,500 recipes. On February 6, 1935, his wife of 56 years, Delphine, passed away at their Monte Carlo home. Escoffier followed her 6 days later.

There is a sad, but necessary addendum. Escoffier's and Ritz's departure from the Savoy has long been a matter of mystery. It was hasty, and no obvious reasons were made known. Beginning in 1984 (Barr and Levy 1984), the English journalist Paul Levy has alleged that Ritz and Escoffier were dismissed on the grounds that they had been wooing investors for Ritz's new Carleton Hotel, which was to compete with the Savoy, at the Savoy's own expense. Levy alleges, and there is corroboration for these allegations, that Escoffier signed a confession that he

took illicit commissions – kickbacks – from the hotel's suppliers. To what extent this confession is merely an admission to what would have been unremarkable business as usual at the time, and obtained by the Savoy only to defend against the possibility of a suit for wrongful dismissal, is unclear.

Elevation of the Profession

Escoffier insisted on a level of dignity and decent working conditions for kitchen staff that was unprecedented. The caricature of the angry, shouting chef who rules by terror and berates his staff still has some truth to it, but it was very much the norm of mid- to late-nineteenth-century France. Escoffier insisted on a quiet kitchen, in which the chef could speak rather than yell his orders and still be heard. Indeed, given the other changes in kitchen practices he initiated, this was necessary. Escoffier demanded the highest standards of sanitation in his kitchens and of his workers. Food preparation areas were to be spotless and tidy, as were the cooks who worked in them and their standardized uniforms they wore. Working neatly and cleanly became acknowledged virtues. He believed that cooking is a dignified craft, worthy of an artist, and of great social importance. He treated his colleagues in a manner consistent with this and made considerable efforts to ensure that professional cooks were taken care of in their retirements and old age – even the tyrant Rahaut (James 2002, p. 218). Rather than protect secrets of his own success, as a tradesman might do, Escoffier self-consciously spread them, so as to improve the lot of diners everywhere and the dignity and conditions of those who cooked for and served them. The success of Escoffier's restaurants, and the comprehensive and progressive training he provided to his employees, meant that the practices he instituted in his kitchens spread into industry standards. As Hegel pointed out, it is only within the constraints imposed by norms or standards that freedom and creativity become meaningful. By generating and propagating new standards for how a professional kitchen ought to be run, Escoffier made it possible creatively to excel at meeting those standards.

Escoffier's collaboration with Ritz had lasting social impact. The union of luxury and modernity of both bed and board, the attention to elegance and detail, and the uniformity of that standard throughout the Ritz chain of hotels had never been equaled. Their Savoy was the first public establishment in England at which it became fashionable for the aristocracy to dine and to see and be seen. Previously, British men of means or title dined primarily at their clubs, and it was thought shameful for a Victorian woman of character to dine in public in the company of men. Ritz and Escoffier, bringing continental customs across the channel, changed that forever. Men now wanted to dine publically at the Savoy and its imitators, and, if modestly attired, women could join them. English women could thus be seen, could listen, and could even be heard in public gatherings in the same site as men of rank, power, and privilege (Ashburner 2004). American practice, as was so often the case, followed the English (Ritz and Escoffier collaborated on projects in New York and Pittsburgh). Possibly, this contribution to what might be called the publication of respectable women had some significance for the suffrage movement in England and the United States. In France, women had long dined publically in restaurants with men, so Escoffier and Ritz's ventures instigated no parallel change of practice there; French women did not get the vote until 1944.

Brigade System

Escoffier introduced and refined the brigade system of kitchen organization, designed on the plan of the military brigade – a command consisting of a number of battalions variously deployed. Prior to this introduction, restaurant cooks tended to be responsible, either individually or in small groups, for the production of dishes from start to finish (the exception being the saucier, responsible for producing the four mother sauces on which all others were based). This prior system was highly chaotic, individual cooks each having to do the several steps their various dishes required and often needing to share, or compete for, the same heat source or equipment to do so. Under Escoffier's plan, the kitchen was organized

around stations, each with its own dedicated staff, with the various steps of recipes distributed to the stations suited to their performance. The various components of a dish are prepared in parallel at the several stations and then assembled on the individual diner's plate (or the serving platter, if the dish is finished tableside). In a large kitchen, there might be seven or more stations, e.g., *garde-manger* (larder), pastry, roasting, fish, *entremetier* (vegetables, soups and salads, etc.), and sauces, each with its own chef (*chef de partie*) and several cooks ("commis") and perhaps apprentices.

Nowadays, many professional chefs begin their careers in culinary academies. But it is well known that the best training a professional chef can receive is the sort made possible by Escoffier's innovation: rotation through each of the stations of a brigade, starting at the bottom. That way, you must do, and hence learn, everything. And given the hegemony of the brigade system, the skills learned are transferable to any comparable establishment. Even today, the most talented and ambitious graduates of cooking academies hope for a chance to make such a rotation, at the best and most professional restaurant kitchen that will have them. They follow a well-defined career path carved out by Escoffier. Prior to Escoffier, the cook had really only one route to something like real professional respectability: private service in the hire of nobleman. Escoffier is the first of the great French chefs to earn fame cooking for the public, as a restaurateur, as have almost all others after him.

Progress is rarely if ever without cost, and the development of institutional structures and practices yield new forms of oppression as well as flourishing. Thus it should be pointed out in fairness that the brigade system makes possible a kind of alienation through specialization. If a cook is not in fact rotated through the various stations, but is permanently posted to a particular task, they have not a career in which they learn, develop, and progress to the goal of becoming a chef, but the equivalent of a dead-end assembly line job. And in fact, most kitchen brigades, at least in the United States, are staffed not by

aspiring chefs making progress through the ranks, but by low-wage, often immigrant, laborers, with little chance of advancement and a kind of permanently narrow skill set that would ill suit them for employ even as full-service short-order cooks. It is one thing to learn the craft of professional cooking through serial exposure to all of its facets. It is quite another to spend 8 hours a day, 5 days a week, 50 weeks a year cleaning lettuces, tossing salads, and slicing fruit. Where labor has no guarantee of a voice in the conditions of its employ, the brigade system can operate to limit as much as to enhance opportunities for flourishing.

Revolution in Menu and Service

The brigade system led to a number of substantial developments in dining style and practice. Before its advent and popularization, the so-called French service was the restaurant norm: all dishes, hot and cold, soups and roasts, and savories and sweets, would be brought to the table at once (or in a few stages, each featuring a full range of kinds of dish), in large portions of more or less ornate composition. Diners then would select the dishes that most pleased their eye. For large parties this might mean that a diner got to eat what was close to him or her. The finer the restaurant, the more numerous and elaborate the dishes served. The area in which a chef could best show off his talent was in presentation, and the spectacularly elaborate presentation was the glory of French culinary art. Often enough the dishes were pieces of architecture – indeed, famous buildings modeled in hard pastry, marzipan, lard, what have you – intended for show alone. Such *pièces montées* were the centerpieces of the Grand Cuisine of Carême. In contrast, in service *à la russe* – in the Russian style – diners are presented with dishes in sequence, according to the proper order of consuming them. This has obvious advantages: dishes are presented and eaten at their proper temperatures and in suitable order, and everyone at the table gets a share of each dish. But it has disadvantages as well, related to both timing and variety. Because dishes are prepared and plated to order, the diner must

wait, and if a dish is very elaborate and time consuming to prepare, the wait will be excessive. So dishes must be comparatively simple. Variety also suffers because so much of the cooking takes place during the service itself: the same number of cooks can produce a greater variety of dishes in say, 8 hours, than they can in two. While the Russian style service had been introduced to France in the 1830s (Tannahill 1988, p. 302), such limitation kept it from becoming widespread.

The brigade system compensates for these limitations by breaking down dishes into their component parts and thereby increasing efficiency. The various components of the dishes on offer are prepared in advance for optimal readiness and ease of finishing execution at the time an order is placed. Accordingly, each station in the brigade has its own *mise en place* (“put in place”). This preparedness, tailored to the exigencies of the offerings, makes the production of the dish once ordered vastly less time consuming. But it also permits each station to perform many more tasks of similar kinds at once, allowing for far greater variety in the dishes that can be offered and prepared on demand. Escoffier’s brigade system thus allowed him both to introduce the *à la carte* menu, from which individual diners select what they want to eat from among many choices, and to facilitate the rise to dominance of the Russian style of service and its variants. These are industry standards diners take for granted today.

The logic of the brigade system also has consequences for how a recipe can be written, leading to a new systematization and codification of classical French cooking. Escoffier’s recipes can be maddeningly terse. For example, the recipe for *Tournedos Rachel* – an elaborate dish of filet steaks on toast with artichokes, marrow, and red wine brown sauce – is a mere 41 words long. (Escoffier 1969, pp. 382–383). Since the dish is composed of its components, its recipe need only mention the immediate components and their combination. But those components might themselves be highly complex. *Le Guide Culinaire* presents the composition of elements into

components and components into dishes in a near axiomatic fashion. This work gives the canonical versions of the repertoire of classical French dishes; it is intended for professional chefs, who still consult *Le Guide Culinaire* today.

The typical French home cook knows better than to try to attempt the classical dishes of the professional French kitchen. Part of Child, Beck, and Bertholde’s accomplishment in *Mastering the Art of French Cooking* (Child et al. 1961) was to convince American home cooks that they could indeed produce many of those same dishes in their own kitchens. They did this by writing recipes for them that reintroduced the many steps Escoffier’s recipes left out and explaining clearly and in detail the techniques required to perform them. But that accomplishment would arguably have been impossible had Escoffier not systematized and codified the classical cuisine they then made relatively accessible. In this sense, Escoffier revolutionized not only professional but home cooking and dining as well, encouraging an increasing number of passionate amateurs to adopt fine restaurant dining standards as their aim.

The idea that food prepared and consumed at home should resemble food served from professional kitchens is potentially problematic, given the typical elaborateness and richness of much luxury and other restaurant cooking, as well as the tendency of restaurants to justify profitable pricing by means of excessive portions. Those who can afford the money and time it takes to replicate restaurant food at home may do so at considerable cost to their health; those who cannot may choose to forgo preparing their own food altogether, relying instead on unhealthy processed and fast foods. If a regular diet of simple, whole, unprocessed, fresh foods is healthiest, the restaurant meal is dangerous paradigm for what one should strive for at home.

Efficiencies and Consideration for the Less Fortunate

Escoffier was attentive to the fact that fine restaurant dining is a social practice requiring plenty while many have little. He knew, and

appreciated, that his was an exclusive art possible only where there are deep pockets and a leisured class. He also believed that it, and he, ought in some way to serve the common people.

Excellence in cooking, as Escoffier insisted, requires fine, fresh ingredients, and this in turn requires that, to a great extent, the kitchen must start from scratch every day. For this reason, supplies must be readily and regularly available and purchasing precise and controlled. Waste is economically and ethically unacceptable, but in a restaurant dedicated to excellence and a new start every day, it is inevitable. Escoffier did what he could to minimize it and, in the course, to make sure that those in need benefited from the excess luxury of those with plenty. When the quails' breasts alone figured on the banquet menu, the legs were saved for the nuns to collect for the needy. He extended the Little Sisters of the Poor a standing invitation to collect surplus every morning for distribution to the hungry, first at the Savoy and then at the Carleton (Escoffier 1997, p. 99).

During the war, Escoffier had witnessed and deplored the way that procurement contracts were awarded to lowest bidders, who were then so ill funded and otherwise unscrupulous that they failed to perform to the contracts' standards, to the detriment of the troops. He was convinced that this practice should be stopped, and the quest to induce the ministry to put an end to it became something of a crusade for Escoffier later in his career (James 2002, p. 192). He also witnessed the starvation conditions at the camps for rank and file prisoners in close proximity to the plentiful conditions enjoyed by their captured officers. In general, he had the feeling that the war had been badly mismanaged by the command, causing great suffering and defeat for the troops. Perhaps influenced by these experiences, Escoffier regarded the problem of poverty as one of mismanagement and distribution, rather than scarcity. He championed modern methods of food preservation that reduce spoilage, pioneering the development of canning, mass market pickling, the bouillon cube, and other forms of conservation. In an era in which highly processed, industrially produced, prepackaged foods have come to dominate the diets of a great

many people, to the detriment of their health and that of the environment, and in a way that thoroughly alienates them from both the ultimate sources of their nutrition and the craft by which raw ingredients become food, this early participation in canning and processed foods must necessarily have a sinister cast. But it is unlikely that this constellation of problems could have been foreseen by Escoffier, who simply wanted to make palatable foods available in lean times and make a bit of money.

Escoffier's concern for the unfortunate extended to theory as well. His 1910 *Projet d'assistance mutuelle pour l'extinction du paupérisme* proposed what amounts to a tax-funded social insurance program for the old, infirm, and needy. The plan included a national lottery to fund the construction and operation of rest homes for the elderly and the suggestion that retired resident cooks be recruited to serve in the kitchens. It also included a call for the establishment of a confederated Europe and a cry against the funding of a standing peacetime military, the need for which arose precisely because of the independence of the various European states. These ideas anticipate the modern welfare state and the Eurozone.

Summary

Because of Escoffier's influence, restaurant cooking has become a respected profession, whose successful practitioners enjoy considerable esteem. He revolutionized the way luxury restaurant kitchens were organized and, in turn, the way restaurant dining is conceived. In collaboration with César Ritz, Escoffier brought a new kind of fashion to the world of gastronomy, thereby engendering considerable alteration of the social status it enjoyed and of the society that enjoyed it. Escoffier's writings have had a lasting impact, and in particular, his *Le Guide Culinaire* still serves as the definitive treatment of French restaurant cooking technique around which much professional modern Western cookery is built. He pioneered various methods of food preservation, with lasting impact. Finally,

Escoffier was himself a charitable man publically concerned with the welfare of those less fortunate than his typical client.

Cross-References

- [Aesthetic Value, Art, and Food](#)
- [European Cuisine: Ethical Considerations](#)
- [Food and Class](#)

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Ethical Activism with Consideration of the Routine of Food Culture

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Synonyms

Ethical application of Korean food culture; In activism in food life; Ritualization of healthy food life

Introduction: Ethical Problems in the Present Food System

According to the 2009 World Hunger Map by the World Food Programme, present world food system has very serious problems as follows. More people die of hunger every year than from AIDS, malaria, and tuberculosis combined, and almost one billion people regularly suffer from hunger (www.wfp.org). Malnutrition prevents children from reaching their full developmental and cognitive potential, and one child dies every six seconds from hunger-related causes. On the contrary, according to the World Map of BMI (body mass index) 2011, the overweight (BMI more than 25 %) area covers most countries of the world except Asia and Africa, and especially Kuwait and Egypt are classified as obese countries, their citizens with a mean BMI of 30 %. These numerical values show that the imbalances of food supply due to access and availability and inequality of wealth around the globe are very serious.

Systematic approaches in solving the problems have been tried around the world. For example, industrial forms of farming informed by science improved the mass production of food and mass breeding methods, generally in the Northern Hemisphere, have been supplying abundant meat to consumers. However, even though advanced farming technology, industrialized agriculture, and stockbreeding have contributed to relieving global starvation, they have raised other problems, e.g., the unequal distribution of wealth and contamination or destruction of the environment.

In this entry, ethical activism as an essential and fundamental solution will be discussed. It is an essential problem in need of a fundamental solution and involves changing our eating habits and making food accessibility more relevant to everyone. From the viewpoint of ethics based on the biology of cognition, the causes of the problems should be reduced to every one's doing, and thus, its correction of wrong ways of doing or action is the most important (Maturana and Perksen 2004). It is not easy to point who are the responsible, but in the present world food

system from product to consumption, the most responsible could be the people who live in affluence in any country. People in affluent have a duty to benefit the worst off.

Definitions of Ethical Activism, Food System, and Food Culture

The concept of ethical activism, on which there have few discussions, seems to involve the idea that in order to resolve collective action problems of a political nature, it is rather important to act in a way that produces effective results instead of simply stressing an awareness of the seriousness of the problem and trying to choose valid norms. According to this thinking, even though we have had many discussions about how the ethical norms should be established, the norms will not be justified without results from action and practice. That is, ethical activism emphasizes the fact that practice in company with actual activity verifies and validates an ethical theory. But for this, a radical question from the current cognitive science should be drawn: Is the effect of the activities limited to validation of an ethical theory?

Note, however, that activism in this entry has another basic premise about what constitutes “activities.” The idea of the embodied mind which is free from the Cartesian dualism (Varela et al. 1993) takes the viewpoint that the activities inside our body are the determining factors of all the processes, from feeling and thinking to decision and action (Johnson 2007). According to this, what should be stressed is how to calibrate people’s habit or routine in which numberless activities are from moment to moment linked to each other. A personal habit or a custom of a society is a patterned linkage of the activities. It means that in our approach to the ethical problems related to the food system, how to calibrate our feeling, desire, thinking, decision, action, etc., should be the main issues of our discussions, since it is believed that a new epistemology of food ethics and a new motive of effective practice can be set according to this calibration.

From that viewpoint, it is necessary to give attention to the concept “food system.”

The meaning of a system is so comprehensive that it cannot be explained easily. But in brief, a system not only involves all the elements inside it but gives a direction to them. In a system, every element sets in its good position and harmoniously keeps a mutual cooperation and dependence with all others, and thus, a system as a whole can dynamically take its course in which all its elements are ruled and guided, for example, the system theory developed by L.v. Bertalanffy in which a society or an ecosystem is regarded as a lived system.

According to this understanding, it is possible to call the food system a food culture, because the biggest system in human society is a culture. The food system is one of the representative cultures that exist everywhere and in every time. A present food culture of a nation is actually an outcome of a long tradition of food system, which involves various types of interchanges between human beings and foods from the nature. In other words, the meaning of food system includes not only a whole interaction between human beings and the nature such as agricultural production, distribution, consumption, and waste but also all the things or affairs that can exist or occur vis-à-vis foods. Therefore, it is natural to observe how our activities respond to the current food culture and also to discuss how we can intervene in the current system and direct it toward a more ethically healthy situation, that is, correction of inequity or recovery of surroundings in the world.

Ethical Problems and the Present Food Cultures

A food culture is a sociohistorical product of a long time-tested food system, and thus, a food culture of a nation or a place could be an optimized one for that nation. Generally speaking, the food culture itself, e.g., food system in medieval times or in the slavery in the ancient era, was not a great problem against the environment before modern times or pre-mass consumption time, even though food shortages have still threatened people.

However, at present time, every food culture diminishes its own features in the course of

globalization and many Asian countries have experienced substitution of traditional food cultures for the Westernized ones or the Americanized ones. Rapid urbanization in most regions expedited mass consumption of foods, and the mass consumption also induced mass production through new technologies. Such mass production and mass consumption brought about serious modification not merely in food culture but also the relationship between human beings and the nature. The serious modifications are interlocked with various kinds of problems that are extended from individuals' health problems to environmental contamination or destruction. It must be true that human beings, as eaters or as the subjects of food culture, have to take responsibility for the problems, because intemperate appetite and excessive eating and drinking have brought the serious causes to the problems (Singer 1995).

In this entry, it will be clarified what the detailed essences of the food culture are and a direction for further studies on food ethics will be proposed. Along with this, a discussion about how to develop a model for ethical activism for a better food culture, which proposes to reduce human beings' exploitation against the nature and to recover equality of food consumption in the global society, by applying that model from tradition of food culture will be given.

Three Orders of Food Culture and Embodiment of an Individual/a Society

Food culture means not only the foods (edible things) themselves but human activities related to them. This is because the concept of culture basically involves human activities including looking for foods and cooking them. Those human activities have a basic and general aim, that is, for survival. But that aim and effects of the activities are not limited to survival. They interface with nearly every aspect of human lives and their influences are so wide and deep because nothing can be done without eating. Therefore, food culture is the very beginning of all human affairs and is a prerequisite or essential part in an enormously ecological circulation of all human

affairs. A sound ecology of our society is the basis of our survival and sustainability.

In order to easily advance our inference, it is necessary, by taking an anthropological research view, to classify the details of food culture into three orders as follows. The first is the order of food to food communications. We can observe this as a kind of harmony among various foods which have been developed in a culture or a tradition, and thus, most of a traditional menu would be considered a good model of the order. The second is the order of foods to human beings/human beings to foods communication. In this order, we can observe the influence of food on health, temperature, mind, soul, etc. Note that this is related to our habit of adversely picking out food ingredients, cooking recipe, how to eat, etc. Finally, it is the order of human being to human being's communication with foods as the center. For example, this is related to with whom to eat, how to make social relationships by invitation to a dinner, what/how to talk in mealtime, and so on. Most human affairs do not seem to be free from these orders; rather, these orders have been providing causes to most human affairs.

These three orders are related to each other in a complicated way. Human beings' routine is in fact the limitless circulation of these orders. Therefore, it is natural to specify the routine rules of human living. In this context, a question should be drawn for developing the idea of ethical activism mentioned above. Is this circulation merely daily phenomenon? It may be more seriously influential on human beings. It is true to express the influence on human beings is organization of a unique pattern on their desire, thinking, decision, and behavior. In other words, it is natural to be called as a kind of accumulation effect or a kind of adaptation effect. According to the accumulation or adaptation, a figuration of a unique pattern on the mind and body, more exactly speaking embodied mind, is shaped. The process of the figuration is of course a process of human negotiations with social and natural environment, and thus, the result of the figuration of every person or every society is necessarily different from other's. The figuration is performed

not merely on the individual but also on a community or a nation (Imamura and Imamura 2007).

Whatever food culture may be, it is actually the result of the figuration in a long-term process. All the human affairs cannot be free from the figuration. Carefully observing the contents and direction of the figuration is central. What the contents and direction of figuration on an individual or on a society are will exert a decisive role in future human civilizations too.

In addition, it is necessary to consider how the three orders in one complexity of food culture embodies the individual as a personal and social being, the society as a cultural complexity, and the world as the sustainable assembly. Firstly, it is natural to focus on the effect on the result of action and reaction between food culture and an individual as a personal being. In this case, what draws attention is the way the food culture has embodied the individuals. Personal eating habit or personal division between preferred foods and avoided foods is the results of the embodiment. Secondly, it is also reasonable to focus on the effect of the result of the action and reaction between food culture and the society as a cultural complexity. In this case, that is how the food culture has embodied a society. Furthermore, there must be numberless interactions between human beings and the world. According to these interactions, the world is also changing itself as human beings are changing in various ways to make use of the world and simultaneously to adapt to the world.

These embodiments can be observed in any traditional culture in the world. Here, in order to exemplify the three orders, let me analyze them with examples from Korean typical food culture.

Korean Food Culture as the Figuration by Buddhism and Confucianism

Even though current Korean food culture is said to be very much transformed from a traditional one to Americanized one, most families still keep Korean traditional food customs in their daily lives. Most Korean food restaurants also do not

exclude the traditional food culture. Generally speaking, Korean food culture is a phenotype of a long-lasting context which has been built by various civilizations such as shamanism, Buddhism, Confucianism, and Daoism. Korean food culture can be explained more analytically with the ideas of three orders expressed above. That is, the Korean food culture is the enacted one with entanglement of the three orders through a long historical context. Here, what should be stressed by the concept of context is the history of figuration. This is actually a long-term process of reproduction of Korean food culture. Whatever food culture it may be, it is repeated through routine and the routine is strongly supported by rituals and ritual-like installation that pattern the behaviors of personal and social beings into a very typical system of customs. In Korean history, Confucianism and Buddhism seem to be the main influences/factors of the figuration and the reproductions. Korean history is said to have a long context of about 4,500 years, and Confucianism and Buddhism have their history of more than 2,000 years in the Korean peninsula.

If so, how have Confucianism and Buddhism exerted their influence on the present Korean food culture? Both of them have developed their own metaphysics combined with the polished system of rituals, ceremonies, and etiquettes for proper practices. That is why they have been able to dominate the food lives or food culture as well as daily lives of Korean people for so long time. In the lives of Korean people, there are innumerable things to consider, which can be traced to the two traditions. Here, according to the three orders, a few points which are typical to Korean food culture will be highlighted.

The First Order in Korean Food Culture

What should be observed from the view of the first order as food to food communication is the traditionally organized menu and harmonious relationship among the foods in the menu. This order in every place or every nation is the important basis of the food culture, and the order itself is a mirror of the interactions between human

beings and nature. Korean food culture has constructed its own menu as the others have done in their own orders.

Some representative examples of the first order of Korean food culture are as follows: The first feature of the order is the clear division of main foods from side dishes. The second is fermented foods such as gimchi, soybean paste, and so on. These are established as daily essential foods. The table generally shows vegetable-oriented diet rather than meat diet. Frugality of the table is respected and harmony among foods is also emphasized. The frugality means the restriction of the number of side dishes. The reason why the frugality is emphasized lies firstly in underlying wariness against the deleteriousness or sickness arising from loss of balance between foods and human body.

Maybe one of the Korean typical menus which shows such food to food order is “bibimbap” which is easily chosen on aircrafts affiliated to Korean companies. The “bibimbap” which consists of rice with wild herbs, little piece of cooked meat, and traditional red pepper paste and should be mixed together for eating shows a good example of respecting the frugality and harmony among foods.

The harmony means beneficial combinations for human health and lives and such combinations theoretically supported by Confucian metaphysics. According to Confucianism, every material has its own quality and properties, and the quality and properties can exert influence on the whole or parts of a human body. Confucianism, as a philosophical background, supports the food system with a kind of bio-cosmology; one ultimate principle with yin and yang and five primary substances as the substantial foundation of the ultimate cosmos give the food to food order harmony. Even other food culture of other region or society has its own philosophical background, but it is right to tell it is supported by its traditional religion or philosophy, for example, Indian food menu and Hinduism or Thai menu and Buddhism.

For example, green color of a food material exerts an influence of strengthening the function of the liver and at the same time regulates or

assists to make a human being demonstrate the temperament of benevolence. On the other hand, red color does the similar influence to the heart or blood and relates to the temperament of courteousness. There are more and more cases. But what is important is that the combination or the harmony among the foods directs people’s bodily health and promotes a well-poised mind. In this sense, these combination and harmony among foods naturally have linkages to the second order.

The Second Order of Korean Food Culture

In relation to the second order, the teachings of Confucianism and Buddhism are the primary considerations. The teachings raise a fundamental question. What’s the purpose of eating? Of course, survival and health are the primary purposes of eating, but both teachings suggest a higher purpose, which must be connected to the ultimate purpose of human life. Confucianism teaches about the duty to fulfill one’s lifework and Buddhism provides a path *nirvana* (*nirvana*, an ancient Sanskrit term used in *Indian religions* to describe the profound peace of mind that is acquired with *moksha* (liberation)). Eating is a routine activity through which the lifework of Confucianism or *nirvana* of Buddhism can be achieved. Thus, so many taboo words or religious precepts have been given. This means that if food culture is not sound, then one cannot achieve the ultimate goal.

In this second order, excessive desire or appetite is not good for health or the achievement of the ultimate purpose. As one of the most intense desires inside human body, our appetite should be controlled properly, though, of course, it should not be suppressed to such an extent to be deprived of vitality. There is a similar instruction in the two great thoughts which have led Korean people to develop a typical food culture. The similar instruction is *ahimsa* which means no destruction of life in Buddhism and “selective taking of animal life” from Confucianism. Thus, what Korean people embodied as a main principle of food culture is the minimum consumption of meat

that is necessary to build healthy bodies or to maintain sound lives.

The control over the excessive appetite/desire to eat is not just the control over inside activities but also embodiment of harmonious way of mind-body cultivation. In this order, both Confucianism and Buddhism teach the following: Immoderate drinking alcohol and eating meat are frowned upon, because to eat and drink should not be for pleasure-seeking but for fulfilling lifelong work. Buddhist Five Commandments including drinking of no alcohol and *ahimsa* and the Confucian memorial service practiced at every beginning of mealtime are the ritualized social institutions. Like these, the instructions of the two great religious traditions are not restricted only to the maintenance of health. Rather, it is natural to tell that the two thoughts commonly have set an ultimate purpose for human being's successful life (Maturana and Varela 1980; Varela et al. 1993; Varela 1999). Of course, each definition of the two on the ultimate achievement is not the same as each other, but basic ideas of both are the same. The same idea between them is that only due to a longtime self-cultivation or self-organization, an individual can become an ideal being, like Buddha or Confucius, who is regarded as the representation of ultimate achievement and who had already experienced a stage of an enhanced being on the fundament of the harmony in mind and body. In regard to the second order, what should be emphasized is the fact that their achievement based on their control over the basic desire involving the appetite.

The process of self-cultivation is the process of self-organization, in which the subject embodies the true virtue of self-constraint. Activities of the body along with the embodiment are changing their direction from being pursuing delicious foods and nice drinks to allowing minimum meal ingestion in a degree that makes possible only self-cultivation with healthy body. Additionally to such people's mind, the nature is regarded as the object to give their respect in return for their getting vitality and fitness from the foods produced in the nature (Yoo 2011). That is much different from ordinary person's mind that regards the nature or foods as the target

of attack and acquisition with greed. Therefore, an unexpressed but very necessary and basic principle is that the second order has its extension up to the achievement of the ultimate stage of the self-organization (Yoo 2011).

The Third Order of Korean Food Culture

In the third order, the order of person to person communication is reflected in table manners or the food rituals (not limited to preparation). The two great traditions have established so comprehensive ritual installation in Korean society. These installations correspond to Korean people's routine practices and are embodied by Korean people. What exactly is entailed by embodiment? The answer cannot be simple, but what is definite is that ethics coupled with manners is very tightly obeyed. Until now, the most influential in Korean society are elders first, filial piety, faith between friends, etc. Such ethics together with manners are still influential with table manners. These cultural phenomena show Korean food culture has promoted communal spirit in daily ordinary lives as well as in official ceremony.

The effects of such table manners and rituals prepared with foods have not been limited within the communications of mealtime. In fact, the mealtime communications are the important parts of the whole life of a person in a day. In other words, the mealtime communications firstly with family and secondly with other people in society are bound to be repeated around 87,600 times under the assumption that a person can live until the age of 80. From birth to death, there could be no such routinely repeated activities. But I think such routinely repeated habits perform a more important function to an individual's self-organization than occasionally repeated thing does or a rare occurrence can do. If so, what is the function of the routinely repeated thing?

In reality, this question is also applicable not only to the third order but to the first and second ones. Accordingly, this could be a more comprehensive question to the effect or function of a food culture to human life.

Ethical Activism on the Basis of Cognitive Science

What is, with the concept of the ethical activism, originally intended in this entry lies on this point. The patterned activities like eating and living habits are very decisive to our self-organization and so we must reflect our daily food life and must look for the way how to regulate the intemperate appetite and how to reorient the habits toward getting a peaceful mind-body situation and harmonious living with the environment.

Existing ethical arguments have been continued with attention to how to make the ability to choose good norms and to apply them to action. Their way has an old-fashioned premise that the thinking and decision with the reason must be the absolute basis of morally good conduct. But connectionism, one of current cognitive scientific paradigms about human cognition, proposed an entirely different idea about human thinking and action. According to it, there is nothing like reason inside human being. Instead, there exist only endlessly repeated connections and ensembles of activities from the whole elements of body from the viscera up to the brain. The connections and ensembles are not perceived but various kinds of phenomena can be perceived as the results of the connections and ensembles such as feeling, desire, emotion, thinking, calculation, comparison, decision, and action. These phenomena are traditionally called activities of human beings themselves, too. But these activities are merely the results from the connections and ensembles of other kind of activities that are proceeding at a deeper level as brain or viscera. Our activities can be classified at least into two categories: implicit knowledge and explicit one. This classification is very important to understand the different levels of our activities and it is closely related to the categories of know-how and know-what (Varela 1999). In addition, the former is regarded to keep more sensitive response system to affordance of outer things. According to the latest researches, more parts of our daily activities are organized with the implicit knowledge than with the explicit one. The implicit knowledge is not innate but embodied inside

and giving a direction to one's habitual behaviors. Actually, habitual behaviors or know-how as implicit knowledge is of great importance in putting oneself unconsciously into a certain moral mood or emotional mood which is the actual base of one's moral decision with using one's reason (Varela 1999).

Many parts of our ethical problems are related to the behaviors which are repeated automatically in routine life. With the current food system, many examples of implicit knowledge and affordance can be observed. For instance, think of the case of drinking habit of a man. To this man, alcohol gives off more affordance than to a normal person. This means that the owner of drinking habit has a stronger directivity to alcohol than the normal person. Then, is this directivity innate or not? It is not innate but must be embodied by itself during more or less long time. And in the process of the embodiment, the connections and ensembles of inside activities from the level of brain, viscera, etc., by a gradual process, have been patterning the sensitive response system to alcohol. This change inside the man means that he has got a system of implicit knowledge to sensitively react to the alcohol, and as a result of the change, the system could manipulate the man inversely. Actually, the person cannot easily throw away the drinking habit. In this case, the directivity to alcohol is a kind of implicit knowledge which is not well designed and at the same time cannot be realized by the person itself, because the directivity operates in the subconsciousness level and the person realizes only the feeling of alcohol drink as the result of the directivity operation. If so, does the person have no method to recover non-drinking habit except being treated with medication in a hospital? Of course, the answer is different along with cases, but it cannot be denied that there could be an autotherapy. The autotherapy is not a special one but a very common or usual thing, that is, the correction of the habit. Even if another person gives a strict warning against the expected harmful situation and reminds the norms about abstention from drink, the habit can rarely stop. In this context, a critical question can be drawn. If one knows what to do,

then can the person do it? In other words, is to know what to do and to know how to do automatically joined? On the contrary, the correction of habit is an entrance to access the level of implicit knowledge and a way to interfere into the patterns of the connections and ensembles and give a newly corrected direction.

Therefore, it is the tacit knowledge that should be focused in the discussion about the ethical activism. Food culture ranges over both the levels of explicit knowledge and implicit one. Explicit knowledge involves how to cook, how to make out menu, etc., which are made by a person's considering. Implicit one can be observed in the old habits and unchangeable patterns, which rather rules a person's consciousness and intention. Most problems arise repeatedly from this implicit knowledge. Subconscious direction and habitual routine actions belong to the tacit knowledge, which comes from the embodiment of the ritual-like patterns in daily life but rather make stronger influence on human behavior and whole life than the explicit one.

The present food culture of the whole mankind is actually mixed with various contexts, and there are some countries which have no marked tradition of food culture as Michael Pollan points out (Pollan 2007). In many cases of daily life, traditional instructions and rituals are neglected. The ultimate purpose of eating changes to pleasure/enjoyment from the lifelong work and thus not only mass consumption and mass waste but also mental depravation is making the deep-rooted problems more unsolvable.

Concluding Remarks

In fact, such food culture clustered with the three orders is easily looked in any region or society, and every regional food culture has developed its own food menus, diet treatment, and table manners. Even if there are many differences among food menus, every regional food culture has, keeping the three orders inside supported by a traditional religion or philosophy, developed its own customs which include how to maintain one's health, how to make harmonious human

relationship, how to save foods, and how to make the earth and the nature sustainable. If not the case of a desperately poor country or countries suffering from starvation, most countries have developed and kept such customs until recent time even though among them still remains a kind of food material acquisition by a way of animal abuse, for example, foie gras in France.

Even most developed or developing countries have experienced, in the process of industrialization, important changes of their daily way of eating living from traditional food custom to a modernized one which regards economy of time and high-calorie, low-cost food as important, but such aspect began to be criticized as one of the main factors of injuring personal health or destroying the humanity of a society, and thus, nowadays, anti-fast-food or anti-junk food campaigns, for example, slow food movement or LOHAS (Lifestyle of Health and Sustainability), are in response of many people and many regions. However, if an important thing should be added to, that is to recover or rebuild a healthful human relationship by breaking bread together with family or neighbors or friends enjoying glib talks. It means what is important is human relationship shaped around the table manner as well as food menu.

Therefore, as a conclusion, the most basic and necessary practice for a healthy food system is to rebuild the food culture by refreshing the eating habits or food customs. In addition, it is necessary to refer to the good tradition which has developed the polished system of rituals, ceremonies, and etiquettes combined with a complete metaphysics in every region or country. By doing so, figuration and reproduction of a good food culture will be feasible. Depending on this reflection, ethical activism will acquire its verity by setting up right habits and doing so in daily lives.

Summary

This entry has three targets from the viewpoint of philosophy and cognitive science. The first is to elucidate the food system with three orders of

food culture. The second is to make clear the essence of the ethical activist approach to the present problems related to food culture. The third is to propose an actual solution of ethical activism. This entry is designed depending on the studies of Asian traditional philosophy, especially Confucianism and Buddhism and at the same time depending on the connectionism of Francisco J. Varela and others' cognitive science and the study on ritual practice and ritual installation by both of Imamura. Korean traditional food culture is analyzed and the main points of the tradition will be discussed as preferable methods for dealing with the present food system and food ethics. The main remark is to rebuild our routine referring to the main point of traditional food culture.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Asian Cuisine: Ethical Considerations](#)
- ▶ [Buddhism, Cooking, and Eating](#)
- ▶ [Buddhist Perspectives on Food and Agricultural Ethics](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Food Rituals](#)
- ▶ [Food Waste and Consumer Ethics](#)
- ▶ [Food-Body Relationship](#)
- ▶ [Gustatory Pleasure and Food](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Waste and Food](#)
- ▶ [You Are What You Eat](#)

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Ethical Assessment of Dieting, Weight Loss, and Weight Cycling

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Synonyms

Antiobesity medication; Bariatric surgery; Slimming; Slimming diets; Weight reduction

Introduction

Overweight and obesity, a moderate to severe accumulation of excessive fat in the body, result from an imbalance between calorie intake and expenditure, leading to an increased risk of developing heart disease, diabetes, and cancer. Emerging on an epidemic scale in the second half of the twentieth century, the problem of overweight and obesity with an increasing global prevalence resulted in 0.5 billion obese and 1.4 billion overweight adults in 2008 (WHO 2013) due to sedentary lifestyle and the changing foodstuffs and food trends and eating habits.

What has happened to our food? In the developed regions of the world, with the United States as the most prominent, it has become abundant, thanks to the improvements in agricultural

production, and it has become diversified; higher in sugar, salt, and fat; and thus more tasteful due to the improvements in food processing industry. Thus, both the availability and the desirability of the food have increased, along with its energy density; today there is a plethora of high-energy-dense food on the market. A well-known example of the effects of these developments have been observed with the emergence of fast-food chains: the rate of obesity among adults in the United Kingdom and among children in Japan doubled in a decade in which the number of fast-food restaurants in the United Kingdom and the fast-food sales in Japan also doubled (Schlosser 2001), consistent with the positive association detected between fast-food consumption frequency and weight gain in the long term (Pereira et al. 2005). And what about our meals? The breakfast has either been skipped or shrunk to a bowl of cornflakes; the lunch has been split into hourly snacks in number with each being almost equal to a meal in calories; and the dinners in front of the TV set in the living room function as the popcorn in the movie theater. The people who have gained excess weight at various rates, the sufferers of this combination of unhealthy food and unhealthy eating habits, use a variety of means to lose it, which is mostly the following of a weight-loss diet.

And, as a second and absolutely non-negligible group, there are the dieters who would actually – at least medically – do well enough without dieting at all. In contrast to the growing number of overweight people, the second half of the twentieth century also saw the emergence of the thin ideal, which for decades has promoted the thin female body through accordingly thin media figures including models, actresses, performers, etc. (Gard and Wright 2005). The thin ideal with varying impact on females from the teenager to the elderly, with a normal weight or who are slightly overweight, has caused body dissatisfaction and a subsequent need for weight reduction, which again is mostly tried to be achieved by following a weight-loss diet. The duration, frequency, and severity of such dieting depend on the extent to which the ideal is internalized.

Therefore, those who are overweight and those who think that they are overweight constitute together the customers of the multibillion dollar weight-loss industry today, which offers them so many products from multifarious weight-loss diets to equally various teas and supplements, pills, and preparations – advertised almost always with one or more of the adjectives “quick, effective, organic, natural, and herbal.”

Dieting, Weight Loss, and Weight Cycling (Yo-Yo Dieting)

And these products are often introduced by irrelevant people. Endocrinologists, the medical professionals working in the field of endocrinology, metabolism, and nutrition, have given their patients advices on correct nutrition. In addition to these physicians, however, such advices are frequently given today by physicians from irrelevant fields or even by nonphysicians on the media, who call themselves, and are presented as, nutritionists, dietitians, or assertively enough, “experts.” Therefore the first of these titles, nutritionist, will be used in this entry, interchangeably with the words introducer or marketer when appropriate, to mention those who have a product or an assertion to declare about nutrition, weight loss, dieting, and the like.

Weight-Loss (Slimming) Diets

Nutritionists appearing on the media are well aware of the basic golden principles for a healthy life and weight, which include a balanced diet of all food groups, a healthy amount of water intake, a regular exercising, and a sufficient sleep; though these are now regarded by some as “clichés already known by everyone.” Both today and in the past when people were less likely to be overloaded with information on any issue through the media not so widespread yet, conventional medicine has been successful in health promotion with the practice of these simple principles. However, it is also noticeable to nutritionists and to any observer that the number of the people who want to lose weight and lead a healthy life has increased.

An increase can also be observed in the interest in innovation and what is novel. Instead of being content with clichés, most people today want to lose weight without feeling hungry or changing their lifestyles and eating habits, keep fit without getting tired due to exercising, and feel vigorous without wasting time in sleep. There is a demand in society for new diets, new methods, and new suggestions accordingly developed. Nutritionists who are aware of this trend and confident of their education, knowledge, and thus their ability to benefit the society with their original opinions generally give it a try. They know that the above mentioned well-established practices will continue to yield successful results when applied to; however, they also know that suggesting through the media what is unheard of will quickly provide them with the attention of those seeking new easy means to lose weight. In addition to financial and emotional advantages, an increasingly popular name means an opportunity to stand out among other nutritionists (or competitors, in terms of the weight-loss market) as a trendsetter and to reach more people (or customers, in terms of moneymaking by receiving them in an office – but not patients since most nutritionists are not physicians). Such attempts for attention become the generator of the information pollution encountered every day on the TV shows or the Internet, in which many “miraculous” methods allegedly capable of providing a specific amount of weight loss are introduced, including herbal teas and recipes, recently developed diets, and drugs, allegedly again, harmless and of natural content. And the original opinions vary enormously, to give a few well-known examples: some argue for having six (or eight or even ten) light meals a day to keep fit, while some insist that it had better be limited to three main meals. Some highlight that olive oil is the healthiest cooking oil while others find butter innocent denying its association with cholesterol. Vegetarianism has long had its advocates, who are now challenged more loudly by supporters of different diets based on animal products. The continuously increasing diet options lead to a great discussion and an even greater confusion over the issue. In the last few decades, probably no other domain of

medicine than overweight has been so frequently intruded with so meddlesome claiming.

Appearing on a TV show or publishing a book or launching a website with technically no chance to examine or even see the recipient of the information, there would be no great difference between an oncologist suggesting a specific type of chemotherapy with specific dosage to all those with cancer and a nutritionist suggesting a specific type of weight-loss diet with specific amounts of nutrients (such as “matchbox-sized piece of cheese and plain coffee in the morning”) to all those with overweight. However, when the popular weight-loss diets are considered, it is seen that a single diet is vigorously claimed to help everybody with weight reduction, with no restriction specified on the use of the diet with respect to the age, gender, and personal background of its prospective followers, including their diabetes status and history of any metabolic disorder. Whether the type of the diet be low carbohydrate, low fat, or low calorie and whether its developer be a physician or a nonphysician, how can one unhesitantly set forth a one-day, one-week, or one-month menu which is indubitably not equally appropriate for millions of people? More specifically, for example, how safe is it to recommend a weight-loss diet which encourages the *ad libitum* consumption of animal fat and meat relying on a restriction of carbohydrate intake to those with a high risk or history of coronary disease or hypertension?

At this point, one might argue that a single pharmaceutical, too, is introduced to the market for the utilization of millions of people with an associated disease. However, with proper medical practice and regulation, there will be nuances. First, it is, or is not, prescribed to patients according to the initiative of a doctor as a result of an examination and evolution process, not provided or presented to them by the producer itself. Second, when it comes to weight loss, an ethical physician would not resort to a pharmaceutical unless less invasively modifying the eating pattern or physical activity level of the patient is not possible or effective, whereas most weight-loss diet marketers make use of every advertising gimmick to lure the magic

cure seekers. Third, pharmaceuticals are introduced with a set of directions and cautions concerning their use and users, and like other conventional medical treatments, they are produced after years of clinical research and observation – what about the advices and products of most nutritionists and diet developers, what is their scientific basis if they do not rely only on some personal observations and interpretations? Every year, thousands of new weight-loss products from diets to drugs and books are introduced globally, but not an equal number of studies are carried out on the issue in the same period of time, which, at least numerically, means that a considerable portion of such newly emerged products is either a modified version of the earlier products with some scientific basis or just made-up in terms of scientific method.

A 2004 study by the US Federal Trade Commission indicated that, of the investigated advertisements of weight-loss products such as nonprescription drugs, dietary supplements, diet patches, creams, wraps, and devices, 49% in 2001 and 15% in 2004 contained at least one claim which were found clearly false and scientifically infeasible (FTC 2004). Advertising techniques included asserting a recommendation or endorsement from a medical entity and featuring figures dressed in a lab coat. The seeming improvement between 2001 and 2004 might be accounted for the encouragement of the media not to run advertisements with such claims being effective (however, unlike the United States, many countries still lack similar regulations to screen out deceptive advertising on the media). And, it should be noted that fabricating and marketing a false weight-loss diet is much easier and more low cost than it is for a false tangible weight-loss product. Because, to reach its willing target, a weight-loss diet only needs be read on a book, newspaper, or magazine or heard from the TV or the radio, whereas the availability of false products such as drugs, supplements, patches, creams, wraps, and devices is partly restricted by factors associated with their distribution and material production. In comparison to related products and services, a fabricated weight-loss diet is much more likely to encounter and get taken in by.

There have been studies indicating that the diets followed by millions of people and reported by its followers to provide benefit might actually be non-recommendable or clinically non-superior to other weight-loss diets in the long term (Astrup et al. 2004) or that there is no sufficient evidence to recommend for or against their use (Bravata et al. 2003), and it has also been reported that the same diets might be dangerously inappropriate for some (Chen et al. 2006). However, a frequent argument of the followers of the popular weight-loss diets is “everybody follows it,” which is mostly ensued by “nothing bad happens.” In fact, no immediate “disastrous” results should be expected when a weight-loss diet that indeed causes the insufficient intake of a nutrient, for example, is followed, which will be often the case for even a “crash diet” characterized by severe nutritional deprivation. Because human body is a mechanism perfectly programmed to survive with an ability to synthesize many organic compounds and convert them into each other, unless it is exposed to prolonged starvation. Thus, the negative health effects of a specific type of diet might not be necessarily immediate and easy to observe or measure. Furthermore, not causing a disaster in practice – to be exact, deaths or irreversible negative health effects – does not constitute enough justification in principle for the existence of a weight-loss diet. In medicine, when a treatment is introduced for the utilization of a group of people, its introducer is obligated to submit scientific evidence indicating its potential to provide benefit; otherwise, it would not conform to the fundamental principle of beneficence of the medical ethics.

The above-discussed fact that many of those who show up in the field of weight loss are not health-care professionals might explain their unawareness of such principles, but does not make it acceptable. It is arguable that commercial products cannot be equated with medical procedures and cannot be expected to conform to medical principles; however, a weight-loss diet, just like a weight-loss drug or supplement, is a direct intervention to the state of health of an individual, which is exactly the case with medical procedures, meaning that it can be – or should

be – expected to similarly fulfill some criteria and to have been produced in conformity with a set of principles set to maintain the well-being of individuals. Though often stated by the marketers of the popular weight-loss diets, neither “my diet has never been reported to do anyone damage” nor “I guarantee a weight loss up to 20 pounds with the formulas in my book” is a medically valid or even meaningful statement. An expected utility for the majority does not mean proven utility or safety, as noted. Furthermore, reported efficacy does not necessarily mean true efficacy. Testimonials cannot be presented or treated as clinical evidence. When to introduce a product directly associated with health, one should be able to reveal a reference with a statement close to “this clinically tested diet has shown to provide a weight loss up to 20 pounds in a period of 3 months, compared to the control group.” However, this nearly seems to be a utopian expectation, given the current situation of the weight-loss industry.

On the other hand, success in weight reduction depends not only on the removal of the excess weight from the body but also on keeping it off. Many people who achieved to lose pounds through a low-calorie diet regain an equal or greater amount of weight in time. This generally results from a later failure to adhere to the dietary or lifestyle changes adopted in the weight-loss period. It is also partly attributable to an inability to develop self-monitoring skills and self-control over eating behaviors, equipments about which the weight-loss diets on the market provides no advice. Finally, the long-term success rate of weight-loss maintenance varies among studies, from reviews concluding that the majority of the dieters experience weight regain (Mann et al. 2007) to those indicating a greater percentage of successful maintainers (Wing and Phelan 2005).

However, some people experience a more distinct fluctuation in their weight, repetitively losing and regaining some of it in a relatively short period of time, a condition called as “weight cycling” or “yo-yo dieting.” Weight cycling is characterized by a repetitive failure to maintain the initial weight loss that is intentionally obtained during each cycle; however, it has no

uniform definition, which complicates the assessment of the related studies to draw clear conclusions with respect to its effects on health. Although weight cycling has been suggested to adversely affect the immune system and to result in a lower resting metabolic rate (Hooper et al. 2010), being thought to complicate the future attempts at weight loss, it has also been reported that a history of weight cycling does not impede the future efforts to lose weight, accounting the less favorable metabolic profile of weight cyclers for differences in body composition (Mason et al. 2013). However, aside from its possible physiological effects on the metabolic rate, its probable psychological effects such as disappointment and frustration might make it more difficult for an individual to start and manage another challenge to lose the regained weight each time.

Analyses have indicated that an individualized diet with an energy deficit of 500–600 kcal is one of the best options in dietary management of weight, and it has been stated that a greater energy deficit might trigger an urge to eat (Haslam and James 2005). A hormonal contribution to this urge is also possible, being shown that diet-induced weight loss is accompanied by a perturbation in hormonal homeostasis with an increasing level of ghrelin, which stimulates appetite (Sumithran et al. 2011). Indeed, a greater desire to eat is disgruntledly reported by most people on a weight-loss diet, which leads some to uncontrolled overeating following an unpleasant period of dieting and eventually weight regain. And the adversities become intensified and more frequent as an intervention becomes more radical. Taken all together, it is reasonable to suggest that an unhealthy diet causing a drastic deficit of energy intake, in order to promise a greater weight loss in less time, might pave the way to becoming a weight cyclist, in addition to many negative health effects. And that kind of diets are a glut on the weight-loss market.

Weight-Loss (Antiobesity) Drugs

It therefore appears to have a potential of harm to health when the mind of the weight-loss diet marketers is infected with the intention of

popularity and financial gain. And what happens when the weight-loss pharmaceuticals, argued for a few paragraphs before, are produced improperly; that is, when they are marketed with their effects not being clinically well studied and well observed enough?

It is noticeable that a back-and-forth pattern that has streamed through decades is associated with their use. Many such drugs have been introduced to, and soon afterward withdrawn from, the market: In the early 1930s, highly toxic 2,4-dinitrophenol was introduced, and in 1938 it was withdrawn from the market due to many side effects such as cataracts, renal failure, and hyperthermia. Between the 1940s and the 1960s, amphetamine use prevailed with millions of tablets including those intended for weight loss. The 1960s saw the emergence of the thin ideal and the parallelly accelerated introduction of pharmaceuticals for weight loss. Phentermine was approved in 1959 and fenfluramine in 1973; 18 million prescriptions had been written for the two until the 1997 withdrawal of fenfluramine due to side effects such as heart valvular damage. Dexfenfluramine was short-lived being approved in 1996 and withdrawn in 1997 due to its association with heart valvular abnormalities. Similarly, sibutramine was approved in 1997 and withdrawn in 2010, due again to serious cardiovascular side effects. Orlistat approved in 1999 has managed to survive to date despite its reported potential to cause severe liver injury. This is an extremely brief history on the US weight-loss drug market only (Ertin and Ozaltay 2011), other countries have their own stories with related drugs, which would again include side effects, withdrawals, and negatively affected users.

The undesired results with these drugs from the 1930s to the 1990s cannot be deemed as historical empirical faults with weight-loss medication. They cannot be ethically deemed simply as empirical because their intentional introduction for the sake of moneymaking, despite their poorly studied side effects and mechanism of action, has cost lives, and they cannot be deemed as historical because they keep killing, as apparent from the news about deaths due to the use of either the now-banned drugs or nonregulated

supplements, such as those from China. And this is because people who medically need to, or externally imposed to, be thinner seek effortless solutions, instead of attempting a more demanding fight against the underlying conditions (Swierstra and Keulartz 2011).

Weight-loss medication appears to have always provided modest efficacy versus considerable risks. Given the principle of non-maleficence, a physician is ethically obligated to ask this simple question before prescribing such a drug: is it worth that? Is a modest result also obtainable by other means such as behavioral modification worth risking a set of known and unknown side effects in the short and long term? And for the nonprescription drugs, supplements, and all other similar products that comprise a large portion of the weight-loss market, individuals should be able to conceive of asking themselves the same question, which seems to be possible through creation of a general awareness.

Weight-Loss (Bariatric) Surgery

There have also been developed surgical procedures to treat obesity, introduced and then modified or abandoned, such as jejunoileal bypass. However, unlike the case with the weight-loss diets and drugs introduced and promoted by non-health-care professionals, the surgical treatment of obesity has remained under the control and within the practice of medical authorities, due to – or thanks to – the complexity of the procedures, and it has been considered as a last resort by both the physicians and the patients, as it ought to be. People should reserve a little of their wariness of scalpels for pills.

Summary

Weight-loss dieters fall into two categories: those suffering from perceived overweight and those suffering from actual overweight. Determination of the personal priorities with or without psychological support might be more convenient and effective for the first group, such as achieving an expected level of thinness versus maintaining

a state of health. As for the latter, it is a fact that obesity is a serious health condition with its implications on health and is difficult to cure and cope with. Modification of the diet to reduce or control the caloric intake would be helpful for weight loss or management. However, such modification would vary by the patient-specific factors and can thus be brought following a detailed examination by a physician and only a physician from the relevant branch, not a popular weight-loss guru on a TV show who is actually a cardiologist, for example. This is not because these people are never capable to make a sound suggestion on the issue, but because their suggestions need confirmation by relevant authorities.

A considerable percent of people with a complaint of, or complications due to, being overweight expect great success in weight reduction without great effort. This leads them to seek some sort of magic methods to provide weight loss and hence fuels the growth of the related industry. Every alternative, when it is marketed convincingly enough, seems to the audience to be worth to be given a try. But instead, more of an approach with rational skepticism should be employed. Individuals from both categories who seek help for weight loss and management should be knowledgeable with the identity, competency, and affiliation of those to whom they resort. Prior to using a weight-loss service or product, including weight-loss diets, they should seek an approval from trusted authorities and clinical evidence for its safety and efficacy, if any.

A non-individualized weight-loss diet developed without taking into consideration the age, gender, genetics, medical history, and personal and initial conditions of a patient is a threat to health. On an individual scale, consulting with a physician prior to using a weight-loss product could be preventive against any possible harm. On a mass scale, government regulations on the media both to prevent its overload with false advertising and to use it to raise the public awareness would work.

It has been suggested many times, as is mentioned here, that significant success in weight loss and management is obtainable by determination in simple lifestyle changes including dietary

modification, such as elimination of high-energy-dense food with low nutritional value, and introduction of regular physical activity, at any level from attendance at a gym to a 15-min walk. The issue of dieting, including the practice of a diet intended for weight loss, must not be subject to underestimation or be left to the direction of nonmedical entities. Because, despite the amazing achievements in many fields of medicine, a healthy diet is still one of the most powerful weapons of medicine to prevent and alleviate most ailments, as has been for millennia.

Cross-References

- [Ethics of Dietitians](#)
- [Gender and Dieting](#)
- [Obesity and Consumer Choice](#)

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Ethical Matrix and Agriculture

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Synonyms

Decision-support; Ethical tools; Practical ethics;
Principlism; Public participation

Introduction

The critical examination of complex ethical problems in food production has traditionally received little attention within the agriculture and

agricultural biotechnology sectors. The lack of formal ethical assessment stems from a persistent view that increased food availability is an unequivocal moral good in light of the potential three billion additional people expected to be alive by 2050 (Hourdequin et al. 2012). Agricultural biotechnologies such as genetically modified organisms and intensive farming practices involving new chemical fertilizer and pesticide products, animal rearing, and milking techniques have often been portrayed as morally benign practices because of the projected welfare gains to global civil society from abundant food production. By contrast, however, academic agricultural and environmental ethicists have highlighted a growing concern with the ethical issues embedded within new technologies and farming practices, problems which resist simple resolution because of the multiple ethical principles at stake, and the myriad stakeholder interests that must be negotiated within civil society.

For example, an ethically justified agricultural practice may emphasize the protection of ecosystems, animal welfare, or increase of low-cost food to vulnerable communities. Though each of these priorities has a basis in established theory, often policies and strategies to achieve these goals are mutually exclusive and no single concern obviously overrides all others. Disagreement will also emerge over the status of different “concerned interests” in the sector. For example, within some ethical traditions, animals, ecosystems, and even the land itself can be said to have rights based upon the intrinsic moral value of these systems, independent of human use. In other traditions, nonhuman life is construed as a resource to be valued in relation to human consumption; thus incompatibilities emerge between competing ethical perspectives established in different normative ethical theory traditions and between different interested parties within the agricultural sector.

Such problems are compounded by continual technological change which produces new and previously unforeseen ethical issues, which in the agriculture sector have notably arisen in relation to novel gene technologies used to tailor biological organisms. The development of

genetically engineered organisms for food production has raised concerns in public debate not only over biosafety, industry accountability, trust in institutional governance, and consumer choice in relation to food-labeling systems but also over the status of living organisms and humans' capacity to alter the fabric of nature (Thompson 2007; Melin 2004; Ridder 2007). These issues have caused a degree of *moral outrage* in countries such as the United Kingdom, stimulating the significant public controversy and the formation of community-based organizations and action groups campaigning against global agricultural biotech firms. These political actions have prompted the governments of numerous European nations to engage in formal practices of participatory technology assessment (PTA) aimed at evaluating risks, costs, benefits, and multiple stakeholder values to aid science policy and legislation. Notable examples include the United Kingdom's "GM Nation?" public debate of 2002, Germany's Diskurs Grüne Gentechnik (discourse on green biotechnology) in 2001, and the BioTIK initiative – an expert ethics committee and the citizen-focused consensus conference approach of the former Danish Board of Technology (Hansen 2010). Together these PTA processes are aimed at providing civil society input into and oversight of controversial technology development practices and, through the involvement of various stakeholder actors, a degree of deliberative democratic control of technological regimes.

This entry examines a particular approach to PTA emerging in the agricultural biotechnology sector, termed the *Ethical Matrix*, developed by bioethicist Benjamin Mepham (1999). The Ethical Matrix (hereafter EM) aims to bring together a range of ethical principles and explore the implications of the application of each principle to a range of "interested parties" (sometimes referred to as "stakeholder groups"). The following sections of the entry explore:

1. The background to the Ethical Matrix as a technology assessment tool
2. The principles and stakeholders applied in the matrix and how they are chosen
3. How it can be applied as a decision-support tool

Background to the Ethical Matrix as a Technology Assessment Tool

Embedded within the assessment of technological impacts in the agriculture sector is a concern with systematic evaluation of ethical issues; and yet the stakeholders involved in these processes, be they scientists, agriculturalists or "lay" citizens, frequently lack the specific training and expertise to do so. A concern is therefore raised that simply "getting people round the table" to talk about multiple and conflicting values and myriad ethical principles is insufficient to justify particular practices or policy choices, because such deliberation lacks clarity, philosophical grounding, and an appropriate analytical structure. This lack of clarity in evaluating ethical issues is, in essence, a competence gap within PTA. Thus, practitioners and theorists in applied ethics have sought to expand and develop a range of "ethical tools" designed to aid different participants in ethical evaluation.

Ethical Tools

The concept of an ethical tool implies a type of philosophical device that provides a decision-support framework or methodology for structuring and facilitating group deliberation on the ethical issues arising from a technology, policy, or practice (Forsberg 2007). An ethical tool must delineate the terms of the debate; facilitate ethical deliberation among a range of stakeholder actors who possess relevant technical, scientific, or policy expertise (but who are not necessarily trained ethicists or philosophers); and provide mechanisms to reach specific conclusions or policy recommendations to aid policy development, legislative oversight, or technology implementation practice.

The Philosophical Underpinnings of the Ethical Matrix

The Ethical Matrix is a tool to structure discussion and facilitates reflection upon ethical issues in relation to new technologies, policies, or courses of action. Schroeder and Palmer (2003)

place the Ethical Matrix within what is termed a *Rawlsian* tradition of metaethics, whereby the emphasis is upon the *procedures* of ethical decision-making. John Rawls (1951) published an outline of a decision procedure for ethics, arguing that reasonable principles are required in order to determine which courses of action can be justified. Such principles, Rawls argued, must be consistent with the considered judgments of any impartial and competent moral judge (who is capable of understanding the basic premises and thinking logically about the consequences of courses of action); and so such principles must adhere to a “commonsense rule” of being recognizable and uncontroversial to a rational and impartial individual who is not formally trained in philosophy. Mepham’s Ethical Matrix follows in this Rawlsian tradition, in the sense that it provides a model for people who are not philosophers to base their analysis of ethics upon familiar principles and commonsense rules.

A Principlist Approach

The Ethical Matrix is composed of two interrelated elements. The first is the establishment and application of a range of *prima facie* ethical principles that are commonly understood as relevant to the case in hand, and the second is a list of agents that have “interests” in the outcome of the case. In PTA, interested parties are usually referred to as “stakeholders,” though the Ethical Matrix broadens this definition to include nonhuman as well as human individuals whose interests might be affected. These two elements are then put into a matrix in order to outline and assess the interaction between them – stakeholders along the y-axis and principles across the x-axis – thus emphasizing the inherent compromise in ethical analysis between multiple and competing interests and ethical requirements (Mepham 1999).

The multiplicity of principles and interested parties makes the Ethical Matrix a fundamentally pluralist and principlist approach to ethical evaluation. It is pluralist in the sense that its appeal to

a range of *prima facie* ethical principles contrasts with the various mono-theoretical approaches that have emerged in disciplines such as environmental ethics (such as those espousing an intrinsic valuation of nature). This pluralism shares common ground with philosophical pragmatism in applied ethics, built upon the recognition that different types of moral principles can be brought to bear on different problems and that these principles must not only be relevant to examining the interests and actions and outcomes of/for different “stakeholders” or interested parties but also amenable to practical use and application by users. It is a principlist model in the sense that ethical justification is derived not from the application of specific theories but from a selection of principles as per the Rawlsian tradition. The use of principles is based upon the notion that they are commonly understood by a broad range of actors within society and thus have a broad degree of support from both ethical theories and within the cultural beliefs of the participants using the matrix. Principles therefore replace normative ethical theory frameworks so that the language and terminology of formal academic philosophy can be eschewed in favor of terms that are easily understood and hence can be used by a range of diverse actors.

The supposed strength of a principlist approach lies in the allowance of a stronger case based on one principle to outweigh a weaker case based on another in particular circumstances. This presents an alternative to monistic normative ethical theory approaches that tend to assert a single principle (or set of related principles) over others. A metaethical question then arises about the choice of principles to populate the matrix and how they are used in practice. Mepham (2005) asserts that the principles used in the matrix must:

- Be based in established ethical theory to give it authenticity
- Be sufficiently comprehensive to capture the main ethical concerns
- Employ user-friendly language as far as possible

In the first iterations of the matrix, the principlism of medical ethicists Beauchamp and

Ethical Matrix and Agriculture, Table 1 An example Ethical Matrix for genetically modified food crops

Principle				
Interested party/ stakeholder				
	Biotechnology firms	Autonomy	Justice	Well-being
		Intellectual property protection allowing innovation in the biotechnology sector	Encouraging low-cost solutions to crop farming, stimulating economic development for agrarian farmers	Improving the resilience of GM crops, increasing overall food production
	Farmers	Avoiding restrictions on patented crops Avoiding pressure/coercion from multinational agricultural biotechnology firms	Fair bargaining power to regulate seed prices	Livelihood protection from crop failure due to insects and viruses
	Consumers	Transparent food labeling encouraging consumer choice on GMO consumption and access to information on GMO imports	Opportunities to participate in decision-making (like GM Nation?). Preserved rights to protest against GMOs	Government regulation of GMOs and biotech R&D. Monitoring and ameliorating potential health and environmental risks
	The environment	Integrity of “nature” – intrinsic valuing and protection of ecosystems from potential cross-pollination with GMOs	Proxy representation of environmental interests in agricultural policy by nongovernmental organizations	Maintaining biodiversity Protecting ecosystems from environmental degradation and resources depletion

Childress was directly imported (Beauchamp and Childress 2001):

- Autonomy – respecting the decision-making capacities of autonomous persons
- Non-maleficence – avoiding the causation of harm
- Beneficence – acting in the best interests of others
- Justice – distributing benefits, risks, and costs fairly

These four principles have become well established in the medical profession for guiding professional practice and decision-making in patient care. Mepham condensed this list further, substituting the two principles of beneficence and non-maleficence for a single principle of well-being – for simplification and because of the interrelationship between preventing harm and enhancing quality of life. Autonomy and justice were kept, although in later revisions this justice principle was relabeled as “fairness” in reference to the Rawlsian concept of “justice as fairness.” Table 1 shows an example Ethical Matrix that applies these principles – comparing

the different positions adopted in relation to biotechnology firms, farmers, consumers, and environment. This example matrix uses the three original principles, as Mepham did when applied to the agriculture sector in early case studies of dairy farming practice (Mepham 1996). Mepham initially stated that because these principles were well tested within medical ethics (and established in commonsense morality due to their representation of dominant normative ethical theories), if one were to change the principles used, then this would require significant philosophical justification. However, as the tool was gradually taken up by different theorists and practitioners to different case studies, a more contextualist approach to principle selection has emerged. Mepham has thus since amended the original assertion, with more recent iterations allowing for the substitution of different ethical principles when appropriate for different cases (Mepham 2005).

The process of choosing specific principles, and hence how the ethical discussion is framed, remains unresolved, however. In early iterations

of the matrix, principles and interested parties were defined in a top-down manner, in the sense that they were decided upon before deliberation started by the teacher/convener/facilitator that sets up the deliberative process. In later revisions and applications, the choice of principles and interested parties has itself been a participatory process, in the sense that the deliberating participants decide the terms (Irvin and Stansbury 2004; Kaiser and Forsberg 2001), and so principle and interested party criteria are populated in a more bottom-up fashion. However, some of these parties represented within the matrix may themselves be deliberating actors, whereas others are not (or in the case of the environment or future generations, cannot). Thus, there is a potential imbalance, as certain interests are actually represented (by deliberating stakeholder actors) and others must be represented by proxy. Thus, there is a need for tools to fairly justify the choice of principles and interested parties represented in the matrix and to correct for power imbalances that may occur between them, in order to remove any bias that may emerge in policy outcomes where some deliberating stakeholders seek to skew outcomes towards their specific interests. Cotton (2009a, 2014) suggests that one means to alleviate this problem would be to take Rawls's concept of a decision procedure for ethics further. He suggests that one should adopt the concept of "reflective equilibrium" to structure deliberation using the matrix. Reflective equilibrium allows deliberators to choose among the principles to be included through the use of an iterative process of ethical reflection. Reflective equilibrium involves moving between a range of available principles and comparing and applying them to considered judgments, moral intuitions, and practical circumstance and then recontextualizing and choosing the principles for the matrix in light of such intuitions and judgments (Rawls 1951). This is a contextualist method of choosing principles, which grounds principle selection based upon the specificities of the case, rather than the top-down selection by an expert practitioner, and hence allows the user to more substantively justify why particular principles are used within the matrix.

Principlism and Ethical Theory

By adopting a principlist approach, Mepham argues that the principles in the matrix do not constitute an ethical theory as such nor does the matrix directly use ethical theories. The principles are in fact a set of moral premises intended to clarify and assist deliberation (Mepham 1999, 2005). However, in practice there are direct similarities between principles and specific normative ethical theories, and so the principles could potentially be used as shorthand representations of broader theoretical frameworks. If so, the three principles can be understood as being roughly in line with three dominant philosophical perspectives in normative ethics: deontology (emphasizing personal moral duty), utilitarianism (emphasizing the maximization of aggregate welfare), and justice as fairness (emphasizing procedural equity in decision-making processes).

Though theories play a role in the matrix, the matrix is nonetheless intended as a tool for mapping out and discussing the issues underpinning a decision, rather than determining an ethical decision based upon a particular set of rules or adherence to a particular ethical doctrine. Mepham asserts that the matrix seeks to remove philosophical bias in influencing the decision outcome, allowing individuals to come to their own conclusions based upon philosophical reflection and rational argumentation, and is therefore ethically neutral in its intent (Mepham 2000). It is therefore situated within the procedural or discourse ethics domain of Habermas (1991), whereby the moral deliberations by rational individuals confer ethical value upon the resulting decision.

Using the Ethical Matrix in Practice

Within the matrix itself, the content of the empty cells can be populated in two ways. Firstly, it is possible for the individuals using the matrix to think through the consequences of the policy or decision under consideration for different stakeholders, and then write in those consequences. This format can prove useful when using the

Ethical Matrix to teach agricultural and food ethics. By structuring an individual's personal reflections on the issue under consideration, the matrix requires individuals to think like each of the actors within the matrix's list of stakeholders. This requires moral empathy and moral imagination – encouraging the users to put themselves into the shoes of the affected party and consider the conditions under which each of the ethical principles is upheld or violated. Each cell of the matrix therefore shows the interaction between stakeholder and principle, usually either in terms of behaviors and practices or outcomes and consequences depending upon the elements under consideration. For example, by imagining the position of an agricultural biotech firm, the user then attributes moral agency to the firm and will likely focus upon the ethical implications of different behaviors and practices that the firm is imagined to employ. By contrast, “the environment” could be construed as a relatively passive bearer of impacts (such as when ecological systems are harmed by pollution) or conversely as a set of physical conditions which, when altered, could in turn benefit or harm specific human actors (as is the case when examining the impacts of climate change on vulnerable communities). Thus, the imaginative process of moral reflection on the interests of “the environment” could focus upon the consequences of other agents' behaviors in relation to its protection or upon the secondary consequences of technological interventions in natural systems.

Though useful for individual reflection, the Ethical Matrix has also proved popular, and arguably more useful, when used by groups of stakeholders that represent a range of competing interests. Thus, it becomes a tool less for structuring personal reflection and more for facilitating group discussion as part of a technology assessment. In both the individual model and the group model, the matrix must draw upon both factual and normative information. However, as Jensen et al. (2011) assert, some facts may be relatively straightforward and go unchallenged, whereas others may stimulate substantial disagreement among those deliberating using the matrix. Structuring discussions by populating the cells provides

a framework through which evidence, both factual and normative, can be challenged – emphasizing the controversial and contingent nature of ethical issues in the management of risk in new technological developments. Once completed, the cells of the matrix represent the outcome of a deliberative process in which synergistic or antagonistic relationships between principle and stakeholder emerge.

Decision-Making with the Ethical Matrix

The matrix has been used in a number of case studies, both to evaluate its efficacy as a decision-support tool and to develop substantive discussion of ethical issues in a range of applied ethics fields. The first multi-stakeholder applications emerged within the discipline of agriculture and food ethics. Practical cases evaluated the ethical issues related to dairy farming issues such as assisted milking technologies (Millar 2000), cattle transportation (Whiting 2004), and evaluation of novel or functional foods (Mephram 1999), alongside other environmental ethics-related concerns such as forestry management, (Gamborg 2002) bioremediation of radiologically contaminated sites (Oughton et al. 2003; Howard et al. 2002), and long-term management of radioactive wastes (Cotton 2009b). One particularly relevant agriculture-related case study concerns the assessment of GMOs in fisheries management (Kaiser et al. 2007). This latter study by Kaiser et al. (2007) was significant in that it evaluated the Ethical Matrix as a participatory tool used by both expert and lay users in evaluating the ethical issues surrounding the management of GM salmon. They observed that the Ethical Matrix proved valuable in structuring ethical discussions for both expert and lay participants, allowing all deliberating actors to contribute to the ethical debate. In particular they noted that a lay panel of participants which were initially skeptical of biotechnology ended up with a more positive evaluation of the potential use of GM salmon by the end of the process, and so the Ethical Matrix encouraged participants to distance themselves from preconceived ideas

and judge on the basis of information and principles that are designed to serve the common good.

In each of the aforementioned case studies, the role of the matrix in decision-making takes different forms. Though the population of the cells through deliberative dialogue provides a useful framework for discussion, this alone is insufficient in making a decisive policy. The stages highlighted above allow the gathering of ethical facts, serving to map out and stimulate deliberation. Additional stages are required if this is to be taken forward in formulating policy options and alternatives for agriculturalists and biotechnologists. One means to do this is to use the matrix to identify a series of “ethical impacts” and weigh them appropriately (Mepham 1999). This can be done by dividing the completed cells into two groups, showing the positive and negative ethical impacts – white boxes representing a respect for the principle with respect to that stakeholder and black boxes representing an infringement. This shows the areas where political action is needed either to redress injustices or uphold current values. A more detailed analysis would use a ranking of respect/infringement across a weighting scale, using the Likert-type numbering system, e.g., –2 strongly infringe to +2 strongly respect with 0 neutral (Mepham and Tomkins 2003). This ranking can be done in a participatory manner as Gamborg (2002) suggests, by using the matrix in expert-led consultation process in a panel session, similar in some respects to a citizen’s jury. An expert panel on the topic under consideration is put together and composed of scientists, biotechnologists, agricultural specialists, policy makers, lawyers, etc. Each presents their “client’s cases,” outlining the pros and cons for each group identified in the matrix. This is followed by participatory ranking in a manner similar to nominal group technique (see, e.g., Andrews 2013) – each panel member and member of the lay public audience holds a copy of the matrix. After the presentation of cases and ensuing discussion, each person indicates in each cell of the matrix, whether they feel that the ethical principle is likely to be upheld, violated, or unaffected by the proposal, using the Likert scale to rank their perspective. By collating these responses, it is

possible to obtain a verdict on the ethical perspectives of the group on the issues identified and hence, i.e., a measurement of the prevailing ethical mood among the participants (Mepham et al. 1997). Such a model is democratically pluralistic, in the sense that it incorporates lay public responses, voting and weighting of issues, and hence can prove useful for participatory technology assessment.

Summary

The Ethical Matrix can fill a competence gap where citizen actors and other stakeholders need guidance in structuring deliberation on ethical issues around a technology, policy, or practice and in making firm decisions on courses of action, within the context of a participatory-deliberative decision-making process. As Oughton et al. (2004) assert, the matrix can be used to help identify the relevant information required for decision-making (i.e., the facts, values, and stakeholders involved), helping to avoid bias towards specific moral values and addressing conflicts between them in a systematic way. However, even with all relevant information and systematic representation of different values, they recognized that moral judgment must be exercised while also questioning who this moral judge should be. So the Ethical Matrix, like other emergent ethical tools, provides a useful means to structure deliberation on the ethical issues inherent in new technologies and food policies; however, such tools cannot substitute rational deliberation and reasonable moral action, and care must be taken when choosing the right “moral judges” to take part.

Cross-References

- [Agricultural Ethics](#)
- [Biotechnology and Food Policy, Governance](#)
- [Ethics in Food and Agricultural Sciences](#)
- [Expertise in Agriculture: Scientific and Ethical Issues](#)
- [Food Ethics and Policies](#)
- [Industrial Food Animal Production Ethics](#)

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Ethics and Food Taste

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Synonyms

Egoism; Flavor; Food choices; Food preferences; Gluttony; Gustatory preferences; Reasons; Taste; Weakness of will

Introduction

When people choose what to eat, one of the main reasons is the taste of the food. Many people in the world do not have much choice in their diets given their poverty, but in the Western world, the average consumer enjoys an overwhelming variety of affordable foods. The focus of this entry is the role of taste in the food choices of those who do have a choice. With more choices comes more responsibility; deciding what to eat has a moral dimension as well since food choices have an enormous impact on the agent's health, the environment, and the well-being of other humans and animals.

The core puzzle posed by taste is its involvement in the most common and ubiquitous cases of what look like weakness of will. Many people find certain foods morally bad because of their presumed or genuinely harmful consequences. For example, one might intend to become a vegetarian if one cares for animals and wants them not to suffer. However, despite of the intention, the person may fail to do so because of her high preferences for the taste of meat. Other examples include the wish to eat healthier or less fattening foods, but somehow the intention gets trumped because one is unable to resist the good taste of those foods. Tastes thus seem to have much more motivating force than often acknowledged. The ethical dimension of the issue is evident when one considers the failure of large masses of people to eat foods that they

know to be better for themselves, the environment, the animals, and other people.

The entry is structured as follows. Section "[What Is Taste?](#)" clarifies the notion of "taste." Section "[Tastes as Reasons](#)" discusses the relation of tastes and reasons. Section "[The Puzzle of Unethical Food Choices](#)" introduces the puzzle of unethical food choices. Sections "[Bad Food Choices as a Consequence of Weakness of the Will](#)" and "[Bad Food as the Subjectively Rational Choice](#)" discuss two alternative answers to the puzzle. Section "[Are People Egoists?](#)" considers whether ethical egoism might explain the unethical food choices. Section "[Ethical Gourmandism](#)" summarizes Korsmeyer's ethical gourmandism which holds that the taste of food depends on its moral properties. Section "[Is There a Duty to Train One's Taste?](#)" asks whether there might be a moral duty to train oneself to not prefer the bad foods.

What Is Taste?

By a food's "taste," one normally means much more than what is actually tasted by the taste buds. What is meant corresponds rather to the notion of "flavor," a sensation caused by a complex interplay of various sensory modalities, including taste and olfaction, among others (Auvray and Spence 2008). This entry follows the ordinary usage by taking "taste" to mean mostly flavor. Sometimes other aspects are included in "taste"; for example, the texture and mouthfeel of a food are an important part of how pleasurable it is to eat, so evaluations of "taste" (e.g., "corn chips are delicious") can be made on the grounds of flavor, texture, color, and possibly other features.

It is well known that foods do not taste the same to everyone (see, e.g., Prescott (2012)) which is why one also needs to talk about how something tastes *to someone*. This holds both for descriptive properties (e.g., salty, sweet) and evaluative properties (delicious, tasty, disgusting). In what follows, it is taken for granted that people's tastes differ so by saying that something tastes salty, bad, delicious, and so on; what is meant is that it tastes that way to the person

under consideration. Finally, evaluations of foods do not depend only on taste but also on what is being evaluated; for example, sourness may be a positive quality in lemons but not in corn syrup (Korsmeyer 2012).

Tastes as Reasons

People act on reasons and may have reasons for actions even if they are not motivated to act on those reasons. This suggests one of the main classifications of reasons into *internal* and *external* reasons (also known as *subjective* and *objective* reasons). Internal reasons have motivational force and are hence connected to the desires and preferences of a person; they are also *motivating* reasons. External reasons in contrast are reasons that exist for a person, say a reason not to kill or drink poison, without the person necessarily having any motivation to act on that reason or even know of its existence. Many philosophers take *moral* reasons to be independent of anyone's desires or other motivations (for a defense, see (Parfit 2011)). However, once a person is aware of the moral reason or has that moral reason, then it is an internal and motivating reason (for a clear exposition and criticism of this common view, see (Schroeder 2008)).

What kind of reasons can be provided by tastes? Suppose that a person is hungry and wants to eat (or thirsty and wants to drink: everything that is said here applies to drinks as well). Luckily they happen to have a certain good-tasting food in their fridge and they are aware of that fact. Ignoring all possible other reasons for or against eating that food, does its good taste provide a reason to eat it? Common sense clearly says "yes"; eating tasty food causes pleasure and everyone wants pleasure. The pleasure gained from eating tasty food offers a motivating reason to eat it as well as a *prudential* reason that recommends eating it.

Can tastes provide moral reasons? The answer depends on whether the ethical theory under consideration holds that pleasure is good and that there is a duty to pursue the good. Egoism would most clearly promote the idea that pleasure

from taste gives a moral reason. Consequentialist theories often hold that pleasure is good but how much value there is in gustatory pleasure depends on the particular theory. It is not easy to see how a deontological theory could attribute much value to tastes except by citing duties towards oneself of which experiencing pleasures might be one. In any case, except for egoism, most ethical theories seem to hold that gustatory pleasure offers at best a very weak moral reason.

The Puzzle of Unethical Food Choices

If gustatory pleasures do not provide weighty moral reasons, one faces the following puzzle. Many people find certain foods bad; for example, they might consider the food unhealthy or its production too harmful for the environment, other people, or animals. These people have an internal and motivating reason not to eat such foods. Moreover, suppose that not eating those foods is not merely something that would be morally good but optional for such a person; it is mandatory from the point of view of morality given their beliefs about the food in question. However, many of such agents do *not* change their eating habits because they enjoy the food's taste so much. Hence the puzzle: how can people be knowledgeably and systematically acting against their best moral judgments?

As was mentioned, some philosophers like Parfit take moral reasons to be independent of anyone's beliefs or desires. Such views hold that whether the puzzle of unethical food choices is a moral problem depends on whether the foods in question actually are morally bad. The puzzle thus has two important ethical dimensions: first, it shows a potential conflict in people's moral beliefs and their actions which is a problem of moral agency. Second, *if* there are morally bad foods which knowledgeable agents nevertheless fail to avoid, the problem becomes one of political philosophy and raises questions about public policies towards the bad foods.

Are there genuinely morally bad foods? Leaving aside the question of where the competing moral frameworks might differ, most views would agree that foods are bad if their production causes serious environmental damage, much

suffering to sentient beings or health problems to their consumers. It is worth emphasizing that most foods are not intrinsically bad: the foods whose production currently has bad consequences could often be produced in a perfectly ethical way, and “unhealthy foods” are typically unhealthy only if consumed in large quantities or as a part of an unbalanced diet. Whether a food is unethical depends essentially on how it was produced, on the current state of the world in other respects, and importantly, on the quantities consumed.

Regarding the current production methods, the most plausible candidate for being bad food is factory-farmed meat. Industrial farm animal production, *aka* factory farming, has been shown to have extremely negative consequences to the local and global environment, to the people living in the vicinity of the farms, to the welfare of the animals, and to humans generally due to the development of microorganisms that are resistant to antibiotics which is a consequence of routinely giving animals antibiotics to prevent them from developing illnesses (Pew Commission on Industrial Farm Animal Production 2008). Pluhar argues that any existing moral theory would morally condemn factory farming (Pluhar 2010).

Even if not factory farmed, producing meat is generally more harmful than growing vegetables. The livestock industry contributes around 20 % of all the greenhouse emissions in the world (McMichael et al. 2007). Even if the animals lived an otherwise good life, they suffer in transportation and when they are slaughtered. Philosophers have defended vegetarianism on the basis of various ethical frameworks, for example, on utilitarian grounds (Singer 1990), or on the basis of consideration of the rights of animals (Regan 1983). However, even if one accepts that there is nothing wrong in principle with killing animals for food, the current amounts of meat that is consumed are a huge burden for the environment (Cafaro et al. 2006). There is also a correlation between health problems and meat consumption (see, e.g., Crowe et al. 2013; Rohrmann et al. 2013). Hence, large quantities of meat can be considered bad food.

Finally, some foods have little nutritional value but provide a lot of energy. Obesity and

its consequences are a major risk for individuals as well as for societies in terms of health-care expenses. Increasing sugar intake has been shown to increase the risk of type 2 diabetes irrespective of obesity (Basu et al. 2013). Foods that are high in sugar are thus bad foods when consumed in large quantities. Also, given the sedentary lifestyle of most Westerners, foods with high calorie contents may easily lead to obesity. Hence, the typical snack foods (chocolate, cookies, candies, potato chips) and sugary sodas are bad foods to people who do not burn the calories obtained.

The above examples show that unethical food choices are not merely a problem of moral agency but also a genuine moral problem: there are foods with undeniably bad consequences given the way they are currently produced and the amounts consumed. In what follows, the focus is on the puzzle from the point of view of moral agency, and hence, what matters is not the actual badness of a food but what the agent *believes* to be bad; for simplicity, let us call the latter “bad food.” There are broadly two lines of explanation to the puzzle which will be discussed next.

Bad Food Choices as a Consequence of Weakness of the Will

The first and the most common real-world explanation relies on the idea of weakness of the will. The view explains the puzzle by saying that people often fail to act according to their best moral reasons since they are not enough strong-willed to do what they think is the best. What happens is something like the following: the person judges that there is most reason not to eat bad food. But when she is grocery shopping, she feels a powerfully motivating desire to eat something really tasty. And before the reflective mind (or the will) has time to intervene, the shopping cart is full of bad foods. The call of gustatory pleasures can thus trump the judgments of what is best to do all things considered. The agent ends up acting irrationally, against her best reasons. The inability of the will to resist the pleasures of tastes is probably one of the best and most common cases in favor of there being weakness of will.

This view raises several difficult questions. An especially hard question is how the weak-willed

action came about. The views which hold that one can only act on reasons one is aware of will have to say that there was no reason for the action, only a cause. Alternatively one needs to distinguish between “competing minds” which have competing reasons.

The competing minds assumption is by no means as straightforward as it seems. For one, it seems reasonable to suppose that each person has just one self. So if the will is the self, who or what is the part of the self whose urges to eat must be resisted? As intuitively explanatory as the idea seems of the self being occasionally hijacked by one’s “primitive” wants, selves seem to be partly constituted by one’s deep desires, fears, and other such features. As long as one is not talking about eating disorders or genuine food addictions (if there are any), the weakness of will view may construe the realm of reasons and the self too narrowly.

Bad Food as the Subjectively Rational Choice

Another line of explanation holds that the apparently conflicted agent simply has stronger reasons for not giving up bad food than they have in favor of change. This view denies that people act irrationally when they do not follow their avowed best reasons and hold instead that they are actually acting according to their best reasons. The puzzle is solved when one recognizes that people may be mistaken about what their best reasons are, and in fact, the best guide to the reasons they have is to see which reasons best explain their actions. A similar line of thought has been defended by Socrates (Plato 1997) and Hare (1952).

The link between the agent’s best reasons and rationality was discussed above in connection to the weakness of will view which held that in not acting for her best reasons, the agent is being irrational. But that can mean two things: that the agent is being *subjectively* irrational or *objectively* irrational. The weakness of will view need not be committed to the agent being objectively irrational; as Arpaly has argued, sometimes an agent is in fact doing the most objectively rational thing even if she did not do what she thought was the best (Arpaly 2000). In contrast, subjective

rationality has to do with the coherence of the agent’s reasons and actions rather than with the objective goodness or validity of those reasons. The view currently under discussion holds that a person cannot be *subjectively irrational* since they always act according to the best reason, whether they know it or not. Since reasons are what guides actions, it cannot happen that one did not act for one’s strongest reasons. Call the view under consideration the *subjective rationality* view.

Suppose this view is correct. That means that if an agent fails to give up bad food for its taste, then tastes are actually extremely strong reasons to her. Given the setup of the puzzle, the agent *believes* to have the best reasons to give up bad food. But since reasons motivate, if she does not act as her alleged best reasons tell her to, then she is mistaken either about the reasons she has or about the strength of her reasons. To her the best reason is in fact gustatory pleasure which to her weighs heavier than the reasons she has for taking the food to be morally bad.

The subjective rationality view has some interesting consequences. First, since it allows that people may not know their reasons, it does not need a sharp distinction between reasons and causes. Second, it offers a simpler and more optimistic view of persons: we have just one self and there is no weakness of will. If one acts in ways that appear unwilling to the person (and she is not under drugs or otherwise manipulated), then she simply needs to take a good introspective look and try to find her true reasons for why she acted the way she did. The view thus holds that one’s own reasons are not transparent to one and therefore one may be mistaken about them.

Are People Egoists?

If the subjective rationality view is on the right track and the food choices of the unethical agents reveal their true reasons, that suggests that their gustatory pleasure is a stronger reason to them than, for example, their health or the well-being of animals or the environment. Probably the only moral position consistent with such an attitude is ethical egoism which holds that one ought to do what is in one’s own best interest. So given the

failure of many people to change their eating habits despite of their trying, it is worth asking if the morally puzzling agents in fact hold the moral views they claim to hold, or if they just pretend to, or are under an illusion regarding their moral beliefs.

Pleasure is a powerful motivation, and delicious food causes great pleasure to many. So giving up pleasurable bad foods might be seen as too demanding a sacrifice since with the exception of damage to health, many bad foods are more harmful to the nature and animals than to the eater. People may thus believe in the badness of some foods but still value their own pleasures more. Such excessive valuing of the pleasures of food is traditionally known as gluttony. Tefler argues that gluttony is commonly behind unethical food choices (Tefler 1996, ch. 6).

Ethical Gourmandism

The previous discussion supposed that there are two separate dimensions which influence food choices: the moral properties of the food and the food's taste. However, Korsmeyer argues that at least in the case of a person who is cultivated and discerning regarding foods, a food's taste is affected by the food's moral properties. The view which she labels *ethical gourmandism* stands in opposition to the view in aesthetics which holds that aesthetic and moral properties of works of art are independent, and hence, a work of art may, for example, have high aesthetic value even if it is morally questionable.

Korsmeyer's argument depends essentially on the view that the evaluative properties of a food depend on identifying the food. There is empirical support for that, for example, from a study which showed how people's evaluations of a cold salmon dish depended on whether it was presented as mousse or as ice cream (Yeomans et al. 2008). There are plenty of ordinary cases too which support the view, for example, when someone is happily eating a pie until they find out that the filling contains snails which the eater finds disgusting.

However, such cases are also apparent counter-examples; since the person was happily eating the

pie, was not she simply wrong in thinking it is disgusting? Korsmeyer avoids the problem by distinguishing evaluations of tastes from evaluations of tastes of foods (Korsmeyer 2012, p. 92). Thus, she could say that even if the ignorant pie eater finds its taste nice, it does not follow that she finds the taste of snail pie nice because to her snails are disgusting. If that is right, then food tastes have an essentially cognitive component to them.

The next step in her argument is that being a cultivated and discerning eater (a gourmand) requires knowing the origin and production methods of the foods since these are essential to discerning the tastes. She gives an example of a Scotch whisky whose flavor is described by an expert as follows: "The spirit has a fine, golden color, got from long years in cask in a dark, stone-walled, slate-roofed, earth-floored warehouse above the river Spey. The nose is vinous, floral and smoky, like gardenias in a cigar box" (Hills 2000, p. 171; cited in Korsmeyer 2012, p. 93). Korsmeyer argues that to truly appreciate and discern the color and the flavors requires knowing the conditions in which the Scotch was produced since, as is illustrated by the description, the methods leave traces in the taste.

Given the cognitive component of evaluations of the tastes of foods and the requirement that a gourmand knows the means of production of foods, Korsmeyer argues that moral evaluations also influence tastes. Hence, if one condemns the force feeding of ducks for making *foie gras*, one should not enjoy the taste of it. However, such cases do occur; they are instances of the puzzle of unethical food choices. Korsmeyer holds that the agents of such cases are being inconsistent. Her suggestion seems to be that if one undergoes a careful scrutiny of one's moral beliefs and taste preferences, one cannot go on enjoying unethical foods.

Is There a Duty to Train One's Taste?

Unethical food choices are a problem of moral agency. But the problem becomes one of public policy if there are genuinely bad foods which knowledgeable agents nevertheless fail to avoid.

For the sake of the argument, suppose that there are bad foods. Can people be blamed for their knowledgeably unethical choices? If tastes can cause even a moral person to act against what they take as their best reasons, maybe they just do not have the choice to act otherwise. So they cannot fight against the call of gustatory pleasures, but what is more, they cannot choose which foods cause them gustatory pleasures. As unfortunate as it is, most people prefer the tastes of bad foods.

The assumption here is that one can be morally blamed or praised for an action only if one chose the action. We have seen that the unethical food choices may be a consequence not of one's genuine choosing, but of either weakness of will or of unacknowledged reasons. Those people thus cannot be blamed for their food choices, goes the argument.

Now, maybe people cannot resist delicious food, but they can influence what they find delicious. So even if one cannot be blamed for originally having morally bad tastes, tastes can be trained. Despite of the genetic basis of our tastes, the biggest factor in our preferences is habituation (Logue 2004). As Korsmeyer argues, we cannot blame the nature for our food choices since our tastes are a result of cultivation (Korsmeyer 2012).

If one is unable to resist bad foods, one may have excellent reasons to train one's taste so as to prefer better foods. By far there has been a contrast between two kinds of agents: those who think that the best reasons support giving up bad food and the explicit ethical egoists who think that they have a moral right if not even a duty to themselves to eat bad but tasty foods. The former agent certainly has a duty to train their tastes; not only will it ensure that they will make the moral food choices, but they are also causing themselves more pleasure by learning to prefer good foods.

Surprisingly, the egoist as well may have a duty to train their taste. This can be illustrated by comparing two egoists: one who trained their taste to prefer good foods and one who did not. During the taste training period, the egoist's gustatory pleasure diminished but once she is adapted to the new tastes she gets equally much

pleasure out of food as before. In addition, she is healthier, probably weighs less, and hence looks better which matters to most people, and she might also be better off due to external consequences. And even if we suppose that good food can never be quite as delicious as bad food – for which there is no evidence – the slight loss in gustatory pleasure is certainly gained in pleasures coming from better health, and of all the pleasures, one gains while possibly living longer.

Summary

Nowadays an informed food choice must take into account the ethical considerations regarding the consequences of the food and its production. Many people are unable to resist bad foods due to their taste even when they know it would be morally better not to eat them. This puzzle of unethical food choices raises questions on the role of tastes as reasons. Are they not reasons but merely causes which trump the best reasons of the weak-willed agent? Or are they in fact reasons not recognized by the agent? If tastes are the strongest reasons, that suggests that people might in fact be ethical egoists or gluttons who do not give much weight to the negative consequences of bad foods compared to the pleasure of tastes. The entry also asked whether people have a duty to train their tastes to prefer better foods and suggested that even an egoist has reasons to do so.

Cross-References

- ▶ [Cooking, Food Consumption, and Globalization: Ethical Considerations](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Informed Food Choice](#)
- ▶ [Vegetarianism](#)

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Ethics in Food and Agricultural Sciences

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Synonyms

Discourse ethics; Ethical and public engagement; Expert knowledge; Food and culture; Harms and benefits; Morality; Professional ethics and food; Public trust; Risk and uncertainty; The commons; Vulnerability and food

Introduction

Global agriculture and food production face a series of challenges over the next few decades. These challenges include growing food in a way that minimizes the environmental footprint of both plant and animal agriculture; producing renewable bioenergy to address the anthropogenic impacts of climate change (FAO 2011); producing safe, animal welfare-friendly, and nutritious food in sustainable and water usage responsible ways (FAO 2012b; Foresight 2011); containing invasive species and harmful pathogens and pests; balancing market conditions with rights and needs of people; and ensuring global food security and the viability of food and bioenergy production for whom it is a livelihood (see FAO 2009a, b, 2012b; Godfray et al. 2010). These challenges are intimately connected and require integration and synthesis of data collection, responsive public policy making, progressive regulations and management strategies, scientific and technological expertise, and layperson ways of knowing. Meeting these challenges will also require political will (in some cases), forward facing national policies around food and fuel, and information sharing and collaboration between global partners.

While the role of science, in particular agricultural and foods sciences (and their respective

scientists), in meeting these challenges is critical, science by itself cannot meet the challenges mentioned here, since many of the concerns involve both values and ethical visions of how this generation of human beings intend to live and the kind of world they want to shape. These are normative questions that fall within the purview of *ethics*.

Ethics is concerned with values, virtues, principles, and customary habits and practices (Thompson 1998). It is the study of good and bad, right and wrong, and of the criteria that can help in both the evaluation and determination of right from wrong conduct and modes of living well. Ethical frameworks like the Ethical Matrix can be used to facilitate systematic dialogue and deliberation in order to solve difficult moral and social issues in more inclusive and participatory ways. Ethical views are tied to moral beliefs and values. Values are ideas that are action guiding, serve as the basis for justifying actions and meaningful lives, and promote responsibility toward others. Values provide guidance to live well with others and for other private and public dimensions of human flourishing. Ethics functions to promote trust and sustain good relationships, which can also be instantiated through stewardship of nonhuman animals, the environment, and Earth's resources.

In meeting the abovementioned challenges, the agricultural science community (a multidisciplinary field that intersects with different domains – e.g., food sciences or natural science disciplines that enable food production and also politics, sociology, ethics, economics, and disciplines that produce nonedible commodities such as biofuels) must not only engage in research, innovation, and technologies and commodities development in agriculture. The agricultural science community must also engage with the ethical and value systems of the many publics who are impacted by global agriculture and production of food. Engagement with private industry seems critical too, and appreciating the business values and motives of productionism and market cum shareholder-driven priorities is part and parcel of the nexus between ethics, science, and profit seeking that dominates contemporary global agriculture. Where private industry

is unable or unwilling to meet the public or common good dimension of agriculture, agricultural and food scientists working in the public domain will likely have to work with policy makers to engender public support for continued agricultural research, innovation, and product development in ways that distribute the benefits and burdens equitably among various stakeholders and which promote human dignity and flourishing across all regions of the world. *Ethical trust* between the agricultural and food scientific communities (which may have different impacts and influences in different parts of the world) and the world's public is central in order to address the global challenges mentioned above and the ones yet to be anticipated.

Why Is Trust an Important Ethical Issue for Agricultural and Food Sciences?

Trust, in the service of promoting and sustaining good relationships, is an important ethical issue for those working in the agricultural and food sciences given the types and magnitude of risks that the public may be exposed to every day from agricultural and food products and their attendant science and technologies. When it comes to something as intimate as food or nonedible agricultural products such as bioenergy that impact daily living, food and agricultural scientists are beholden to the public's "... attitude of optimism that the good will and competence of [the members of the agricultural and food sciences community] will extend to cover the domain of [their] interaction with [them, the scientists], together with the expectation that the trusted [scientists] will be directly and favorably moved by the thought that [the public] are counting on [them, the scientists]" (adapted from Jones 1996, p. 4; see also Limoges 1993). The reliance on or confidence in the good will of the trusted persons (such as experts, like scientists) is a three-place relation of "entrusting." The public trusts scientists with information, that they also have unique expertise regarding investigatory methods or processes, and with the possession of technologies that may impact their well-being, where the

former grants scientists “discretion” to determine how best to steward information and/or resources (adapted from Baier 1986, p. 237). In the case here, this discretion leaves the nonexpert-dependent member of the public, morally, epistemologically, and physically vulnerable to the harm of being made worse through manipulation, negligence, and/or betrayal.

While not uniform throughout the world, efforts to select and improve crops and animals for high productivity through intensive agricultural practices since the 1960s have been adopted as the central driver for feeding the world and behind what is often thought of as “progress” vis-à-vis the Green Revolution. In intensification, research and development and advances in agronomy, animal sciences, and food sciences have been dominated by “productionism” and steered by utilitarian and market-driven values (Thompson 2010). However, the utilitarian-guided productionism has been met with steady criticism for environmental damage and pollution, loss of biodiversity, and impacts on rural communities (Thompson 1995; FAO 2012b). Arguably, some form of intensification is needed to feed and provide energy for a growing world population which is expected to grow to be over nine billion by 2050. The emergence of novel areas of specialization and the complexities of modern technologies (e.g., waste treatment technologies, genomics, modern molecular biotechnology, genetic engineering, cyber and telecommunications) keep the public from knowing their food and other agricultural products more intimately, and thus, they must rely on the competence and good will of experts. Members of the public will extend trust, distrust, or remain agnostic depending on how they perceive scientists discharging their professional responsibilities. They may be highly distrustful if innovation comes at the expense of human rights and is not environmentally sound or sustainable or if the harms and benefits are not distributed equitably among the relevant stakeholders and if commercial products are not produced or traded in concert with scrupulous business practices.

Credibility is the moral capital of scientists and is earned or enhanced when scientists

communicate openly with the public about their considered evaluations of the empirical evidence (Rollin 1996) or when they frame the relevant evidence in ways that help the public rationally to recognize the evidence for what it really is and how it may or may not impact their lives and futures. In an era of hyperepistemic dependency, ethical trust is an invaluable currency and can seem to be in short supply in many discourses involving *risk*. The hierarchical inequilibrium that exists between “expert” scientists and the public is characterized by vulnerability, since the latter lacks the appropriate expertise, ability, and education (Burgess 2004; Thompson 1986). These characteristics engender a power differential between the expert and members of the public. Thus, inculcating virtuous professional conduct and establishing codes of ethical practice are important ingredients in building and maintaining a trustworthy relationship between the lay public and the scientific community.

Ethical Trust and Risk

Increasingly, professionals in agricultural and food sciences who provide expertise to public policy making or whose research may have a large impact on society are asked to take into account the inextricable connection between what they do (be they bench or applied researchers) and the impact of what they do on broader social concerns and aspirations. Social acceptability of scientific processes as it relates to agriculture and its products revolves around whether regulations, policies, practices, and standards are grounded morally and validated scientifically (Lackey 2007; Doremus and Tarlock 2005). The presence of poor scientific methods in data collection, appropriateness of the study methods employed to gather data, and research design features like representativeness, biases, repeatability, uncertainties, and whether there is adequate transparency and lucidity associated with how the results of a particular study are derived, are questions agricultural scientists must confront about the efficacy and integrity of their science in the service of the public good.

Professionals in the agricultural and food sciences must be cognizant that (i) the public (citizens and consumers) are concerned about who communicates what and when to them about edible and nonedible products from agricultural sources, (ii) that public policy makers are concerned about reliability of the relayed science in the name of protecting the public's interest, (iii) industry agents are often concerned about the science that helps them promote their bottom lines, and (iv) producers rely on scientists to help them carve out an existence in this era of intensive food and nonfood production from agricultural sources. In a climate of uncertainty and risk, the underlying interests and values associated with the different groups create ethical tensions that need to be considered in the policy-making process in the event that agricultural sciences claims to be or is employed as an epistemological authority or arbiter (Thompson 1986).

Thus, *ethical trust* is highly valued despite the availability of information through the Internet and the relative ease (in most cases) of accessing it and/or of finding "an expert." The quality, reliability, and credibility of our sources of information and scientific content and decisions about what scientific studies should be funded, how scientific information should be communicated to the public, how data is stored and disseminated, and how science should be used to inform public policy are ascientific concerns that often have ethical and political implications and nuances (see Borner and Menz 2005). When trust is called into question, it seems natural to be concerned about and to scrutinize the nature of the expertise and raise expectations of what an expert should be, especially due to the risks that the public may be exposed to vis-à-vis the products engendered by the food and agricultural sciences (e.g., when food security, safety and quality, and public health are at stake).

Agricultural scientists are steeped in discourses associated with *risk*. According to Brunk et al. (1991) "a risk debate is not primarily a debate between those who accept the verdict of scientific risk and those who do not. . . Neither is it primarily a debate within science itself. Rather it is primarily a political debate—a debate among

different value frameworks, different ways of thinking about moral values, different conceptions of society, and different attitudes toward technology and toward risk-taking itself." The epistemic dependency and trust found in the expert-nonexpert relationship discussed above are emblematic of a "risk debate." Furthermore, agricultural and food sciences are also informed by social processes, and scientists may find themselves making decisions that are either inherently normative or conditionally normative. "An issue is inherently normative if resolving it consists of endorsing a normative claim" (Brunk et al. 1991, p. 154). Those who are concerned about the presence of genetically modified foods in the food chain, for example, with *AquaBounty's AquaAdvantage* genetically modified salmon, may be worried that the US Food and Drug Administration's environmental assessment is unable to give either a complete or an accurate portrayal of all the risks and environmental and health harms involved, especially if wild salmon stocks become "contaminated." Proponents who are anti-genetically modified foods claim that no data set can, for that matter, account for the risks and uncertainties associated with this technology, since the likelihood of escapes and subsequent impacts on wild salmon stocks and human health cannot be adequately quantified by scientific measures alone.

Scientists may also encounter conditionally normative issues (Brunk et al. 1991, pp. 30–31) where judgments are appealed to in order to resolve the issue since data is momentarily unavailable. For example, "AquaAdvantage salmon is safe for the environment and for human consumption" may be premised (at the time) on a narrow adoption of the "probabilist" or "expected utility model" of risk (Thompson 1995), where risk is taken as a product of the "probability" or likelihood of a harmful outcome occurring and its magnitude (Friedman and Savage 1948). By circumscribing the magnitude of harm, for example, the FDA preemptively decided on the normative conditions that matter. The public feels that a rushed process has usurped their autonomous decision-making opportunity, they may be suspicious of experts who reduce

risk to a utilitarian ethical basis. Those concerned about genetically modified foods and those who depend on “the wild caught label” or wild fisheries for their livelihoods, on the other hand, may see the matter as inherently normative if risk is conceived in terms of personal well-being (Plough and Krinsky 1987; Thompson and Dean 1996) and whether or not they feel hoodwinked or betrayed by the experts and the FDA.

Agricultural and food scientists must be in a position to comprehend fully the broader impacts of choices and decisions that they make based on assumptions, values, and preferences to which they are committed in the discharge of their professional responsibilities as scientists. They should also be cognizant about which of these ethical concerns takes priority over others in the public consciousness, and whether the burdens and benefits associated with either the results they infer or line of thinking they advocate (either intentionally or not) are equitably distributed among the relevant stakeholders. Cultivating certain professional virtues can go a long way in promoting a trustworthy relationship with the lay public. Examples of these virtues include respect, honesty, openness, compassion, conscientiousness, integrity, and accountability. Alongside these virtues, professional rules, e.g., oaths to the professions and codes of ethics, can offer guidance to agricultural scientists and prompt them to understand their obligations to the public and their colleagues and what constitutes acceptable behavior.

Sources of Specific Ethical Concerns Related to Trust

The agricultural and food sciences must contend with both substantive and procedural ethical issues. Substantive issues are about philosophical and normative commitments associated with the moral status of particular matters such as the intrinsic or extrinsic ethical concerns of genetically modified food sources. Procedural issues are about the ethical governance and decision-making mechanisms that involve science, technology, policies, laws, regulations, and best practices.

On the substantive side, agricultural and food scientists must contend with ethical diversity. Ethical diversity can be instantiated in different ways and includes (adapted from Anthony 2012a):

1. Competing ethical frameworks
2. Contrasting duties to the commons
3. Varying conceptions of harm
4. Differing accounts of sustainability

On the procedural side, agricultural and food scientists may be steeped in discourses about the shape of their engagement with the public, producers, policy makers, and industry. A key challenge is to ensure that the discourse spaces promote engagement and trust through consultative knowledge transfer and laypublic and multidisciplinary involvement, collaboration, and empowerment (see, e.g., Burgess 2004). Thus, it is important that many relevant viewpoints are represented in order to produce a deliberative process that is robust and not “hijacked” by special interests. In policy making, scientists need to show understanding for the difficult issues and sensitivity to different value systems, regardless of their personal viewpoint, and encourage transparency and honest brokerage of complex issues (see, e.g., Pielke 2007).

On the epistemological side, the agricultural sciences must be cognizant of the nuances associated with epistemically dependent relationships which can undermine public trust, such as knowledge deficits that can lead to information hierarchies of power and estrangement. The tendency to privilege facts over values and the temptation to relegate or trivialize values to the realm of the emotional or as knee-jerk responses may also plague science-public discourses (Felt et al. 2009). These issues are briefly considered below in turn:

Substantive Issues

1. Competing Ethical Frameworks

There is significant disagreement about how to understand the common good across many value and ethical systems. Those working in agriculture and food may be perplexed

about “what is the right thing to do.” They may be influenced by religious and cultural principles. Appreciating a fuller range of ethical perspectives at the frontiers of food and agricultural sciences is essential to ensure equity and avoid tunnel vision. Here are but a few ethical approaches that pervade common morality:

Rights and duties, benefits and harms, and/or virtues and vices are part and parcel of common morality and impact ethical decision-making processes. They underscore how individuals evaluate the behavior of others as well as give guidance for their own habits. Briefly, a rights-based approach holds that moral subjects ought to be treated with dignity and they possess certain claims that cannot be “trumped” by consequences, no matter how good the outcome (see, e.g., Thompson 1998). Here, the morally obligatory or permissible action is the one which protects the moral interests of rights bearers. Proponents of this view may voice their disdain if certain agricultural technologies or policies benefit a few on the backs of the least well off in society. A harm-benefit approach, on the other hand, reflects consequentialist thinking. On a standard account of this view, namely, utilitarianism, right action is that which produces the best possible balance of good consequences over bad consequences for all the relevant parties (see, e.g., Thompson 1998). Proponents of this view may ask if the utilitarian ethic that is the engine behind much of contemporary agriculture has unintended consequences (or can it genuinely promote a more sustainable model of resources use and management vis a vis “sustainable intensification”), such as devastation of rural communities and landscapes, biodiversity loss, soil erosion, water pollution, and human and animal health and welfare, and if so, how the harms-benefits associated with the successes of this ethic have been calculated. Virtue ethics, as a normative ethical theory, contends that right action is that which is consistent with the set of ideal qualities of character or dispositions that promote excellent people and/or

good citizenship (see, e.g., Hursthouse 2006). The question “What sort of person/community should an individual or community aspire to be?” takes center stage. The theory involves what one (or a community) regards as worthwhile pursuing or preserving through food mores and agriculture with the view that the activity will contribute to human flourishing.

The interplay between rights, virtues, consequences, and other value systems may influence how agricultural and food scientists understand what is central to food security, for example. A utilitarian perspective may emphasize food security as availability of food, and thus, scientists committed to this approach will likely promote efficient production and abundance of food commodities at a low cost. A rights-based view may highlight cultural acceptability of food and ensure that the right to food, i.e., access, is premised on treating people with dignity and equity over cost or production efficiencies. A virtue’s view may emphasize the agency of people in the food system and habits of character that promote sustainable communities through and with food and agriculture (Anthony 2012b).

2. Contrasting Duties to the Commons

The commons here refers to interests shared or resources held together within the public domain. Many contend that some portion of Earth’s natural resources (e.g., land, water, air) should be available to all people to carve out an existence in order to sustain themselves. Further, “know-how” in order to produce food and the opportunity to be self-reliant should also be accessible to the public without too many bureaucratic and corporate barriers. That is, human beings, when not causing harm to others, should be free to pursue the means to produce nutritious and safe food according to their value systems and should not be blocked by private enterprise or hindered by governments. Community or civic self-reliant agriculture can be seen as reflective of the US Land Grant mission. Garret Hardin (1968) warned against the depletion of shared resources by individuals (or private enterprises) acting independently and

rationally according to their own self-interest at cost to others or society's long-term best interest. Overfishing and overgrazing by monolithic commercial interests, for example, are forms of "enclosure" or monopoly that threaten this notion of the commons, especially when fertilizer or pesticide use, soil erosion and nutrient depletion, skyrocketing greenhouse gas emissions, and excessive waste produce dead zones that endanger human and animal communities just for immediate-term private gain (see, e.g., FAO 2012a, b).

Scientists can help the public and policy makers decide how to address competing duties and how to limit damage and manage the commons by means of governmental intervention and/or regulation by international bodies and how to protect against inimical exploitation of natural resources by private interests. They can also help to empower local communities by strengthening civic food networks and through knowledge transfer projects. Whether scientists and policy makers encourage a more cooperative view as the best way to achieve a more sustainable agricultural commons in the long run or let the market decide will have implications for our environmental and natural resource capital (see, e.g., Parry et al. 2005; Tilman et al. 2011).

3. Varying Conceptions of Harm

The principle "Do No Harm" can be understood as being motivated by either the principle of non-maleficence or the principle of beneficence (see in Beauchamp and Childress 2008). In the former case, scientists may be motivated by the negative duty to (a) refrain from imposing greater harms than benefits to a population at risk, (b) avoid causing pain and suffering or death, or (c) end futile or non-fruitful strategies in order to meet certain agricultural challenges. Others committed to the principle of beneficence may be spurred on by the positive duty to relieve suffering, disease, or malnutrition and may focus on preventative or prophylactic measures. In both cases, scientists need to be sensitive to the different measures that might enter into their

deliberations and the corroborating evidence that they take up. Weighing and weighting (i.e., how much weight is given to a particular outcome) will also determine how they consider the cost-benefit analysis as will whether or not they are committed to a decent minimum or threshold view of human well-being (see McMahan 1998). The cost benefit-analysis may take the form of utilitarianism, namely, to promote the greatest good for the greatest number or pareto optimality, that is, an action is permissible so long as what benefits the initiator of the action does not significantly harm others. Further, a more basic question is what agricultural and food scientists think about who can be the recipient of moral harm and benefit. Can animals or nature be the object of direct moral consideration, for example? The predominant view is that the "environmental commons" has no legal status other than in economic terms. It is often thought of as property, and thus land use for agricultural development and expansion for intensive purposes is often seen as progressive and preservation efforts as impractical and obstructive, even inimical to human well-being. Careful calculations must be made in order to estimate the spatial and temporal dispersion of the impact of agricultural and resource development. Scientists and policy makers may not always be sensitive to how the benefits and burdens should be distributed intra- and cross-generationally and interspecifically and thus cannot ensure that they are distributed equitably. Further, they may not always appreciate how spaces and resources held as commons are valued passively for their recreational, aesthetic, or noninstrumental values. Hence, it is important that ethics be integrated into these discussions.

4. Differing Accounts of Sustainability

Currently, there appears to be a sociopolitical struggle around the normative dimensions of "sustainability" (Thompson 2010, p. 262). There are many views on sustainability that complicate how food and agricultural products are valued. Scientists should be open-minded when they assess,

communicate, and manage concerns around sustainability since there are national, regional, and philosophical differences around this notion. The view of sustainability that is adopted has implications for the moral and epistemological outlooks and research agendas pursued (Thompson and Nardone 1999).

A dominant view of sustainability in discourses around food and agriculture revolves around resource sufficiency, where sustainability is “the rate at which resources are being consumed [over a time frame for which] the practice is to be sustained. If current or foreseeable supplies meet or exceed the calculated amount, the practice is sustainable” (Thompson 2010, p. 223). Resource sufficiency is concerned with the duration of availability of a given resource over a period of length. Exponents of this view of sustainability often rely on technology to fix their way out of challenges (Thompson and Nardone 1999).

Functional integrity, another popular conception of sustainability, is the capacity of a system to maintain itself without external disruption, centering on component aspects of an agri-ecological to regenerate (Thompson and Nardone 1999). Exponents champion reproducibility and resilience of the whole system (Thompson 2010, p. 229). According to Thompson (2010), exponents of functional integrity rely on norms, values, and perceived obligations as inherent dimensions of agri-ecological systems.

Procedural Issues

Effective and responsible sites of public engagement are also central to promoting ethical trust between agricultural experts and the lay public. If the process of engagement with an informed public is undertaken as an open and honest process of inquiry (see, e.g., Dewey 1927; Hickman and Alexander 1998), then this will help to legitimize the ethical basis behind policy decisions. Public and multidisciplinary input at opportune moments can provide crucial evaluation of the relative merits of scientific claims and augment arguments

that have a moral flavor and provide additional insights when scale and impact of risks associated with agricultural challenges are considered. When members of the public are actively more involved in the process of public policy making through engagement mechanisms that afford transparency and visibility, they are not only more confident that they have some semblance of control over how complex and controversial scientific issues are discussed, framed, and resolved, but there appears to be genuine opportunity for debate or dialogue concerning more basic questions over fundamental values or virtues related to the direction or shape of the enterprise (Felt et al. 2009). Appreciating the extent to which “facts” and “values” confound the engagement process is also central. By encouraging laypersons, policy makers, and scientists to equally commit to a process of mutual learning and to reflect on the pervasive bias that “Western science” fact is more authoritative over values (and are seemingly without social influence), policy makers may reduce hierarchical inequilibrium inherent in these relations. So as long as scientific knowledge is automatically accepted as superior to any value position and as long as simple regulations become the foci for resolution to complex problems, some segment of the general public may have a hard time getting behind certain innovative and potentially fruitful policies (see, e.g., Pielke 2004).

Scientists who engage with the public must also guard against “downstreaming” (Felt et al. 2009, p. 362), a form of displacing ethical concerns to the margins or postponing important conversations about substantive issues that involve relegating public consultation to later stages of the policy innovation process. Downstreaming may weaken legitimacy and confidence in the outcome of a policy-making process and produce contempt for the sources of advice. Downstreaming can occur if the ethical is identified with the legal, for example. This maneuver actively forestalls the need for further debate and deliberation especially if the presence of existing regulation about a certain issue is taken (by those with decision-making authority) as a satisfactory terminal point. Participants who are fatigued by political apathy, or disenchanted

by public discourses around food and agriculture may also defer their ethical jurisdiction and competency to so-called scientific or regulatory experts. Deflection of this sort of ethical responsibility to the regulatory space may mask the necessity of pursuing ethical inquiry into specific issues. When ethical questions are sidelined this way, laypersons may feel marginalized as a consequence of a lack of representation and opportunity to shape the trajectory of food and agricultural policies, especially in the wake of risks and impacts of novel technology on society (Haimes 2002). Proxy representation by self-proclaimed expert scientists and policy makers could fall short of what lay sources of knowledge may advise.

Epistemological Concerns

Members of the lay public may not be aware of all the nuances that apply to the science and technologies involved in food and fuel production. For example, how should public officials employ and manage water more efficiently for agricultural purposes and what technologies ought to be applied in order to be more judicious about water and land use for agricultural production, both for plant- and animal-based systems? In some cases, given an untutored canvass of the available information, the lay public may be justified and rational in their initial estimations about specific issues (e.g., about the impact of genetically modified foods on their health) but may be inadequately informed, may be misinformed, or have false beliefs. While scientists and philosophers can help them to reason better, in many cases, the public may need help to digest and frame the relevant information and evidence in ways that enable them to rationally consider the evidence for what it is actually. It can be seen in instances of scientific and moral uncertainty, especially in the presence of conflicting “expert” testimony, knowledge deficits, and lack of awareness about agricultural and food issues. Since many members of the public do not have an independent understanding of the science and technologies that can be employed to resolve dilemmas and disputes,

they are epistemically dependent on those in the know. They place trust in food and agricultural scientists to communicate impartial information about their work and the risks associated with agricultural products. A public that has a distrustful view toward “experts” may feel justified in discounting the evidential basis of the claims made by scientists who are perceived as coy, cagey, and not credible.

Scientists must be vigilant not to overestimate the value of the facts to which they appeal or arrogantly privilege only their own expertise. Facts or evidence-based claims are often the site of political struggle (Irwin 2006). Agricultural and food scientists should be aware that scientific evidence are also associated with values, preferences, and judgments and they can influence the ways in which the scientists pursue their research or the recommendations they make (Pielke 2007; Heymann et al. 2009). Furthermore, in instances where laypersons already feel subservient to the authority of “experts,” they may devalue their own empirical assessments (Felt et al. 2009). Here, there is a danger that ethics problems evaporate and are not considered when members of the public do not have confidence that their evidence counts as the “right facts”. This is an example of ethical disenfranchisement. Which facts are employed and dismissed will impact the identification of what issues should be raised and how they ought to be framed and addressed. Furthermore, there is a danger of dismissing other sources of knowledge, for example, indigenous and place-based knowledge as inferior, untutored, irrelevant, or emotional. The epistemic asymmetry between facts and values remains sharp, where facts are taken as “givens,” but values are “constructed” or “merely one’s opinion,” or trivially characterized as “emotional.” Thus, in theory, there is a bias toward evidence-based claims as being stronger than value-based lay knowledge. However, the “fact-value divide” may have less force in reality at the end of the day. Which “facts” matter and why (e.g., how values are placed and displaced) depends less on there being a hard line separating facts from values but on social influences like outcomes and priorities set by communities with influence.

Summary

Agriculture continues to play a major role in the economic, social, and ethical activities of many communities in developed nations and emerging economies around the world. Apart from feeding people and providing jobs, agriculture, as a source of bioeconomy, is the vital lifeblood for many individuals and communities. Agriculture contributes to food stability and security and to the health and prosperity of both urban and rural communities.

Ethics, especially ethical trust, is the lynch pin that holds together the nexus of agents and elements that make up the global food and agricultural system. Since agricultural and food sciences are highly specialized and layered, consumers and citizens must defer to the good will and expertise of the cadre of scientists to “mind the store.” Trust in the scientific community is central since many of the developments necessary to meet the challenges mentioned above are public goods and will require a strong public commitment (in the absence of private inclination or commercial interests), to make ethically measured investments in agricultural research, innovation, and technology development. Successful partnerships between the private and public sectors are crucial in identifying priority areas for research and development, managing risks, and appreciating the practical and ethical concerns faced by different communities around food and agricultural issues. When concerns cannot be met through public-private partnerships, public support is essential to pursue research outcomes that promote a more resilient, sustainable agricultural and food system whose benefits may be shared equitably by all.

Public consultation with respect to the ethical consequences or application of policy should be encouraged in earlier stages of the policy innovation process (Wilsdon and Willis 2004). Earlier engagement with a diverse lay public is central to help them appreciate the moral and epistemological issues at stake and to come to terms with policy and technical solutions. Scientists can help to link seemingly unrelated constituents in the food system to solve problems of

food supply, processing, distribution, and use. Emergent collaborations that reflect a participatory decision-making process by a plurality of stakeholders can also promote the interest of the most vulnerable members of society if their advice is directly sought whenever possible to find innovative solutions for the challenges mentioned above and to build truly equitable, healthy and sustainable food and agricultural systems.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Expertise in Agriculture: Scientific and Ethical Issues](#)
- ▶ [Sustainability of Food Production and Consumption](#)

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Ethics of Agricultural Development and Food Rights in International Organizations

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Synonyms

Accountability; Agricultural sustainability; Codes of conduct; Fairness; Food rights; Guidelines; International organizations; Justice; Principles; Responsibility; Standards; Value conflicts

Introduction

Ethical concerns about the right to food and agricultural development are evident in debates within various United Nations (UN) agencies or associated international organizations (IO) and many agreements, commissions, working groups, and programs that those IOs implement or facilitate. Values conflicts and consensus have appeared in negotiated agreements leading to numerous founding charters and technical treaties, reflecting diverse notions, objectives, and applications of fairness, justice, accountability, and responsibility. Ethical assumptions, tensions, and compromises are embedded in various standards, guidelines, principles, and indicators for defining, measuring, and effectively ensuring adequate, safe, nutritious, and culturally appropriate food, food rights, and agricultural development. Ethical issues have related to seed propagation, food growing, cultivation and processing methods, trade in food products, livestock production, horticulture, herding, fishing or aquaculture, pastoralism, plant gathering, agroforestry, and more. Interconnected ethical and rights concerns across UN agencies and other IOs have overlapped with discussions about access to and control over food, genetic resources, seeds, land, water, cultural heritage, and indigenous knowledge protection.

These and other ethical issues concerning food security, food rights, and agricultural development addressed by the UN or other IOs are referred to in academic literatures discussing food and agricultural ethics, environmental ethics, and development ethics; human rights and agricultural law; and in various UN, civil society, legal and farmer analyses or interpretation guides, and other primary documents. This entry reviews relevant debates, documentation, and reference materials historically and how these themes have evolved in contemporary contexts.

1930s to 1980s: Early History of Food Rights, Safety, and Ethical Trade

Various notions of moral duty for wealthier, more privileged nations toward suffering or poorer peoples and countries were embedded in early twentieth-century global politics and IOs. That duty, sometimes based on even older or traditional cultural beliefs, as well as modern Christian or other religious, cultural, philosophical, and humanistic values, becomes translated into secular concepts about political, economic, or social justice. Those in some cases were transformed into specific legal commitments or obligations of governments with shared global diplomatic norms in our modern international (Westphalian) system based on sovereign nation states. However, such ideas were never pure moral goals or legal strategies. They were always mixed with competing ideological, geopolitical, and socioeconomic objectives of governments as well as differences within or among their different ministries or agencies, including those people appointed to negotiate with, or who work in, IOs as diplomats or public servants.

Incipient policy ideas, legislation, projects, and program proposals linking ethical responsibilities of more fortunate countries to address the health, food, and nutritional needs of others, as well as economic or geopolitical interests of some countries to ensure open trade and increased consumption of agricultural products, were evident in discussions as early as the 1930s in the now defunct League of Nations (O'Brien 2000).

During the Second World War, planning for the new postwar UN reflected more urgently and widely shared moral values but also conflicting perspectives. They reflected geopolitical tensions and national interests of the soon to be victorious Western Allied powers that created the UN system which exists today and various international agreements, development programs, and agencies which contributed to or followed from its birth. The Food and Agriculture Organization (FAO) of the new UN was conceived in 1943 during war, as a postwar technical agency focused on food security. The United States hosted the FAO's first planning meeting with a vision built partly on a basic moral objective, "freedom from want of food," an aspect of the democratic justice vision and political, security, and moral values embedded in President Roosevelt's classic 1941 "four freedoms speech." The new FAO, established in 1945, was the first technical agency in a new UN system built on stated moral objectives as well as socioeconomic or perhaps even "distributive justice" aims (Macer et al. 2003, p. 482). Its 1945 Constitution affirmed that all nations joining would "...promote the common welfare... (while) contributing towards an expanding world economy and ensuring humanity's freedom from hunger...."

FAO's founding ethical vision and operational mandate had no explicit human rights objectives, but the 1948 *Universal Declaration on Human Rights* gave the FAO and other IOs a clearer moral as well as legal compass. The 1948 Declaration pledged that: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food..." (Article 25). Later agreements, such as the 1966 United Nations *International Covenant on Economic Social and Cultural Rights*, enshrined more specific (albeit still vague) agricultural development and food security rights. However, governments did not easily meet such food rights obligations, or sometimes for sensitive political, religious, cultural, economic, or other reasons even intentionally avoided them. Instead, new IOs or programs, often championed and hosted by a particular government with its

own unique ethical views, had to address specific concerns (including ethical tools or guides) for ensuring different kinds of food or agriculture rights. New IOs or programs partly addressed tensions, conflicting claims, and weaknesses of human rights law concerning food or agriculture by facilitating ethically significant codes of conduct, guidelines, standards, and principles.

In 1961, an International Convention established the International Union for the Protection of New Varieties of Plants (UPOV) as an IO to encourage plant breeding by granting breeders intellectual property rights for new plant varieties. Its mandate aimed to encourage and safeguard breeders' interests while serving national agriculture development. The UPOV resulted in some major ethical debates and practical, legal challenges between opposing sets of rights, those of breeders and farmers. For example, farmers could be breeders but still have their traditional agricultural knowledge or germplasm exploited by scientist breeders, governments, and private corporations and may not have their own varieties recognized or protected.

During the early 1960s, ethical concerns also emerged surrounding the international trade and consumption of safe food. The FAO and World Health Organization (WHO) formed the Codex Alimentarius Commission (CAC) in 1963 to develop food standards, guidelines, and texts such as codes of practice under the Joint FAO/WHO Food Standards Program. The CAC, which continues its work today, set out to develop standards for particular types of foods, commodities, or industries based ostensibly on scientific or objective rationale for ethical codes and guidelines. Its work has covered a range of measures related to food additives, pesticide residues, nutrition levels, contaminants, hygiene, food labelling, and more.

In the 1970s, government and public consumer concern grew over the emerging power and some unscrupulous behavior of the food and agriculture industry in addition to worries about unsafe food. The FAO/WHO Program and CAC produced a *Code of Ethics for International Trade in Food Including Concessional and Food Aid Transactions*, adopted first in 1979,

revised in 1985, and again in 2010. Its major objective was to establish principles for the ethical conduct of international trade in food, to protect the health of the consumers, protect import countries from dumping, and ensure fair food trade practices. But Codex work has still been contentious over competing values, allegations of inappropriate corporate industrial influence, technical disputes over what should be deemed safe, and different definitions of ethical trade. This Code was (and still is) a voluntary mechanism to encourage (not legally insure) food safety standards by companies and governments while not inhibiting international trade. An ideology (or for some an ethical value) of free trade market “fairness” partly competes with food product safety considerations in the Code.

The FAO in 1983 established a *Commission on Genetic Resources for Food and Agriculture (CGRFA)* to develop international policies and agreements related to management of plant genetic resources as well as farmers’ rights. Initial UPOV work (noted above) to protect breeders’ rights had conflicted with farmers’ concerns and broader ethical considerations of competing rights claims. A 1989 FAO Conference partly reconciled this conflict adopting two resolutions (*Resolution 4/89, Agreed Interpretation of the International Undertaking*, and *Resolution 5/89, Farmers’ Rights*) aiming to balance breeders’ and farmers’ rights. One major ethical issue ostensibly resolved was affirming a principle of greater respect for farmers’ values, traditions, and knowledge. Other serious ethical concerns soon emerged over Intellectual Property Rights (IPRs), especially claimed by corporations, partly resolved in legal terms (yet without well addressing important ethical concerns) under the Agreement on Trade-Related Aspects of Intellectual Property Rights (known as TRIPS) in 1986, which came into effect in 1996 under the new World Trade Organization (WTO). Yet how best to interpret and apply farmers’ and breeders’ rights, as well as indigenous peoples rights (who may also be farmers) in human rights law and in trade, has remained ethically contentious, legally confusing, and politically debated and remains open to conflicting interpretations (Andersen 2005; Moore and

Tymowski 2005; and Oguamanam 2006). IPRs and TRIPs remain contentious now despite ostensibly greater legal protection for farmers and indigenous rights in principle.

1990s to 2000: Sustainability, Agricultural Biotechnology, Genetic Safety, and Bioethics

The 1990s began as the Cold War ended. But other debates or concerns relevant to sustainability, food, and agricultural development ethics followed with major implications that some IOs, particularly UNESCO and then FAO, were to explore more strategically and systematically. With guidance from the FAO, the CGRFA, and other agencies or commissions, new IOs or programs were launched to coordinate more effective responses to ethical as well as practical challenges for conceptualizing sustainable agriculture and achieving food security.

The 1992 Rio Declaration on Environment and Development and the United Nations Conference on Environment and Development (UNCED) agreed by most world leaders reflected shared ethical assumptions or values or principles intended to shape a common (sustainable) future. Principle 15 of the Declaration building on some earlier academic and UN deliberations affirmed the value of “the precautionary approach” stressing that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” This “precautionary principle” was one of UNCED’s key ethical guiding notions for future environmental (and food or agricultural) decision-making, although it has remained a contentious idea, continuously debated for its moral, policy, and practical implications, especially related to assessing environmental as well as legal risks associated with genetically modified (GM) seeds, plants, or food among other issues. UNCED’s *Agenda 21* vision offered tools, mechanisms, and targets. *Chapter 31* referred to “Scientific and Technological Community” responsibilities to develop codes of

practice or guidelines regarding environmentally sound and sustainable development and "...establish advisory groups on environmental and developmental ethics...to develop a common value framework..." Other Chapters discussed "sustainable agriculture," farmers, and more, implicating IOs' follow-up.

UNCED planning coincided with negotiations for the 1992 *Convention on Biological Diversity* (CBD) and a new IO, the Secretariat of the Convention on Biological Diversity (SCBD). The CBD posed a major ethical challenge, that is, "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies..." (Article 1, Objectives). What can be considered "fair" or "equitable" and whose rights to consider was (and still is) a major ethical and legal concern. Contentious technical debates and political negotiations have been in the CBD language of "access to genetic resources and benefit-sharing" (ABS) with competing rights claims, ethical arguments about sharing and access, as well as improved standards for trade, and stated (but still conflicting) needs of researchers, governments, industry, farmers, and indigenous peoples (Moore and Tymowski 2005; Greiber et al. 2012).

Other IO processes also recognized serious ethical concerns associated with the rapidly emerging field of biotechnology research. In 1991, the CGRFA in consultation with over 400 international experts from the scientific community and civil society prepared a *draft Code of Conduct on Biotechnology*, to maximize its positive effects and minimize possible negative effects. In 1993, the FAO through the CGRFA recommended that the biosafety component of the draft Code be forwarded to the CBD to be considered for its Biosafety Protocol then under negotiation. The CBD approved the *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* in 2000. That technical agreement aimed (among other things) to ensure safe

handling, transport, and use of living modified organisms (LMOs) resulting from biotechnology. The Protocol did not, however, fully resolve many larger ethical issues associated with agricultural biotechnology.

In this same period, the Consultative Group on International Agricultural Research (CGIAR), in 1997, already involved with FAO, CGRFA, CBD, and other IOs or processes reflected on how ethical principles could strengthen its own mission. The CGIAR, a quasi-UN agency established in 1971 to promote agricultural sciences for development and poverty reduction among developing nations, today consists of 15 specialized centers working in over 100 countries. The CGIAR has partnered with other IOs to protect agricultural biodiversity and native varieties through gene banks, in situ conservation, crop research, and training. Its 1997 draft *Ethical Principles Relating to Genetic Resources* referred to four principles: equity; trusteeship of genetic resources; respect, responsibility, and integrity in science; and social benefits encouraging individual centers to elaborate with respect to their particular mandates.

The CBD after 1995 gradually broadened its mandate demonstrating biodiversity's relevance to food and agriculture. By 2000, the CBD launched a new work program on agricultural biodiversity for its "conservation and sustainable use." This was another contentious ethical concern as private corporations accused of "bio-piracy" sought to assert rights to commercial exploitation of (and at times exclusive patenting of) genetic resources under the CBD and its ABS provisions or through other IO mechanisms such as the CAC, TRIPS, CGIAR, and WTO.

Further complementing (and complicating) CBD's work, the FAO, with the CGRFA (noted above), worried about loss of genetic resources as a whole, with many species or varieties under threat yet important for future agriculture development and food security. The CGRFA wanted to conserve those resources with local people's rights in the context of national sovereignty. For those purposes, the CGRFA in 1993 adopted a nonlegally binding *International Code of Conduct for Plant Germplasm Collecting and*

Transfer. But ethical concerns continued over different interpretations of human or indigenous rights claims to nature or genes conflicting with corporate IPRs within the CGRFA Code, CBD, TRIPS, CGIAR, and other mechanisms.

During the 1990s, some science and technology issues became even more publicly contentious. In response, the Educational, Scientific and Cultural Organization (UNESCO), in 1993 launched an International Bioethics Committee (IBC) and created a new bioethics program, initially working on human genome issues, but later addressing plant genetics with food and agriculture. In 1998, UNESCO established the *World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)* as an advisory body to address broader concerns (ten Have and Jean, 2006, p. 336).

Toward the end of the 1990s, many ethical challenges posed by rapid advances in science and society more clearly and urgently implicated food and agriculture. The FAO commissioned a related study of FAO staff views. That review, based on 103 interviews, indicated that although ethics had not been openly discussed much until then most staff members had strong ethical motivations. FAO staff perspectives covered a range of broad ethical issues (food, rural development, information, biotechnology, sponsorship/funding, environment, animals, and personnel) including many more specific subthemes (Bhardwaj et al. 2003).

2000 to 2008: Ethical Biotrade, Water, Corporate Accountability, and Food Rights

As the new century began, many interrelated ethical challenges affecting food security, agriculture, and human rights persisted, intensified, grew, diversified, and became more complex but were still poorly debated or analyzed in public discourse or IO policies and programs. However, after 2000 some IOs began to more systematically (through dedicated new programs and budgets) address some of those issues. They began a more critical examination of the ethics of

emerging technologies applied to food and agriculture; how to best realize food rights; began to focus more strategically on water and climate change issues (some affecting food and agriculture); and initiated a dialogue about ethical guidelines for corporate industrial behavior affecting agri-food businesses.

Among the principal IOs or special new initiatives implicating food security and agricultural development ethics were the FAO and UNESCO (introduced above) and new IOs or offices including the UN Global Compact (UNGC) and the UN Special Rapporteur on the Right to Food, both beginning work in 2000.

The United Nations Conference on Trade and Development (UNCTAD) which had been founded in the 1960s to better represent the economic, trade, and investment interests of the poorer, and then politically marginalized developing countries, made a small contribution to ethical trade guidelines affecting food and agriculture products among other sectors.

UNCTAD's new work focused on trade issues related to the CBD and other international initiatives. This resulted in new *BioTrade Principles and Criteria* in 2007, which included Criterion 2.2 stressing that "management of agrobiodiversity should include agricultural practices that contribute to the conservation of biological diversity" and "create conditions that favour the regeneration of natural ecosystems." Criterion 4.4 further underscored that "Negative impacts on, *inter alia*, productive and local cultural practices that affect diversification and food security should be prevented" (UNCTAD 2007).

UNCTAD also provides guidance by serving on the board of a related new NGO called the Union for Ethical BioTrade (UEBT) established in 2007. The UEBT has focused on further developing related concepts and principles, with more specific technical standards and verification frameworks. These have all built on UNCTAD's seven *BioTrade Principles and Criteria*, namely, (i) conservation of biodiversity, (ii) sustainable use of biodiversity, (iii) fair and equitable sharing of benefits, (iv) socioeconomic criteria, (v) compliance with national and international regulations, (vi) respect for the rights of actors

involved in BioTrade activities, and (vii) clarity about land tenure, use, and access to natural resources and knowledge. Agriculture, as well as aquaculture, sourcing, harvesting, production, processing, value chains, market development, and food trade, cuts across all of these principles. UNCTAD's most recent work further offered specific guidelines for assessing biotrade resources based on biological as well as socioeconomic studies (UNCTAD 2013).

New attention in this period also focused specifically on transnational corporations (TNCs) including discussions of agribusiness. One UN Commission on Human Rights report in 2003, for example, on *Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights* mentioned TNC obligations toward the realization of the right to adequate food. Among the new UN initiatives have been strategies to improve corporate social responsibility (CSR). The UNGC articulated "ten principles for a better world," which support human rights, labor standards, environmental protection, and (more recently) anticorruption, for those businesses which signed on to the Compact.

However, critics of the UNGC and many other CSR initiatives, which benefit from the UN image, affiliation, or guiding principles, have suggested essentially that this type of CSR focuses on ideas of "responsibility" and voluntarism in codes of conduct or guidelines while it advances positive corporate images but avoids corporate "accountability." The UNGC, they argue, has not provided any clear monitoring or enforcement mechanisms (Corporate Watch 2006, p. 8). One UN study historically documented this issue, highlighting similar concerns with brief reference to food corporations (Bendell 2004).

UNESCO after 2000 also identified major ethical issues, analyzed policy implications, made additional program recommendations, conducted ethics education activities, prepared learning resources, and facilitated new international agreements. In 2002, it made ethics one of five priority areas under its Social and Human Sciences Program. One initial result was UNESCO's

2005 *Universal Declaration on Bioethics and Human Rights*, which under Article 17, referred to "...the role of human beings in the protection of the environment, the biosphere and biodiversity." A major ethical implication of that agreement among UNESCO member states is that "the world's major food crops depend on new genetic material from the wild to remain productive. ..." (ten Have and Jean 2009, p. 251). This UNESCO Declaration complements others including the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) in 2001 and the 1994 TRIPS Agreement.

UNESCO, in the new century, also began more focused work on various other ethical issues associated with biodiversity, water, and climate change. As early as 2000, UNESCO's COMEST was working on water ethics. One report focused on freshwater consumption and use referring to agriculture and food security implications while offering suggested ethically based guidelines. It said food security was a "moral imperative" and that "more efficient use of water for agriculture should be encouraged to increase soil production and crop yield and to avoid waterlogging and salinization (Selbourne 2000, pp. 11–13, 38).

In 2007, UNESCO's *International Hydrological Program* with support from its *Division of Water Sciences* with others co-organized an *International Conference on Water, Ethics and Religion* in Stockholm and a workshop in Spain while engaging other UN agencies. Those meetings discussed, among other issues, ethics of virtual water in food trade, as well as broader food security, food production, and governance concerns. The meeting and research report involved experts from the United Nations University (UNU) and International Water Management Institute (IWMI), a Colombo-based CGIAR center working on interrelated water, environment, and food issues (Llamas et al. 2007, pp. 81–96, 171–186).

For UNESCO, the Asia Pacific region was one of the most active in establishing new networks, hosting conferences, and producing publications on ethical issues some including references to food and agriculture ethics. One, for example, in 2010 as its title suggests, wrestled with the issue

of *Universalism and Ethical Values for the Environment* as part of a new UNESCO “Ethics and Climate Change in Asia and the Pacific (ECCAP) Project” (Rai et al. 2010). Another, the following year, entitled *Ethics and Biodiversity*, included analyses concerning biodiversity and food production, food safety, food webs, water, climate change with concern over rights claims and food security, as well as special reference to Asian contexts and cases (Macer 2011). Several other working groups and UNESCO meetings as part of this work addressed related ethical issues.

The FAO after 2000 formally designated ethics a new priority for interdisciplinary action partly in response to expanding TNC influences among other factors. It established a new Committee on Ethics and an independent Panel of Eminent Experts to review critical issues and inform decision-making. The FAO over the next several years held consultations on particular ethical issues, conducted studies, and issued a series of reports. They included a broad overview: (1) *Ethical Issues in Food and Agriculture*, 2001; (2) *Genetically Modified Organisms, Consumers, Food Safety and the Environment*, 2001; (3) *Expert Consultation on Food Safety: Science and Ethics*, 2002; and (4) *The Ethics of Sustainable Agricultural Intensification*, 2004. Those reports, addressing many issues FAO staff earlier identified, including more recent concerns, such as such as biofuels, articulated various ethical challenges and dilemmas while offering some technical analysis of specific issues with recommendations for policy-makers.

After 2000, some IO work more explicitly linked human rights, food security, and agriculture with ethics, drafting or calling for related guidelines, particularly with concern over the growing role of TNCs which arguably have ethical, if not legal, responsibilities to contribute to the realization of the “right to adequate food.” The *UN Special Rapporteur on the Right to Food* at the time asserted that their global reach was “not matched by a coherent global system of accountability” and that “despite wielding greater power than ever before” TNCs were “trying to avoid being held accountable...” (Ziegler 2006, pp. 16–18). The FAO began facilitating

consultations and reports on ethical issues with practical accountability tools for TNCs and others. This resulted first in the 2004 *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security*.

The CGIAR in this same period began reflecting more seriously on ethical questions in response to internal reviews as well as public criticism of its biotechnology work. In a 2007 *Report of the Biosafety Panel to the CGIAR Science Council on Biosafety Policy and Practices of the CGIAR Centers*, the CGIAR suggested much debate had been about the perceived morality of transgenic technology, but that its concern was “practical ethics,” or learning from and adopting “best practice.” The CGIAR did not question the moral value of transgenics research, which it had been increasingly engaged in and planned to continue. It instead focused on “safety” issues and protocols. Nonetheless, the CGIAR’s first major ethical review in 2008 acknowledged it had poorly analyzed or responded to many “sustainability” or “protecting nature” concerns and that budget pressures could undermine an ethical vision (CGIAR Science Council 2008, p. 86; and discussed in Nelles 2011, p. 412).

Finally, one other IO after 2000, the United Nations Environment Program (UNEP), which had partnered with UNESCO since the mid-1970s on joint environmental education (EE) activities, made a small contribution under its EE unit programming to environmental ethics education. UNEP produced a guidebook with illustrations referring to food security and agriculture challenges among many others (Jickling et al. 2006, passim; and UNESCO n.d.).

2008 to Present: Agrobiodiversity Protection, Land Grabs, Responsible Investment, Climate Crisis, Environmental Change, and Sustainable Agriculture

Interconnected global financial, fuel, and food security crises during 2008 and 2009, with food

riots over prices, hunger, and access, led to protests worldwide among farmers, consumers, and civil society groups (Holt-Gimenez et al. 2009). Such deepening and widening problems contributed to ongoing and new ethical considerations. Climate change concerns with ethical debates about some responses, such as biofuels competing with food security and ecological objectives, also created new, more complex dilemmas for IOs and led to new debates and initiatives. Governments and TNCs seeking new food sources and profit-making opportunities including new land acquisitions brought new ethical debates amid CSR ideas, corporate accountability, and the need for better guidelines for business and investment that would still insure farmers' and broader human rights. New IO initiatives followed.

By this time initial CBD negotiations led in 2010 to the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*. It included a new responsibility commitment on how best to conserve and protect agrobiodiversity. UNEP also made a small contribution to related debates in partnership with a university-based ethics center. It published a related ethics report which pointed out that the CBD, which also was concerned with the importance of biodiversity for food security and sustainability of the world's food supplies, did not define the meaning of equity and fairness (Schroeder and Pisupati 2010, pp. 9, 19). The UNEP study included analysis of human rights and benefit-sharing issues surrounding the ITPGRFA and other themes.

Ethical issues over agricultural biotechnology, relations among scientists and small farmers, and IPRs intensified as CGIAR partnerships increased with private sector companies, foundations, and government donors' influence over research priorities. After the complete restructuring of the CGIAR in 2009–2010, it newly addressed ethical issues in 2012, adopting *CGIAR Principles on the Management of Intellectual Assets* (known as “CGIAR IA Principles”) implying it had a responsibility to share its research results as a “public good” while

strengthening national research systems to combat poverty among the poorest while promoting sustainable development. The referential, interpretative context for *IA Principles* implementation was various legal agreements, treaties, protocols, and processes and human rights instruments including the CBD, Nagoya Protocol, UPOV Conventions, and others.

Also in 2012, the FAO helped conclude both *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* and *FAO Guiding Principles for Responsible Contract Farming Operations*. One major related review facilitated by the UN Committee on World Food Security (CFS) has also been *Principles for Responsible Agricultural Investments* (PRAI) Zero Draft, to be finalized in 2014 as stakeholder consultations continue. That work built on FAO collaboration with the International Fund for Agricultural Development (IFAD), UNCTAD, and the World Bank (see IFAD, the UNCTAD Secretariat, and the World Bank Group 2010). The PRAI draft focuses on eight main principles to improve or strengthen “responsible investments in agriculture and food systems” including reference to food security and nutrition and the progressive realization of the right to adequate food... (Principle 1); economic and social issues (Principle 2); environment, natural resources, and climate change (Principle 3); cultural issues (Principle 4); policy coherence and sector development (Principle 5); governance, grievance mechanisms, and accountability (Principles 6 & 7); and review mechanisms and accountability (Principle 8). Numerous other agreements, codes, and processes underpin or link to the proposed PRAI (Committee on World Food Security 2013). Still other IO initiatives and related CSO or business led activities complement CFS and PRAI work (Committee on World Food Security 2013).

The CFS after 2009 when it underwent reform (partly in response to the 2008 food, financial, fuel, and emerging climate crises) has been one of the more innovative, civil society responsive mechanisms of the UN system, including family farmers, fisherfolks, herders, landless, urban

poor, agricultural and food workers, women, youth, consumers, and indigenous people. But although various groups have engaged in PRAI negotiations, some, including Via Campesina, GRAIN, and other key civil society networks and farmer movement organizations, criticized the PRAI concept, assumptions, and ethical foundations. They suggest the FAO should prevent land grab abuses, yet through the PRAI it (unethically) legitimizes farmland grabbing by corporate and state investors. Fundamentally, as they note, the PRAI and similar instruments are all *voluntary* guidelines (i.e., suggestions), not legally enforceable food rights or farmer rights (i.e., to protect land or biodiversity, produce food, save seeds, etc.). Some civil society and farmer rights critiques center around this overarching ethical issue as well as the basic, institutionalized problem of a TNC-dominated global agribusiness and food system supported by governments. They demand justice against rights abuses and support for alternative (agroecological, small farmer based) systems (GRAIN 2012; Holt-Gimenez et al. 2009).

Reflecting similar concerns with respect to some overlapping or broad ethical issues identified or implicating the FAO, WHO, Codex, CBD, CGRFA, UNESCO, CGIAR, and WTO, a FAO Expert's Commission on Ethics argued that core ethical issues in food and agriculture arising from the TRIPS, for example, were then still unresolved and pressing. Those issues were:

- The increasing risk of a transfer of important knowledge from the common domain (public goods) to the private domain, often controlled by corporations
- The likely negative impact of the TRIPS Agreement on the livelihood of poor farmers
- The uncertain impact on sustainable access to affordable, safe, nutritious food for consumers with limited income
- The environmental impact, including the effect on biodiversity
(Food and Agriculture Organization of the United Nations 2011, p. 32)

Finally, also under UNSG auspices and administrative coordination of the Sustainable Agriculture Team of the UN Global Compact (UNGC), the UN is currently developing the Sustainable Agriculture Business Principles (SABPs) in

consultation with a “Core Advisory Group” (CAG) of various business, civil society, NGOs, experts and academics, commodity roundtables, as well as other UN agencies. The UNGC's initial *white paper* identified six “frames” for SABPs based on the following ideas: (1) be environmentally responsible; (2) ensure economic viability and share value; (3) respect human rights, create decent work and help rural communities to thrive; (4) encourage good governance and accountability; (5) improve access to and transfer of knowledge, skills, and technology; and (6) aim for food security, health, and nutrition. It further suggests drawing from “Principles for Responsible Engagement” adapted from a November 2010 guide related to business and water policy. A final agreement on SABPs is expected sometime in 2014 (UN Global Compact 2013).

Over the past decade, but especially since the interconnected food, financial, and fuel crisis of 2009–2009, global environmental problems have also intensified and become more difficult to curtail or mitigate. They include: land degradation, deforestation, desertification, pollution, aquifer depletions, greenhouse gas emissions and climate change, habitat and biodiversity loss, GMO contamination/pollution, and more. A recent FAO experts' review summarized some of these and the ethical response needed as “essentially twofold.” The first is to promote conditions to ensure access to adequate food. The second is to promote policies and measures ensuring ecological sustainability of food production (FAO 2011, p. 10). These two main ethical concerns – food rights and ecological sustainability – will likely remain central to current public debates, unresolved science and policy conflicts, and related IO initiatives in the future.

Summary

Ethical debates and proposed norms or guides, some linked to food rights and security discourse, have been part of food and agriculture within UN system and affiliated IOs since their early

foundations in the 1940s. Beginning in the 1960s and 1970s, food safety and quality issues grew with ethical concerns among existing or new IOs and agreements. From the 1980s environmental issues and sustainable agriculture concepts informed ethical debates as well as new codes of conduct in food and agriculture. After 2000, the increasing power of TNCs involved in food and agriculture, greater environmental awareness, and human rights concerns, as well as criticism from civil society and farmer groups, leading to new investment codes and principles, some still under negotiation. Yet many ethical debates remain inadequately addressed by IOs today. Unresolved concerns still surround questions of TNC accountability and if “ethical” only approaches (i.e., principles, standards, voluntary codes, etc.) will be sufficient to insure environmental sustainability and food security rights or support ecologically sustainable agricultural development that will further adequate and dignified livelihoods for small farmers.

OECD Organisation for Economic Co-operation and Development
PRAI Principles for Responsible Agricultural Investment
SABPs Sustainable Agriculture Business Principles
SCBD Secretariat of the Convention on Biological Diversity
TRIPS Trade-Related Aspects of Intellectual Property Rights
UEBT Union for Ethical BioTrade
UNCED United Nations Conference on Environment and Development
UNCTAD United Nations Conference on Trade and Development
UNESCO United Nations Educational, Scientific and Cultural Organization
UNGC United Nations Global Compact
UPOV International Union for the Protection of New Varieties of Plants
WHO World Health Organization
WTO World Trade Organization

Glossary of IO Terms/Acronyms

ABS Access to genetic resources and benefit-sharing
CAC Codex Alimentarius Commission
CBD Convention on Biological Diversity
CFS Committee on World Food Security
CGIAR Consultative Group on International Agricultural Research
CGRFA Commission on Genetic Resources for Food and Agriculture
CHR Commission on Human Rights
COMEST World Commission on the Ethics of Scientific Knowledge and Technology
CSM Civil Society Mechanism (CSM), Working Group on investment of the CFS
CSR Corporate social responsibility
FAO Food and Agriculture Organization of the United Nations
IBC International Bioethics Committee
IPRs Intellectual Property Rights
ITPGRFA International Treaty on Plant Genetic Resources for Food and Agriculture

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Ethics of Dietitians

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Synonyms

Decision-making framework; Dietitians; Ethics; Food; Medicalization; Nutrition

Introduction

Registered dietitians are those charged with addressing nutritional health in clinical, public health, and private environments as well as overseeing the production of large-scale food operations in hospitals and other organizations. Given the ethical debates surfacing within contemporary food and nutrition topics, dietitians are often in positions where ethical decisions are required. However, ethics as an area of inquiry within dietetics is limited. Furthermore, there is a paucity of evidence that ethics is taught to dietetic students during their undergraduate education. This situates dietitians as having to address ethical issues while being largely unprepared to do so. The purpose of this essay is to outline ethical debates in dietetics and propose a means to adequately prepare food and nutrition professionals for ethical decision-making frameworks arising in practice. Additionally, areas of further inquiry into ethics within the context of dietetic education and practice will be outlined.

Dietetics as a Profession

A hallmark of the dietetic profession is that it emerged from home economics in the 1970s. Increasing determination to medicalize nutrition

and remove the work of dietetics from the home and place it more squarely in the public realm underscored this period in the profession's historical development. Along with this move came the growing importance of the dietetic professional association that marketed dietitians as trusted authorities on nutrition and food. In doing so, the association made clear that dietetics was an exclusive profession to which entry was only granted by completing a 4-year university degree and a 1-year practical internship completed typically in a clinical setting. Simultaneously, the associations developed codes of ethics to guide dietetic practice.

Codes of Ethics in Dietetics

Dietitians of UK, the Academy of Nutrition and Dietetics (USA), the Dietitians Association of Australia, and Dietitians of Canada have all provided their codes of ethics for public viewing online. Although these national codes exist, their enforcement varies. In Canada, for example, the regulation of dietetic practice is a provincial matter, thus leaving the national association's code of ethics unenforceable. The ten provincial regulatory bodies have provided distinct but not dissimilar codes for dietetic practice that apply to members in each province. If there is an ethical violation, the provincial regulatory body has jurisdiction to address that violation. According to representatives at each nation's association, reported ethical violations are extremely rare in dietetics.

Ethical Dilemmas in Dietetics

As mentioned earlier, the nature of dietetic work heightens the possibility of ethical dilemmas in practice. Food has long been known to be associated with ethical debate given its strong moral- and value-laden meanings. In the preface to the newest edition of "Food, Morals, and Meaning," Coveney (2006) writes "...we can understand that nutrition is not only a science but also an ethos which presents a problem for modern

individuals in regard to their food choices and pleasure” (p. xvi). As dietitians are socialized into the profession of food and nutrition, their own beliefs and attitudes combine with those held by the profession. At times, this presents great conflict and tension for the practicing dietitian (Gingras 2005). Several such dilemmas are outlined in the following section.

Ongoing Ethical Dilemmas

Scope of Practice

As the field of dietetics continues to evolve, so too does dietitians’ scope of practice. As dietitians venture into new areas of practice, they inevitably encounter new and unique ethical issues. Dietitians currently work primarily in the following areas: clinical practice, foodservice management, research and education, and industry/consulting (Anderson 1993). Specific issues faced by dietitians in these varying practice areas will be outlined in more detail below. However, it is helpful to first think about what types of ethical dilemmas might be encountered by dietitians working in different domains. Clinical ethical issues include patient autonomy and rights, confidentiality, and artificial nutrition support. Additionally, as dietitians take on new clinical duties such as finger pricking for blood glucose testing or inserting nasogastric tubes to feed those who cannot eat through by the mouth, individual practitioners have an ethical responsibility to only engage in such acts when they feel competent to do so (Steinecke and The College of Dietitians of Ontario 2012). Individuals working in foodservice management face ethical issues related to human resources management, as well as the management of other resources such as money, materials, and time (Anderson 1993). Those working in research and education must deal with plagiarism, knowledge translation and dissemination, and ethical research pertaining to human subjects. Finally, dietitians who consult for or represent industry must be keenly aware of the potential for conflict of interest to arise in their work, which could impact their professional ethics.

Tube Feeding and End of Life

The issue of artificial nutrition support at end of life rose to prominence in the public eye with the case of Cruzan vs. Director, Missouri Department of Health (1990), regarding the withdrawal of nutrition support from Nancy Cruzan after she had been in a persistent vegetative state for 5 years after falling victim to a car accident at the age of 26. The issue came to light again with the Terri Schiavo case of 2005. In both cases, life support was eventually discontinued for the patient; however, substantial ethical questions remained unresolved (O’Sullivan Maillet 2008). In a position paper put out by the American Dietetic Association on the “ethical and legal issues in nutrition, hydration and feeding,” three major ethical frameworks through which end of life care can be viewed, each with a distinct perspective, are outlined. The first is the utilitarian view, most famously purported by Mills in which the ethical option is the one that provides the greatest positive effect and least negative effect on all individuals impacted. The second perspective is Kant’s deontological viewpoint whereby certain actions are viewed as inherently right or wrong irrespective of their consequences. Finally, there is an Aristotelian outlook, which focuses on the virtue of the decision maker (O’Sullivan Maillet 2008). The association maintains that “the patient’s right to self-determination [should be] the overriding principle” in decision-making. In cases where an individual is unable to express their own desires, a substitute decision maker should speak on behalf of the patient guided by what they believe the patient would want, even if this is against the said decision maker’s personal desires (Andrews and Marian 2006).

In a study on the opinions of Louisiana dietitians on nutrition support and end of life, Langdon et al. (2002) found that a majority of dietitians (60 %) were in support of “foregoing, withholding, or withdrawing nutrition support at end of life.” Although most dietitians believed that the patient or family are the most qualified to make decisions regarding the matter, 95 % thought that the dietitian should be involved to some extent in the decision-making process.

However, only half of them felt qualified to provide the necessary information to be of assistance. Interestingly, research has shown that continued nutrition support in terminally ill patients may in fact be detrimental. It can lead to increased gastrointestinal fluids and subsequent vomiting increasing the requirement for nasogastric suctioning, increased respiratory distress and choking due to fluid retention in the pulmonary system, peripheral edema, and increased urine, which may lead to the requirement of catheterization in weaker individuals. Furthermore, terminally ill patients do not usually report hunger and often have little desire for food. The major negative impact of withdrawing nutrition support at this stage of life is dry mouth, which can be alleviated with proper mouth care (Andrews and Marian 2006). For a more comprehensive discussion of artificial nutrition support, individuals should refer to Monturo's (2009) review of the issue as published in the Hasting's Report from 1971 to 2007.

Industry Business and Food Service-Related Ethical Issues

Although dietitians in all areas of practice may at some point be confronted with potential conflicts of interest, dietitians consulting or working for industry or profit (whether in food service or private practice) must acknowledge this ethical issue on a daily basis. This is because they have obligations to diverse groups of people including clients, customers, managers, partners, and shareholders (Grandgenett and Derelian 2010). One example of an ethical dilemma faced by dietitians in industry is the request to endorse the marketing of a product that may not have substantial scientific evidence to support its use. Alternatively, dietitians may promote a product by citing appropriate scientific evidence, but neglect to disclose their personal affiliation to company or trade association, which is also considered unethical. In the new age of social media, many dietitians maintain personal websites or blogs on which they may endorse certain foods or products. It is not uncommon for companies to approach dietitians with

propositions to promote their products in exchange for some sort of material compensation (Grandgenett and Derelian 2010). Even if the compensation takes the form of free samples of the product, this can be considered a conflict of interest. More mundanely, dietitians have also been accused of being co-opted by the diet food industry in their promotion of low-fat foods, which have not been shown to reduce the risk of chronic disease (Austin 1999).

Dietitians working as foodservice managers also face conflicts of interest as food manufacturers may offer incentives or rebates to hospitals that purchase their products over those of a competitor. Even if the organization and not the individual manager receives the incentives, they may still represent a conflict of interest. In these cases, dietitians should follow facility guidelines on the acceptance of gifts, make sure that products purchased meet nutritional guidelines and meet the best interest of patients, and provide full disclosure of both real and perceived conflicts of interest. An ethical dilemma, which is unique to dietitians working in food service, is the issue of employees taking food home. Although at first pass this is tantamount to theft, the action becomes ethically gray in instances where the food is about to expire or is left over and therefore will be thrown out. Furthermore, the act is akin to managers and other hospital employees taking left over catering home after a meeting. Therefore, this is an issue of institutional culture, and clear policies should be developed based on ethical principles (Barkley 2008).

Body Weight Regulation

Taking "obesity management" as one example, dietitians are currently advised through national practice guidelines to promote "healthy weights" and encourage their patients and clients to lose or gain weight to fit into a body mass index category of "normal." A wealth of new data exists that this advice is contraindicated and continuing to draw on obsolete weight management advice perpetuates medicalization of the body (Sobal 1999) and weight stigma (Puhl and Heuer 2009; Gard and Wright 2005).

In an era where many individuals living in developed countries have instant access to so much entertainment, information, communication, and even food, there is a desire among many consumers to employ a “quick fix” to meet their weight loss goals. In response to this desire, there are a plethora of dietary supplements that purport the benefit of weight loss, as well as a small number of pharmaceutical products. It is important that dietitians remain up to date with the research and employ evidence-based practice when counseling patients regarding the use of such products (Biesecker and Cummings 2008).

Research Ethics

The most common ethical breach in scientific research is compromising data integrity. This can take the form of data fabrication or publication of misleading data. Reporting bias, whereby researchers only publish data that are consistent with their research objectives, personal beliefs, or funders’ interests, also falls into this category. Another major issue of academic integrity is the practice of either excluding authors who have significantly contributed to the research or including authors who have failed to do so (Nicklas et al. 2011). An ethical issue specific to healthcare research, especially when carried out in a community setting with underserved populations, is the provision of ancillary care for research participants. This problem is further complicated in nutrition-based research since food is not merely medically therapeutic, but also a basic aspect of the human experience encompassing social, emotional, and cultural dimensions (Merritt and Taylor 2012). Merritt and Taylor (2012) discuss three potential ethical challenges related to this issue. First, providing such care may impact study outcomes, particularly in trial-type study designs. Second, there is the question of whether any care provided to participants should be offered to the community at large. Third, field workers are typically not clinicians but require adequate training to determine the need for ancillary care, since they are in closest contact with participants and community members and therefore more in tune to their needs.

New Ethical Issues to Consider

Unique Ethical Issues Related to the Aging Population

In recent decades, many countries have gone through a demographic shift resulting in an increasing proportion of older individuals in their populations. Dietitians face many unique ethical challenges when servicing older individuals. Increasing evidence has linked dietary factors to healthy aging as they are not only important for the treatment of chronic diseases, but also for the prevention of such conditions (Leppert 2009). However, food does not only serve a therapeutic purpose in the lives of individuals. What meaning people derive from food is determined by social, emotional, and cultural factors. Therefore, especially for older individuals, food and diet can have an enormous impact on quality of life. The ethical dilemma then becomes, to what extent should a dietitian recommend restricting intake of certain foods in the name of health, when those foods are important to older individuals for other reasons. This issue is further complicated in institutional or community program settings where governments or organizations mandate dietary parameters. For example, dietitians may face questions such as what to do if an 85-year-old with hypertension wants to eat eggs and bacon every morning? Or how should they discuss limiting sweets with a 94-year-old with diabetes whose blood sugar level occasionally rises beyond clinical guidelines when they eat chocolate bars? Dietitians also need to realize that elderly clients who have limited social contacts and are seen at home are particularly vulnerable to power dynamics in the client/provider relationship (Leppert 2009).

Organizational Ethics and Resource Allocation

As dietitians become more involved in business in both the private and public sector (e.g., taking on more administrative duties within hospitals), they need to begin to think more about the ethics of organizations. Issues arise in the areas of

human resources (such as hiring, firing, job and task outlines, and provider fatigue/burnout), internal and external communications, and corporate responsibility (to clients, shareholders, and communities at large). Even non-managerial dietitians need to be thinking about these issues. For example, interprofessional collaboration and dynamics may pose ethical challenges when another healthcare professional provides what a dietitian believes to be misinformation to a patient or client. Dietitians may also think about advocacy for increased positions within a healthcare organization. Although resources are strained, limited dietitian availability in both acute and chronic care settings may be detrimental to both clients who are not getting the best care possible and dietitians who may face burnout.

Food Security, Cultural Competence, and Environmental Sustainability

The World Health Organization defines food security as “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life” (2013). This definition is often expanded to include notions of acceptability and sustainability. To that end, dietitians need to ask whether the dietary recommendations they make are appropriate given these factors. For example, dietitians may want to consider education of patients or clients regarding sustainable food choices when recommending they consume potentially environmentally harmful foods such as fish. Additionally, some people may not find genetically modified organisms acceptable, while others may feel that such foods might increase environmental sustainability. It is important that dietitians remain up to date on the evidence regarding such foods so that they are able to make unbiased recommendations while at the same time remaining sensitive to consumer beliefs and values (Roberts et al. 2006). Acceptable foods are also culturally appropriate, and while cultural competence is considered best practice, an argument can be made that it should also be considered ethical practice.

Perhaps the most important component of food security is access. Dietitians need to be

aware of diet-related disparities, defined as “differences in dietary intake, dietary behaviors, and dietary patterns in different segments of the population compared to the general population,” and nutrition-care disparities, defined as “differences in access, delivery, and health outcomes of dietetic services offered to people with similar conditions,” which together make up “dietetics-related inequalities” (Fileti 2011). Furthermore, dietitians need to ask themselves to what extent are they personally and professionally responsible to reduce such disparities through actions such as advocacy?

Nutrigenomics

Perhaps the most recent ethical issues to emerge in the field of dietetics are those related to nutrigenomics. Researchers have found links between genetic variance and individuals’ ability to digest, absorb, or be otherwise impacted (either positively or negatively) by certain nutrients as well as their potential susceptibility to nutrition-related chronic diseases. The study of gene-diet interactions and the increasing availability of genetic tests on which clinicians can base recommendations raises questions regarding confidentiality, privacy, and genetic discrimination. Many questions remain unanswered: Should insurance companies have access to the results of such tests? Do dietitians have the duty to warn relatives who may have similar genetic susceptibilities? Should those unable to provide informed consent be tested? Should the testing be made available to minors and those who cannot afford such testing procedures (Reilly and DuBusk 2008)? Additionally, the psychosocial effects of receiving such test results are still unknown (Ryan-Harshman et al. 2008).

Ethical Decision-Making Framework for Dietetics

The framework that follows is but one example of a step-by-step process of ethical inquiry that can be applied to difficult situations a dietitian might encounter in practice. This process can be worked through independently or collaboratively with

others representing interdisciplinary practice areas. The benefits of working through such a framework collaboratively are the enhanced veracity of a final decision multiple perspectives can offer. The expectation is to apply the decision-making framework from beginning to end without missing a single step.

1. Problem

Name the problem clearly. Where is the conflict? What are the various perspectives on the problem?

2. Acknowledge Feelings

What are the “gut” reactions? Are there biased perspectives? What loyalties to individuals hold to these varied perspectives? How do such loyalties influence the final decision?

3. Gather the Facts

What are the ethically relevant facts? Whose account of the facts counts most? Have all the relevant perspectives been obtained? What do the institution’s policies or guidelines say? What does the relevant law say?

4. Consider Alternatives

What are the alternative courses of action? What are the likely consequences?

5. Examine Values

What are the preferences of the person receiving care? Are other values relevant? Which of the values conflict?

6. Evaluate Alternatives

What other options are available? What are the implications and consequences of each of those options?

Adapted from http://www.stmichaelshospital.com/pdf/ethics/ethical_decision_making_framework.pdf

By recognizing the ethical dimension to any eating or nutrition issue, dietitians can apply an ethical decision-making framework to it and then decide how to proceed. Applying an ethical decision-making framework may or may not have a variety of implications. It may or may not change the dietitian’s course of action. It also may or may not help the dietitian to feel more at ease with whatever decision they make and whatever course of action they take. However, what

the ethical decision-making framework does allow is an opportunity for the dietitian to apply a thoughtful analysis to any particular issue, ideally in a collaborative setting, so as to make a wholly informed decision on how to act.

Areas of Future Inquiry

Given the dearth of evidence demonstrating the effectiveness of applying ethical frameworks in dietetic practice, a first effort in this regard is warranted. Qualitative research with dietitians who consent to be interviewed about their process through ethical dilemmas would also shed light on approaches that buttress “good and right” decisions regarding food and eating. Additionally, there has been no research in dietetics regarding the impact of ethics in the curriculum on decisions made in practice. Curricular interventions, those applied in undergraduate dietetic education, would initiate a more committed professional loyalty to ethical frameworks as well as determine which ethical frameworks are best applied to which ethical dilemmas. Longitudinal studies that follow students into practice and explore the ethical issues encountered and the steps taken to address those issues are ultimately the best determinant of future ethics curriculum.

Summary

Despite ethics being an under-examined topic in dietetics, food and nutrition “experts” encounter many diverse ethical issues in practice. Gender studies, law, ethics, and the humanities can help inform ethical approaches to practice in dietetics. Ongoing research into effective ethical decision-making and education of new practitioners is warranted.

Cross-References

- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Eating, Feeding, and Disability](#)

- Eating, Feeding and the Human Life Cycle
- Ethnicity, Ethnic Identity, and Food
- Food Ethics and Policies
- Food Security
- Medicalization of Eating and Feeding

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Ethics of Nutrigenomics

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Introduction

Nutrigenomics is the study of the relationship between genes and food; like all applied sciences, it develops through contact with society. Normative assumptions, embedded in the way researchers formulate aspects of nutrigenomics research, affect this contact. These assumptions

may or may not be in alignment with currently held societal norms and values on food and health. To discuss the possible pros and cons of an alignment of nutrigenomics' assumptions and those currently held in society, one needs to reflect ethically these assumptions. The prominent view on gene-based and customized nutrition embodies at least three normative concepts. First, food is exclusively interpreted in terms of disease prevention. Second, striving for health is interpreted as quantifying risks and preventing diseases through "positive" food–gene interactions. The third normative idea is that disease prevention by minimization of risks is an individual's task. The thesis of this entry is that these concepts on currently dominant customized nutrition will not match easily with the concepts on food and health of various food styles that roam western societies and with a broader view of the relationship between food, health, and the meaning of life. Many people don't want to be a health freak. The non-synchronized coevolution of nutrigenomics and of society due to this mismatch of food styles and values is a challenge for nutrition scientists. To synchronize and optimize the realignment of customized nutrition and society, it is proposed that customized nutrition's research policy changes to a research partnership with society on the basis of fair representation of various food styles, in which health is not the only food value. Some current research programs develop those more encompassing views on customized nutrition.

Nutrigenomics Research: Organization and Assumptions

Organization

Nutrigenomics is directed to contribute to the response of complex health problems, including but not restricted to pandemic risks or the "obesity epidemic." The research covers a variety of specialties and requires a lot of money, collaboration, and interdisciplinary work. Biology, nutritional sciences, and human physiologies are some of the disciplines to study the gene–diet interaction. The molecular focus on gene sequences and

gene expression is the most important. Quite a number of scientists are working in this field of research. In the USA there are big groups working at UC Davis and with the FDA, in New Zealand we have Nutrigenomics New Zealand (NuNZ), and in Europe we have the DIOGenes and NuGO consortia and the Dutch Nutrigenomics Consortium. In particular, in the first decade of this century, scientists were able to gather a lot of support, and a lot of money went to this undertaking, making nutrigenomics "big science" (Afman and Müller 2012, p.68). The promise of nutrigenomics to lower public health cost was taken seriously by many policymakers and funding organizations, and many scientists felt that for the first time, nutrition science was being listened to (Penders 2010, p. 13).

Normative Assumptions of a Prominent Script in Nutrigenomics

In Komduur, Korthals, and Te Molder (2009), there are three normative assumptions distinguished in present nutrigenomics research. The authors selected papers written by ten nutrigenomics scientists (Ordovas, Mooser, Müller, Kersten, Afman, Milner, Dwyer, Wahli, Saguy, and Saris), four representatives of the food industry (German, Watzke, Mutch, and Moskowitz), and two nutritionists (Trujillo and Davis). Together these most salient normative assumptions on health and consumers comprise a prominent script in nutrigenomics.

As a result of the analysis, it turned out firstly that in the texts chosen, values regarding food are exclusively explained in terms of disease prevention through food. Health is therefore seen as a state preceding a sum of possible diseases, and food has an intervening role in delaying these possible diseases. Secondly, it is assumed that health should be explained as a calculable interaction between food and genes. Health is minimized to quantifiable health risks and disease prevention through food–gene interactions by the "right" food choice. The third assumption is that disease prevention by minimization of risks through the right food choice is the responsibility of the individual. The individual has to pay attention to make the healthy food choice and to

act accordingly on the basis of this personal responsibility either through finding out personal risks revealed through personal tests or through finding out to which risk group he or she belongs.

Together, these assumptions suggest that the good life (a life worth living, with the means to flourish and thrive) is equated with a healthy life, in which risks should be preventively calculated and balanced and in which the individual should have the prime responsibility to act in accordance to the outcome of tests by selecting the right type of food. Persons, who do not accept this task, do not act responsibly. The strong emphasis on health and the positive influence of nutrients in health was for some the reason to call this set of assumptions “nutritionism” (see Scrinis 2008).

A Daily Life Vision on Health

However, views on the relationship between health and food are notorious multi-interpretable and very diverse. This diversity is studied by sociologists; moreover, philosophers have also put forward very different views on this relationship (next section). According to the extensive sociological literature on views in daily life about health and the relationship with one's own body and with food, health is seen as a positive good that concerns the way one feels oneself as a healthy and respected person (Pajari et al. 2006; Payer 1988). This positive state is not determined by feelings of unrest or even concern for the coming of diseases in the near or far future; on the contrary, experiencing the living body and respected interactions is an enduring element of being healthy. Constantly worrying about your health during food choices is seen as an obsession for health and is viewed as a characteristic feature of a health freak and not of a social and convivial friend and relative. When persons are exclusively led by health considerations in their daily life, they are seen as disrupting the solidarity between themselves and their friends and relatives (Bouwman et al. 2009). In particular, food, as a kind of starter, occasion, or even excuse to have interaction and

communication with other people, is seen as a social device par excellence to maintain and deepen preferred social relations and to have conversations. Meals and drinks together are the most common mechanisms to maintain social networks and to share opinions about prospects and problems of life with people one likes. The type of meals and drinks chosen are intrinsically connected with the type of persons one wants to be in interaction with; food is an identity issue. People that do not align easily in the choice for the food chosen for health reasons but look perfectly healthy are seen as health freaks. Stubborn differing from others and always quarreling about the food offered are seen as making fuss about social relationships and not trusting others sufficiently.

In selecting certain types of food, people mostly get their knowledge about food qualities (and therefore also about the healthiness of the food chosen) from relatives and friends that are most trusted, not from scientists (Bouwman et al. 2009). Both with respect to their understanding of food products, as in handling the behavioral and social implications of this information, they rely heavily on their talks with friends and relatives during a meal or a drink (Leathwood et al. 2007). From these already referred to reports on qualitative research on talk about food and health we are confirmed about the range of different topics that according to daily life consumers belong to the issue of health and food, and the association between them that are made, and the way these different aspects are brought in some kind of liveable balance or even harmony (Pajari et al. 2006). In general, it turns out that consumers have quite a broad and multifaceted non-biomedical definition of health, in which personal well-being plays the most important role in connection with social relations.

It is not well known what quantitative surveys say about the frequency and spread of these different views on food and health in the total population, but these reports give ample evidence of the range of different aspects that according to consumers can belong to liveable beliefs of health in relationship with food. They show that there is a coherent view on the good life incorporating

a broad concept of health that is quite different from that incorporated in the assumptions of the prominent script of nutrigenomics.

Health in Philosophy: Good Life

Many philosophers have tried to show that it is typical for human beings to ask themselves questions like the following: what do I want in life? What is the meaning of life? What makes my life worthwhile for me and others? Posing those questions implies that living routinely and unreflectively one's life is not really the best thing to do. Due to the fact that human beings have so many diverse potentialities and vulnerabilities, and that life is finite (temporal), it is necessary according to most philosophers to examine what the meaning of life for human being can be. Under the general heading that the complexity of life urges one to examine what one really wants and how to live, the answers of these questions cover different ideas of the good life. The good life is therefore the name for ideals and ideas that are often not reached but are seen as guidelines and that can make individual actions and events meaningful. The answers to the questions of what to live for differ greatly, because some argue in favor of happiness (like hedonism and utilitarianism), others for religion or philosophical meditation (like Plato and Aristotle), others for doing just and good (like Kant), and again others for a life of passion (like Nietzsche). The common thread of the idea of the good life is that human life is only worthwhile in examining its meaning in terms of certain values and putting those values as guidelines and perspectives in living (Komduur et al 2009; Graham 1990).

Humans should examine what they really want, taking into account their capacities, talents, networks, interactions, and vulnerabilities between birth and death. The idea of the good life therefore covers not only issues of living in a decent, just, or moral way together with other persons but broader also in finding out what the meaning can be of living the way one lives; it is about "human flourishing" in connecting with a broad range of other cherished values, like

health, solidarity, and care. It has therefore a personal twist, which is however not to say that it is an individualistic idea (for the following, see also Komduur et al. 2009). Martha Nussbaum, who did a lot in examining the historical and systematic functions of the idea of the good life, argues that "to the Greeks, 'eudemonia' (happiness) means something like 'living a good life for a human being'. (...) Aristotle tells us that it is equivalent, in ordinary discourse, to 'living well and doing well'" (Nussbaum 1986, p. 6). The idea of the good life is about being respected as a member of the community and about the well-being of the community and future generations as well and therefore of doing and feeling good.

This philosophical emphasis on the broad concept of good life, the broad concept of health (as feeling good), and the relationship of health with other values in life coincides with the definition of the WHO from 1948, where health is seen as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."

It is interesting to note that the founding father of human rights, Immanuel Kant, cherished the same opinion on the meaning to food and health. First, in his very influential essay on "What is Enlightenment" (1784, Kant 1949), he connects his ideas about being free, autonomous, and mature in choosing your own food as a kind of third liberation next to being free in saying how the world is (the issue he elaborated upon in his famous first critique of pure reason) and expressing how the world should be (he elaborated upon this issue in his second critique of practical reason):

Laziness and cowardice are the reasons why such a large part of humanity, even long after nature has liberated it from foreign control (naturaliter maiorennes), is still happy to remain infantile during its entire life, making it so easy for others to act as its keeper. It is so easy to be infantile. If I have a book that is wisdom for me, a therapist or preacher who serves as my conscience, a doctor who prescribes my diet, then I do not need to worry about these myself. I do not need to think, as long as I am willing to pay.

Kant never wrote the (third) critique on the gastronomical reason and how to reach maturity

in that area, but his most suggestive comments on food are found in his “Anthropology from a Pragmatic Point of View” (1790). In general, he places humans between nature and reason. Man’s capacities derive neither from nature nor reason alone but from the two together, where nature stands for the passions and sensual experience and reason stands for transcending nature by using the faculty of reasoning to know, will, and appreciate (judge). For instance, to enjoy art and food socially means to transcend nature; it is to judge something that is given (nature) but structured according to the standards of judgment that are shared among rational beings (reason; beyond nature). The main thrust of Kant’s text is to emphasize what human beings can make of their nature; it is not about how nature has made them. Human beings must embrace the drive toward maturity, must stand on their own two feet, even if they hesitate and stumble in the process. Taste plays a special role here. It has, according to Kant, the extraordinary ability to stimulate reasonable solidarity through enjoyment. Enjoying food once means that you will want to enjoy the meal (together with others) again; this feature marks culture within society. But food is also more than that. A good meal with good people is an occasion on which experience and reason are united in the individual’s enjoyment at a given moment, a moment that can be repeated again and again. Good meals engage reason, which acts on the emotions, which in turn stimulate solidarity and humanity. Eating according to reason therefore means to have meals together and to enjoy the reasoning of others; it means also to let health only be one factor in choosing the food.

Since the time of Kant, many developments have taken place; at present many try to connect the idea of the good life and its concomitant idea of human flourishing with ecological and social challenges like environmentalism and consumption (Crocker and Linden 1998). Consequently, a good meal often comprises also ideas about the ethical acceptability of the production processes of food stuffs (Korthals 2004). Nevertheless, just as in antiquity, the idea of good life comprises a broad diversity of values, and health is only one of them.

Lack of Alignment of Nutrigenomics and Daily Life

From the story until now about the three different views on health and food, it can be easily inferred that there are considerable differences between the prominent nutrigenomics script, the philosopher’s view, and daily life views on health and food. The three normative assumptions of the prominent script seem to be contradicted by the other two. Nutrigenomics assumptions simply do not align with ideas, values, and attitudes in daily life. What will be the reaction of the genomics scientists that adhere to these assumptions? A study of the texts quoted in Komduur 2009 gives the most plausible answers of the script to these differences (see also Komduur 2013). One of these answers goes something like this: the consumer needs more reliable and understandable information and more knowledge to make up his or her own mind and to change the usual unhealthy food habits. Here, the solution is to give better information to the consumers (Leathwood et al. 2007).

The second reaction is that because consumers have already access to so much information and they in general know what to do, but are evidently unable to act accordingly, food scientists decide: let’s try to seduce the consumer by good-looking products with a health benefit. Promoting certain products is then the second solution to the gap between science and daily life. Therefore, for example, some scientists promote the eating of fish and the use of fish oil (Oken et al. 2008).

However, the issue is, are these scientists not “overdoing” the health scripts too much, in the sense that it is quite impossible for daily life consumers to live according to these exacting types of information, assumptions, advices, or products? For example, the advice to use as often and as much as possible fish oil would mean eating quite distasteful salads or experiencing fish-taste in meat. Would consumers like to do that? Probably not. Moreover, many consumers know about the depletion of fish resources and therefore they will not heed to this advice.

The emphasis on knowledge or information on the relationship between eating certain food

stuffs and future health seems for many consumers (and philosophers) only one aspect of the different aspects of life one has to cope with when one wants to have a good life. Other values are at stake as well, and life's complexity exactly asks everyone to strike a balance between them continuously.

Finally, one has to consider in how far scientists are legitimized to choose for the kinds of soft paternalism in taking care of the healthiness of consumers (Dworkin 2005). Can one ever be so sure about the dominance of the value of health over other values to prescribe the behavioral assumptions of nutrigenomics? Why not change the script and look for different types of nutrigenomics that more align with the complexities of daily life? Will a science push not backfire because so many uncertainties with respect to the relations between genes and food do galore (Korthals and Komduur 2010)? Why should only consumers have to change their life? Should science not produce knowledge and information that is more enabling to deal with the complexities of daily life?

Realigning Nutrigenomics with Daily Life

The differences between normative assumptions and daily life assumptions can probably not be bridged by producing information or new products or, more generally, by a one-sided offense from the side of science (see Korthals 2011). Probably nutrigenomics has also to change its assumptions and research trajectories and to take more into account the complicated web of responsibilities with respect to health. One way to find new bridges is to look to alternative scripts in nutrigenomics, and there are some, for example, the ones that can be called public health nutrigenomics and taste genomics. These other scripts clearly start not from a narrow personalized health perspective but from a broader health perspective or even from a totally different perspective, the genomics of taste. Prof. El-Sohemy from the University of Toronto in his *Nutrigenomics of Taste – Impact on Food*

Preferences and Food Production, 2007, for example, outlines issues of the relationship between food, health, and taste. Others, like Khoury (2005), develop nutrigenomics in close connection with considerations on common chronic diseases. By taking into account the embedded meaning of health nutrigenomics, one can formulate more socially acceptable research priorities. The full complexities of health can even better be incorporated by organizing end user panels in the different genomics research trajectories. Many nutrigenomics scientists feel the urge to produce recommendations of food intake, but they forget that their competences and knowledge do not lie in that quite complex field. Therefore, it seems advisable to let recommendations of food based on nutrigenomics be accompanied by social research of its successful applicability.

Summary

In this entry visions of the meaning of health and food in life are discussed in several rounds, and it is argued that a current and prominent script of nutrigenomics is at odds with those of daily life and of philosophy. A better interaction between science, ethics, and daily life could guarantee more fruitful results. It would result in better research priorities, better products, in which better means more socially applicable knowledge and information. The advantages are that by better listening to ethical assumptions of consumers, and by taking the science's and consumers' views seriously, science can have a better impact and can be a more trustworthy partner in tackling the complexities of daily life.

In discussing the relationship between health and food, ethical assumptions are unpacked in personalized nutrition, daily life, and philosophy; they are compared and a manageable realigning of them is proposed. This applied ethics strategy does not use (academic) ethics as a kind of traffic light that gives green or red lights to scientific developments that will either progress or not, but tries to start from explicating ethical assumptions interior to a certain field of practice and then

looks for fruitful integration of science and society (Keulartz et al. 2004). The social embedding of science without moral pain means making explicit moral scripts inside science, comparing these scripts of science with that of ethics and daily life ethics and finally looking for alignments.

Cross-References

- Eating and Nutrition
- Ethics in Food and Agricultural Sciences
- Food Ethics and Policies
- Food Labeling
- Food Risks
- Informed Food Choice
- Systemic Ethics to Support Wellbeing

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Ethnicity, Ethnic Identity, and Food

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Synonyms

Exotic food; Immigrant food; Immigration

Introduction

This entry explores ethical issues concerning ethnicity, ethnic identity, and food in the United States. This entry focuses solely on the United States because of its large diversity and immigrant population. However, there are parallel cases in Canada and England where ethnicity is tied to multicultural societies, recent immigration, and racial classification.

In the US context, food has been used to maintain both ethnicity and symbolic ethnicity for early and more recent immigrants. However, ethnic food can also be a pathway to both understanding new immigrant groups as well as alienating the other, especially racial and ethnic minorities. Ethical debates surrounding how and why we consume ethnic food expand our study of ethnic food especially in the US context.

Ethnicity is largely tied to an understanding of race but has been differentiated as based on culture and ancestral heritage, while race is a constructed category based on perceived physical differences (Gans 1979; Lu and Fine 1995). Ethnic food in the United States historically becomes a significant marker of identity for immigrants, Italian and Jewish, by the 1920s (Diner 2001; Gabaccia 1998). More recently, ethnic food is a marker of community ethnic and religious identity for Latina, African, South Asian, and Middle Eastern immigrants.

The study of ethnicity and ethnic food is interdisciplinary and includes important philosophical and sociological theoretical frameworks. Narayan's work problematizes the ethical aspects of eating ethnic food and particularly the food of the "other." She explores how consumption of ethnic food can be linked to reducing xenophobia. Appadurai examines how the imposed construction of a national cuisine often linked to postcolonial projects and can lead to *gastronomic imperialism*. Heldke introduces and problematizes *cultural food colonialism* as the process of eating food from developing or third-world cultures and how sociohistorical processes like colonialism play a role in how and why we exotify food of the other. These social and philosophical

discussions of ethnic food are significant to understanding the ethical implications of ethnic food and ethnicity.

Exploring Ethnicity, Ethnic Identity, and Food

Key concepts and themes in the discussion of ethnicity, ethnic identity, and food include ethnicity, symbolic ethnicity (Gans 1979), immigrant identity (Diner 2001; Gabaccia 1998), food parochialism, and culinary imperialism (Heldke 2003; Narayan 1997). Community, solidarity, and identity are all important functions of food (Anderson 2005). Abarca (2004) also looks at ethnicity through the lens of authenticity as a creation. This is an ethical issue as it questions who has power in constructing authenticity or who has claim to authenticity?

Ethnicity and Symbolic Ethnicity

Ethnicity is largely seen as a social construction based on shared cultural heritage, and race is understood as a social construction based on shared perceived physical traits. This section explores how ethnicity and symbolic ethnicity can help frame our discussion on ethnic food, ethnicity, and ethics. How ethnicity is displayed is one aspect of the ethnic dimension of food. Ethnicity of white ethnic groups is often more palatable to the dominant group.

Gans historically defined ethnicity in the United States as symbolic ethnicity pertaining to third-generation immigrants and future generations who have been able to successfully assimilate into the dominant culture including Irish, Italian, and Jewish Americans (Gans 1979). Symbolic ethnicity refers to an optional ethnicity available largely to white ethnic immigrants in multicultural societies. In this case, we focus on the United States because ethnic identities are often understood, created, and maintained through food, cultural events, and communities (Lu and Fine 1995).

Isajiw (1993) and Van den Berghe (1984) explore approaches to the social scientific

definitions of ethnicity. Isajiw explains that ethnicity is a social construction based on perceived cultural traits that takes place in everyday life (1993, p. 4). Van den Berghe also understands ethnicity as a social concept and (1984) understands food as an expression of ethnicity. "Our cuisine is the symbolic expression of our sociality, first in the intimate domestic sphere, and by extension with the larger group that shares our specific culinary complex: the inventory of food items, the repertoire of recipes, and the rituals of commensalism. Along with language, the food complex becomes a basic badge of ethnicity" (van den Berghe 1984, p. 392). He also claims that food is easier to maintain and share than an ethnic group's language or religion, so in many ways, food is the key to cultural transmission (Van den Berghe 1984, p. 393). Van den Berghe ultimately argues that the culinary complex is often the easiest way to reinforce ethnic ties and pass on ethnicity (Van den Berghe 1984, p. 393).

Lu and Fine (1995) explore the meaning of ethnic food in their exploration of ethnic restaurants and ethnicity and identity. Their research emphasizes how cultural symbols are used to display ethnicity, and ethnicity "depends on a set of consistent actions that permits others to place an individual in an ethnic category" (Lu and Fine 1995, p. 535). Ethnicity is ultimately realized in the United States through festivals, food, and consumption. Fine and Shun Lu emphasize that like ethnicity, authentic ethnic food is a social construction, and "the secret of the acceptance of ethnic food resides in the harmonization and compromise between seemingly contradictory requirements: being authentic and being Americanized, maintain tradition while unconsciously modifying it" (Lu and Fine 1995, p. 547).

Herbert Gans may have once referred to this type of identity maintenance as symbolic ethnicity, but further research on Italian immigrants reveals that food for Italian immigrants includes varieties of ethnic cuisine, structure (meal times), and rituals that continue to reinforce family and community ties. Food is a way to maintain much more than symbolic ethnicity for many immigrants in the United States.

Memory food is one way that immigrant women recreate a homeland in the American diaspora. Memory food is both a method for remembering one's ethnic and cultural heritage through cooking with family members and a technique for preserving culinary skills, through the sharing of food preparation. Memory foods are the dishes that are passed on from one generation to another often by grandmothers and mothers rather than through recipes (Camargo Heck 2003, p. 216). Memory food allows immigrants to maintain and renegotiate food traditions and ethnic identities but also create ethnic solidarity (Camargo Heck 2003, p. 217). Ray also explains that foodways are a way for society to understand how immigrants and ethnic groups construct class, ethnic, gender, and religious identities (Ray 2012, p. 43). "The importance of food in immigrant culture makes restaurants, grocery stores, and kitchens important sites where ethnicity is practiced and reproduced on a daily basis" (Ray 2012, p. 198).

Ethnic Identity, Immigrants, and Food

Food has been an avenue for American immigrants to maintain ethnic identities within families and communities. Hasia Diner (2001) and Donna R. Gabaccia's (1998) historical work on food, ethnicity, class, and immigrant American families demonstrates the significance of food in community and ethnic identity maintenance for Italian, Irish, and Jewish immigrants. Gabaccia's work highlights how food has been a means of ethnic identity building for Italian immigrants through community and shared meals. Diner adds a class and comparative analysis to Gabaccia's work as she points out how food was a way of breaking down class divisions historically for Italian, Irish, and Jewish immigrants in the early twentieth century. Vallianatos and Raine (2008) explore how consuming food is linked to constructing immigrant identities for South Asian and Middle East immigrants. Vallianatos and Raine explain that "Food also connects across time and place, and for many migrants, food is an essential component of

maintaining connections to home. How and what kinds of food are consumed recall families and friends left behind, and by continuing to consume both everyday and celebratory food migrants preserve these transnational relationships and enact their companionship with those back home” (2008, p. 357). Food is used to maintain a connection to the homeland, and through the consumption and creation of traditional food, immigrants are able to do this (Vallianatos and Raine 2008, p. 368).

Studying food is a way to also study ethnicity, culture, community, and identity. Gabaccia emphasizes that studying food is a mechanism for studying multiethnic societies (p. 9). American immigrants maintained immigrant foodways because food helped maintain tradition, social distance from other ethnic groups, and social status (p. 51). “American food” was ultimately created as a social construction in opposition to ethnic food in the late nineteenth century by American “cultural elites” (p. 125).

The first wave of acceptance of ethnic food in the United States occurred during the 1960s and 1970s largely because of an increase in immigration and counterculture (Belasco 1989; Johnston and Baumann 2010). However, “ethnic food” must be placed in a contemporary sociocultural context. Hippies and counterculture groups often saw ethnic food as an alternative to imperialism and capitalism (Gabaccia 1998, p. 212). “For some counter-cultural Americans, seeking a healthier way to eat returned them to their own ethnic traditions. Vegetarian and healthful versions of ethnic foods developed alongside the traditional ethnic fare offered at food festivals and featured in community cookbooks in the 1970s” (Gabaccia 1998, p. 214). “By the 1980s 10 % of all restaurants in the US were ethnic. The majority of these ethnic restaurants were Chinese, Italian and Mexican” (Gabaccia 1998, p. 218). By the 1990s, foodie tastes favored the natural, organic, and exotic which also welcomed ethnic cuisine (Johnston and Baumann 2010). This was also partly because of globalization and the continuing increase of immigration in the United States. But ethnic food also became one understanding of multiculturalism and

symbolic ethnicity. Eating ethnic food was one way that Americans often viewed themselves as multicultural, open, and tolerant. Food can be viewed as a gateway to inclusive cultural practices, perhaps decreasing xenophobia. Abarca’s work examines the ethical dimensions of ethnic food consumption.

Abarca’s (2004) research explores and questions how society defines and understands ethnic food. She explores and questions the cultural acceptance of ethnic food into dominant American culture, as well as how ethnic food is perceived in terms of real or imagined authenticity. Who has ownership or access to ethnic and or authentic food is an important ethical and philosophical aspect of studying food and ethnicity. She explains that “Without undermining the positive consequences of ethnic food consumption, an overly enthusiastic focus on these social effects can result in creating a deceiving notion of accepting ethnic minorities into mainstream culture” (Abarca 2004, p. 6). Food is often the one aspect of new immigrant communities that dominant cultures find digestible, but she expresses caution pertaining to this perceived acceptance. Secondly, she calls into question how authentic food is understood. Like ethnicity, authenticity is also a social construction. “Claims of authenticity in ethnic cookbooks and restaurants demonstrate the ideological complexities embedded within the phrase, “authentic ethnic food”” (Abarca 2004, p. 10).

Johnston and Baumann (2010) explore how ethnic connection is an important aspect of how “foodies” understand authenticity in relation to food. The authors define foodies as those who self-identify as having a strong interest in the “education, identity, exploration, and evaluation” of what they perceive as good food (2010, p. 61). Foodies tend to believe that particular ethnic cuisine should be cooked by specific ethnic groups; sushi should be cooked by Japanese and samosas should be made by Indians. How foodies understand authentic food raises ethical issues about how authentic and ethnic food is defined and who defines these terms. This desire for authentic food often results in reductionist understandings of racial and immigrant groups. Johnston and

Bauman emphasize that the ethics in assuming ethnic immigrants or racial minorities can inherently cook the food of their cultural ancestors is problematic and often leads to reinforcing cultural stereotypes.

Culinary Imperialism, Gastronomic Imperialism, Food Parochialism, and the Future of Ethnic Food

Ethnic food also has ethical and political concerns. Recent research has shed light on issues of power and privilege as they relate to ethnic and exotic foods. Appadurai introduces the term *gastronomic imperialism* as a type of cultural imperialism in which dominant forces impose culinary concepts and values onto a subordinate society or culture. Appadurai's work on Indian cuisine and cookbooks reveals one type of *gastronomic imperialism* with the British-imposed creation of curry as the national cuisine of India. Indian food became the ethnic other as a result of British colonialism. But curry became a fabricated national cuisine as a result of British rule. Appadurai explains, "What we see in these many ethnic and regional cookbooks is the growth of an anthology of naturally segregated images of the ethnic other, a kind of ethnoethnicity, rooted in the details of regional recipes, but creating a set of generalized gastroethnic images of Bengalis, Tamils etc." (Appadurai 1988, p. 15). These generalizations of the gastronomic other erase the specific details of regional ethnic cuisines.

In *Exotic Appetites*, Heldke (2003) introduces the concept of *cultural food colonialism*. She explains that this refers to cooking and eating ethnic foods from "economically dominated" or third-world cultures (2003, xv). Cultural imperialism refers to imposing dominant cultural and social practices, while cultural food colonialism refers to appropriating these practices (xviii). Food adventurers are often engaged in food colonialism as they see eating as an expedition (xxiii). Heldke emphasizes that food adventurers come from privileged class and often racial positions, and therefore, the ethics of privilege come to the

forefront of her analysis. Ethnic food rather than ethnic peoples is often more welcomed by food adventurers in privileged positions (Johnston and Baumann 2010, p. 102; Abarca 2004).

Uma Narayan (1997, p. 180) welcomes the eating of other cultures over "food parochialism." She explains that she grew up in a family and community where strict dietary restrictions associated with caste, class, and religion often reinforced strong boundaries and that eating the food of "others" allows for more openness to other cultures, perhaps allowing for less xenophobia. "Growing up in a context where food was intimately connected to caste status and various regimes of purity, it is food parochialism that tends to strike me as dangerous, while a willingness to eat the food of 'Others' seems to indicate at least a growing democracy of the palate. While eating ethnic foods in restaurants might result only in shallow, commodified, and consumerist interaction with an 'Other' culinary culture, it seems preferable at least to the complete lack of acquaintance that permits the different foods of 'Others' to appear simply as marks of their strangeness and 'Otherness'" (Narayan 1997, p. 180).

Kershen's research highlights that xenophobic attitudes in society were often reflected in food racism, culinary imperialism, and food colonialism, because food can also be a source of racial stereotyping (Kershen 2002 pp. 2–8). Jan Whitaker's (2005) work on the Anglo-American home highlights themes of race and food purity in the American context.

Summary

Ethnicity and ethnic food by nature are social constructions and, therefore, will continue to evolve as the makeup of societies and immigrant populations change. In the US context, food has been used to maintain both ethnicity and symbolic ethnicity for early and more recent immigrants and more recently is an avenue for creating community and passing on one facet of ethnicity to the next generation. Ethnic food can also be a pathway to both understanding new immigrant

groups and alienating the other, especially in the case of racial minorities. Heldke, Appadurai, Abarca, and Narayan's theoretical perspectives are important in understanding the ethics of culinary colonialism and ethnic food.

Cross-References

- [Authenticity in Food](#)
- [Food and Place](#)
- [Race, Racial Identity, and Eating](#)

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EU Regulatory Conflicts over GM Food

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Synonyms

GM food = agricultural biotechnology

Introduction

Since the 1980s agricultural biotechnology has been promoted as a symbol of European progress and political-economic integration. Policy language has focused on “modern biotechnology,” encompassing various techniques, yet policy measures have favored genetic modification techniques and their products. According to proponents, agbiotech provides a clean technology for enhancing eco-efficient agro-production. By the late 1990s, however, this technological trajectory was stigmatized as suspect. It was being called “GM food,” or *OGM* in Romance languages or *Gen-Müll* (garbage) in German. The trajectory

became negatively associated with factory farming, its hazards, and unsustainable agriculture. GM products have generally faced commercial and/or regulatory blockages to market access in Europe.

In the 1990s controversy over agbiotech in the European Union (EU), proponents criticized opponents for unfairly targeting or blaming a benign technology as a symbol of wider issues, such as industrial agriculture and globalization. As this complaint illustrates, proponents often draw distinctions between a technology and its context or consequences, while critics generally emphasize links between them. Indeed, technological controversy involves power struggles over how to define the issues at stake, even the nature of the technology. How can the conflict be explained? What can be learned from this experience for other new technologies?

Making Europe Safe for Agbiotech

Since the 1980s the European Union (EU)'s integration project has promoted biotech as a symbol of progress. By the early 1990s, biotech further epitomized promises of a "knowledge-based society," promoting capital-intensive innovation as essential for economic competitiveness and thus European prosperity (CEC 1993). New policies were being designed for a "competition state," directing resources toward the domestic capacity for global competitive advantage (Cerny 1999).

This featured efforts to attract private-sector investment, to subordinate public-sector research to private-sector priorities, to marketize public goods, and to generate globally competitive knowledge. According to this narrative, eco-efficient technologies would bring a competitive advantage and thus societal benefits, but Europe risks losing these benefits through inadequate financial rewards or overregulation. New policies sought to make Europe safe for agbiotech as normal products.

EU agbiotech policy was also linked with a trade liberalization agenda by invoking objective imperatives of global competition.

In parallel, the European Commission promoted agbiotech as essential for economic competitiveness and thus for survival of the European agri-food sector as well as its techno-scientific capacities. By the mid-1990s EU-US discussions were identifying "barriers to transatlantic trade," which must be removed through regulatory harmonization, especially for biotech products as a test case (Murphy and Levidow 2006).

Through EU decision-making procedures, regulatory criteria internalized biotechnological models of the socio-natural order. Under the EC Deliberate Release Directive, member states must ensure that GMOs do not cause "adverse effects" (EEC 1990); the scope of "adverse effects" was left ambiguous, to be clarified for each product in its context. Some member states warned that GM crops could generate herbicide-tolerant weeds or pesticide-tolerant pests, but official EU risk assessments classified such effects as merely agronomic problems. This normative judgment accepted the normal hazards of intensive monoculture while also conceptually homogenizing the agricultural environment as a production site for standard commodity crops. Through a technicist harmonization agenda, Europe was being de-territorialized as a purely economic zone, devoid of cultural identities (cf. Barry 2001, p. 70).

Thus early EU regulatory procedures incorporated policy assumptions of the agbiotech promoters. Under "risk-based regulation," societal decisions on agbiotech were reduced to a case-by-case approval of GM products, within a narrow definition of risks, placing the burden of evidence mainly upon the objectors. Each time the Commission proposed to authorize a GM product, it gained a qualified (2/3) majority in the comitology procedure representing EU member states, where dissent was marginalized.

These decisions complemented the wider policy framework of higher productivity for economic competitiveness, as an expected benefit from agbiotech products. This agenda was depoliticized by invoking objective imperatives such as globalization, treaty obligations, and "risk-based regulation." By the mid-1990s, EC policies were making Europe "safe" for agbiotech to achieve commercial success while

subordinating regulatory criteria to economic competitiveness.

The technology was being coproduced along with a marketization of nature and society (Jasanoff 2004), in the name of eco-efficiency improvements for agriculture. Regulatory procedures authorized “safe” GM products, which could then enter the EU internal market as extra options for farmers. They would have the free choice to buy more efficient inputs for global competitiveness. As unwitting consumers of GM food, the public would effectively support a beneficial technology serving the common good of Europe. Within this model of rational market behavior, members of various European publics had little scope to act as citizens.

Putting Agbiotech on Trial

By promoting agbiotech within a neoliberal framework, the EU system provoked great suspicion and even opposition, which grew from the mid-1990s onward. Agbiotech was turned into a symbol of anxiety about multiple threats: the food chain, agro-industrial methods, their hazards, state irresponsibility, and political unaccountability through globalization. The controversy often gained large public audiences through the mass media, as well as active involvement of many civil society groups. They took up concepts from small activist groups as well as from high-profile campaigns of large NGOs. Together these activities developed citizens’ capacities to challenge official claims and created civil society networks to which governments could be held accountable.

These activities criticized, used, and eventually reshaped the EU regulations. Demands for accountability took the form of various formal and informal trials. These dynamics continuously expanded trials, defendants, and arenas – what was put on trial, how, where, and by whom. Such trials arose along three overlapping themes – safety versus precaution, eco-efficiency versus agro-industrial hazards, and globalization versus democratic sovereignty – as shown in this section.

Safety Claims Versus Precaution

Lab and field trials were intended to generate evidence of product safety, thus demonstrating a scientific basis for expert risk assessments, which in turn could justify commercial authorization of GM products. Yet safety science became contentious. Expert safety claims underwent criticism for bias, ignorance, and optimistic assumptions (Levidow et al. 2005). Such criticism gained force from suspicion that public-sector scientists had lost any independence from agbiotech promotion.

When France led the EU-wide approval of Bt insecticidal maize 176, its favorable risk assessment was widely criticized by member states as well as NGOs. When France further proposed to approve maize varieties derived from Bt 176 in 1998, Ecoropa and Greenpeace filed a challenge at the *Conseil d’Etat* (the French administrative high court) on several grounds: that the risks had not been properly assessed, that the correct administrative procedures had not been followed, and that the Precautionary Principle had not been properly applied. These NGO arguments gained some support in the court’s interim ruling. Thus a government was judicially put on trial for failing to put a GM product on trial in a rigorous way.

When UK lab experiments claimed to find harm to rats from GM potatoes, the disclosure led to trials of other kinds. The project leader, Arpad Pusztai, questioned the safety of GM foods on a television program. He was soon dismissed from his post and was then subjected to character assassination by other scientists. His experimental methods were criticized by a Royal Society report. International networks of scientists took opposite sides on that issue. Environmental NGOs put his employers and other persecutors symbolically on trial, by attributing their actions to political and commercial motives (Levidow and Carr 2010, pp. 100–102).

When a Swiss lab experiment found that an insecticidal Bt maize harmed a beneficial insect (lacewing), expert authority was put on trial. Criticizing the experiment, other scientists cast doubt on its methodological rigor and its relevance to commercial farming, as grounds to discount the results in the regulatory arena.

In response, agbiotech critics reversed the accusation: they raised similar doubts about the rigor of routine experiments that had supposedly demonstrated safety. Potential harm to nontarget insects remained a high-profile issue, attracting further research and expert disagreements. Citing scientific uncertainties, some regulatory authorities rejected Bt maize or demanded that its cultivation be subject to special monitoring requirements at the commercial stage, thus further testing safety claims and elaborating test protocols (Levidow and Carr 2010, pp. 182–83).

In the latter two risk issues, surprising experimental results were deployed to challenge safety claims, optimistic assumptions, and expert safety advice. When new evidence of risk was criticized for inadequate rigor or relevance to realistic commercial contexts, similar criticisms were raised against safety claims and their methodological basis. Regulatory authorities were put symbolically on trial for failure to develop adequate scientific knowledge for risk assessment, instead depending on companies for test data.

For the safety assessment of GM food, EU regulatory procedures and criteria likewise were put on trial. Under the EU's Novel Food Regulation, for example, GM products could be approved via a simplified procedure in cases where they had substantial equivalence with a non-GM counterpart. After such approval decisions about several foods derived from GM maize, Italy banned them partly on grounds that the decisions had inadequate scientific evidence to demonstrate substantial equivalence. The Commission sought to lift the ban and so requested support from the EU regulatory committee of member states in 2000, thus putting Italy on trial by its peers. But they instead sided with Italy while also criticizing the regulatory shortcut under the Novel Food Regulation.

After this role reversal, the Commission abandoned substantial equivalence as a statutory basis for easier approval of novel foods (EC 2003a). In risk-assessment procedures, substantial equivalence continued as a "comparative assessment"; this was broadened to encompass more methodological issues, scientific uncertainties, and types of scientific evidence (Levidow et al. 2007). Such

comparison with conventional products has remained contentious among member states as well as civil society groups.

Globalization Versus Democratic Sovereignty

Given that agbiotech promoters emphasized globalization as an imperative for GM products, critics could portray them as a threat and agent of "globalization." Since the mid-1990s field trials have been meant to demonstrate the agronomic efficacy and safety of GM crops, as well as the diligent responsibility of the authorities in avoiding any environmental harm. However, the fields were turned into theatrical stages for protest. They used an "X" or biohazard symbol to cast agbiotech as pollutants and unknown dangers, thus justifying sabotage as environmental protection. When facing prosecution, activists used the opportunity to put the state symbolically on trial for inadequately evaluating or controlling GM crops, as a failure of responsibility.

Activists appealed to democratic sovereignty when carrying out and defending sabotage actions on field trials. The UK government implied that decisions about GM crops lay elsewhere, beyond its political control; this claim was denounced as an irresponsible, undemocratic surrender to globalization. As a response to deferential regulatory decisions, such as the UK government's above, opponents defended sabotage as democratic accountability. Further to the French example above, in 1998 the WTO approved higher US tariffs against several specialty foods including Roquefort cheese, as compensation for lost exports of US beef. *Paysan* activists attacked McDonalds as a symbol of WTO rules forcing the world to accept hazardous *malbouffe* such as hormone-treated beef and GM food. As defendants in court, *paysans* sought to put "globalization" on trial, represented by the French government as well as biotech companies.

Democratic sovereignty also became an explicit theme in judicial trials and regulatory procedures. When some EU member states explicitly refused to support authorization of any more GM products in 1999 onward, they were demanding precautionary reforms in EU rules and regulatory criteria. At the same time,

this defiance was turned into a public symbol of European sovereignty versus globalization driven by the USA.

Democratic sovereignty became general grounds to justify measures or actions restricting GM products at the national or regional level. By the late 1990s fewer member states were willing to support Commission proposals to approve new GM products. Some signed formal statements that they would refuse to do so. Lacking a qualified majority, in 1999 the EU Council effectively suspended the decision-making procedure for new GM products; this move was widely called the *de facto* moratorium. Meanwhile some member states also banned GM products that had gained EU-wide approval (Levidow et al. 2000).

“Globalization” also framed conflicts over GM labeling. The originator of GM soya, Monsanto, was denounced by various NGOs as a global bully “force-feeding us GM food.” Before the European Commission approved GM soya in 1996, NGOs and some member states demanded mandatory labeling for all GM foods. However, this demand was rejected, with warnings that any such requirement would provoke a WTO case against the EU.

On this basis, the no-labeling policy became vulnerable to attack as globalization undermining consumer choice and democratic sovereignty. Local protests at supermarkets demanded GM labeling and non-GM alternatives, in campaigns linked with Europe-wide consumer and environmentalist groups. By 1998 European retail chains adopted voluntary labeling of their own-brand products with GM ingredients. Companies variously labeled their products as “contains GM” or as “GM-free,” in compliance with different criteria established by EU member states. Meanwhile NGOs carried out surveillance of GM material in food products, some not labeled “GM,” in order to protest against them and to warn consumers.

Together these regulatory inconsistencies and protests potentially destabilized the EU’s internal market for processed food products. So the EU established more comprehensive standard criteria; these went beyond detectability and so

required an audit trail of paper documentation. Eventually EU law required comprehensive GM labeling and traceability of GM material (EC 2003b), encompassing a broader range of products than before.

GM products also faced a commercial boycott. By the late 1990s, all European supermarket chains excluded GM ingredients from their own-brand products, rather than label them as “GM”; some mentioned precaution and/or consumer choice as reasons. By now GM ingredients were relegated to animal feed from two main sources: imported GM soya was still used in some animal feed, though some suppliers advertised “GM-free” meat or poultry. Bt insecticidal maize was (and still is) widely cultivated in Spain, where nearly all maize enters a common supply chain for animal feed.

Eco-efficiency Versus Agro-industrial Hazards

Agbiotech began with a cornucopian promise. With precisely controlled genetic changes, GM crops would provide smart seeds, as eco-efficient tools for sustainably intensifying industrial agriculture. These promises were extended by the “Life Sciences” project, featuring mergers between agrosupply and pharmaceutical companies, in search of synergies between their R&D efforts. Its narrative promised health and environmental benefits as solutions to general societal problems.

Critics turned agbiotech into a symbol of multiple threats (Levidow 1996). Productive efficiency was pejoratively linked with agro-industrial hazards; for example, the epithet “mad soja” drew analogies to the BSE epidemic. Biotech companies were accused of turning consumers into human guinea pigs.

Through politically constituted cultural meanings, agbiotech was put symbolically on trial as an unsustainable, dangerous, misguided path. In France, critics cast agbiotech as *malbouffe* (junk food), as threats to high-quality *produits du terroir*. In Italy GM crops were cast as agro-industrial competition and “uncontrolled genetic contamination,” threatening diverse, local-quality agriculture. Using the term *Agrarfabriken* (factory farm), German critics linked agbiotech with intensive industrial methods, threatening

human health, the environment, and agroecological alternatives. Institutions faced greater pressure to test claims that GM crops would provide agro-environmental improvements as well as safety.

Those informal trials shaped conflicts over regulatory criteria from the mid-1990s onward. When EU procedures initially evaluated GM crops for cultivation purposes, they were deemed safe by accepting the normal hazards of intensive monoculture. This normative stance was portrayed as a scientific judgment while casting any criticism as irrelevant or political. Yet such hazards were being highlighted by critics, framing risks in successively broader ways. Their discourses emphasized three ominous metaphors: “superweeds” leading to a genetic treadmill, thus aggravating the familiar pesticide treadmill; broad-spectrum herbicides inflicting “sterility” upon farmland biodiversity; and pollen flow “contaminating” non-GM crops.

These ominous metaphors expanded the charge sheet of hazards for which GM products were kept on trial. Moreover, these broader hazards would depend on the behavior of agro-industrial operators, which consequently became a focus of prediction, discipline, and testing. Regulatory procedures came under pressure to translate the extra hazards into risk assessments. In its risk assessment for GM herbicide-tolerant oilseed rape, Bayer claimed that farmers would eliminate any resulting herbicide-tolerant weeds and so avoid weed-control problems, but Belgian experts questioned the feasibility of such measures. Citing that advice, the Belgian national authority rejected the proposal to authorize cultivation uses, rather than invite the company to test extra hazards. So a proposal went forward only for food and feed uses, gaining EU approval on that limited basis (EC 2007).

GM herbicide-tolerant crops had been promoted as a means to reduce herbicide usage and thus to protect the environment. But UK critics portrayed more efficient weed control as a hazard: broad-spectrum herbicides could readily extend the “sterility” of greenhouses to the wider countryside, which would be turned into “green concrete.” The UK government was widely criticized

for ignoring the agro-environmental implications. The Environment Ministry eventually took responsibility and funded large-scale field experiments, to simulate and thus predict farmer behavior in spraying herbicides. These trials were meant to facilitate the “managed development” of such crops. But experimental results indicated potentially greater harm from some GM crops than their conventional counterpart. These results led to a regulatory impasse for GM crops that could have been approved by the UK. Through a more precautionary regulatory procedure, agro-industrial efficiency was cast as an environmental threat to be investigated and avoided.

From the UK controversy in particular, the EU system underwent pressure to broaden the potential effects and their causes that warrant evaluation. The de facto EU moratorium led to a revised EC Directive, which broadened risk-assessment criteria to encompass any changes in agricultural management practices, such as in herbicide spraying, as well as indirect and long-term effects (EC 2001). This broader scope potentially accommodated dissent into regulatory procedures, but public and expert debate continuously questioned safety assumptions. Broader accounts of harm meant greater uncertainty about whether GM crops could generate such harm in the agro-food chain, so risk assessments needed to anticipate human practices as well as their environmental effects.

Coproduction of Biotechnologized Nature

Agbiotech had been originally promoted as a “clean technology” enhancing natural properties: through precise genetic changes, GM crops would efficiently use natural resources to combat plant pests and to minimize agrochemical usage, thus developing sustainable agriculture. Such beneficent claims were challenged along several lines: safety versus precaution, eco-efficiency versus agro-industrial hazards, and globalization versus democratic sovereignty. The entire development model – now called “GM food,” or *OGM* in Romance languages or *Gen-Müll* (garbage) in German – was negatively associated with factory

farming, its health hazards, and unsustainable agriculture. The would-be new order was stigmatized as an abnormal, dangerous disorder.

Agbiotech was turned into a symbol, object, and catalyst for multiple overlapping trials. The defendant symbolically on trial was expanded from product safety to biotech companies, their innovation trajectory, regulatory decision-making, expert advisors, and government policy. Europe was told that it had no choice but to accept agbiotech, yet this imperative was turned into a test of democratic accountability for societal choices. In these ways, protest challenged the democratic legitimacy of a biotech-driven development pathway, as well as a European integration model for further commoditizing natural resources and redesigning agriculture accordingly.

Opposition activities criticized, used, and eventually reshaped EU regulations. These were originally meant to marginalize citizens' involvement or to accommodate public concerns, in ways facilitating an internal market for agbiotech products, but instead the regulatory framework itself became more contentious. By the late 1990s agbiotech was being coproduced with representations of biotechnologized nature as suspect, potentially abnormal and warranting continuous surveillance.

Summary

The Introduction posed these questions: How can the conflict be explained? What can be learned from this experience for other new technologies?

Commentators have drawn various lessons, including some dubious ones. For example, "The easiest way for the nanotechnology community to avoid the problems experienced in the deployment of biotechnology is to provide accurate information and encourage critical, informed analyses" (McHugen 2008, p. 51). This attributes the earlier public controversy to a deficit of publicly available information, yet its reliability and accuracy were contested, in a context where greater knowledge generally led to greater opposition.

Another lesson often heard was that the next novel technology could become "another GM" if

the public is not adequately consulted at an early stage. Conversely, it is also said that greater public involvement or deliberation could help to avoid societal conflict over technological innovations. For example, "Given the opportunity to deliberate on such innovations, the public voice can be expected to be measured and moderate" (Gaskell 2008, p. 257).

Each in their own way, those two distinct lessons decontextualize technology from its political-economic agendas. From the 1990s agbiotech conflict, there are less comfortable lessons, namely, that:

- Technology always presupposes a specific form of the socio-natural order, thus preempting other choices of societal future.
- Societal conflict arises from such non-choices.
- Technology, information, and even deliberation cannot remain credibly neutral in relation to those choices.

In sum, Europe was told that it must accept agbiotech, whose design and policy context potentially naturalized a specific future society, as if objectively required. Yet this supposed imperative was turned into a test of democratic accountability for societal choices. Therefore, prospects for avoiding "another GM" controversy – or perhaps for creating one – depend upon how a technological innovation models the socio-natural order and how state bodies attempt to promote that order.

Cross-References

- [Food and Agricultural Trade and National Sovereignty](#)
- [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)
- [Herbicide-Resistant Crops](#)

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European Cuisine: Ethical Considerations

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Synonyms

Cookery; Culinary art; Food culture; Foodways;
Gastronomy

Introduction

First used in English in 1786, the word “cuisine” is a borrowing from French, but ultimately from the Latin verb *coquere*, to cook. In French (and in the other Romance languages), “cuisine” can mean simply “kitchen” as well as the collection of foods and food preparation techniques. A general definition of the word as used in English could be “the shared set of food and food-related traditions having to do with its preparation particular to a given era, region, or ethnic/national group.”

Though all humans are biologically omnivorous and can theoretically eat an astounding variety of foods prepared with a wide range of cooking techniques, in practice, social groups – be they defined by nation, religion, class, or other factors – agree that certain theoretically edible foods are not acceptable as food in certain moments or by certain people. While the term “cuisine” is often used to refer to a more refined

way of cooking available only to those with a higher socioeconomic status (as distinct from the more mundane, everyday cooking of the majority of a group's members), the choices that define a culture's cuisine were and continue to be linked to ethical considerations.

These interlocking concepts can be represented graphically like this: inside of the set of all potentially edible foods, one can put a subset of a particular group's conception of "food": for Moslems, for example, cheese would be inside "food" and pork outside it, whereas for most Chinese, the two would be reversed. Within "food," however, can represent certain culinary traditions as a smaller subset or privileged foodways, cuisine. Ultimately, an even simpler definition would be "the sum of a number of choices that individuals in a group make about what is good to eat, and what is not."

The Neolithic and the Birth of Cuisine

Though there was certainly differentiation between groups, archeological and paleopathological research suggest that humans' hunter-gatherer ancestors likely did not have within-group differences in diet. Except in areas of exceptionally rich flora and fauna (e.g., estuaries), hunter-gatherers had to move frequently in order to follow game and avoid exhausting wild foods on which they relied. This nomadism meant enforced material simplicity: without ceramics and other tools, elaborate meal preparation was impossible. Thus we cannot speak of a "cuisine" before what has been perhaps euphemistically called the "Neolithic Revolution," the advent of agriculture. The same paleopathological studies that show the excellent health and varied diet of pre-Neolithic humans reveal a dramatic decline in the health of the common person thereafter (Diamond 1999). While arguments have been advanced for the fundamental role of cooked food in the development of modern humans (Wrangham 2010), it is difficult to reconstruct to what extent ethical-religious choices affected the Paleolithic human's diet.

Food historian Massimo Montanari argues that it is not simply fire and its application to food that creates cuisine, but rather civilization which invents the boundaries that define it. Montanari, while allowing that fire and cuisine do not always coincide perfectly (e.g., oysters on the raw), nevertheless summarizes the relation between these elements: "fire > cooking > kitchen > cuisine > civilization" (2006). Human society had become, in these early civilizations, remarkably stratified by, among other things, alimentary norms. A farmer's diet was based primarily on cereals, while the higher up the socioeconomic ladder one went, the more varied the fare was, and the more elaborate was the preparation. Jean Bottéro, discussing the cuisine of ancient Mesopotamia, notes that the recipes that have survived would have demanded not only expensive ingredients from the far corners of the empire, but also a trained, literate staff with access to a well-equipped kitchen, something beyond the means of the rural population; he cautions, though, that the agricultural workers perhaps enjoyed more varied fare than one would imagine, being able to draw on wild edibles to flavor their pottages (1985).

This gulf between what the mass of people in the ancient world ate and the foods enjoyed by the aristocratic, military, and commercial elite was not only a distinction based on variety or elaborate preparation, though these elements were fundamental: there was also distinction based on quality. Inhabitants of the Roman empire used a fish-based sauce called *garum* as a condiment. The rich enjoyed the best *garum*, which was the liquid ladled off the mass of macerated, salted fish innards used for production. The middle class used a pressing of what was left over, while the poor had to make do with the remains after pressing. While *garum* was used by the whole society, only the best *garum* was used in Roman patrician households' kitchens (Curtis 1983). Given the preponderance of writers from the upper class, it is hard to determine to what extent the Roman plebeians saw these culinary divisions as an acceptable part of the correct rules of behavior.

Religious and Culinary Boundaries

Dietary norms, both proscriptions and prescriptions, function as outer boundary markers for the range of behavior which was considered ethical; certain foods were either *de rigueur* in certain situations or taboo in others, specifying correct relationships between person and their peers, their god(s), and their rulers. Culinary do's and don'ts, though seemingly arbitrary, had the function of maintaining boundaries between one religious group and another, especially in areas like the eastern Mediterranean where the available foods were the same. By prescribing certain food practices – the use of unleavened bread for the Passover celebration – and proscribing others (like pork), Judaism was able to maintain its religious-cultural integrity in the face of competition from both polytheists and the other two major monotheistic religions, Islam and Christianity. As Rosenberger points out, religious injunctions on eating habits created artificial divisions between the realms of the licit and illicit, the pure and the impure (1999).

This religious delimiting of cuisine was both more important and more difficult as those that followed Islam, Christianity, and Judaism expanded their territorial range. How can one define, for example, “Arab cuisine” when the Arab empire was an extremely heterogeneous one, with dramatic differences in climate (and therefore flora and fauna)? Previous cultural traditions of conquered peoples also formed a substratum of foodways that the new imperial cuisine had to compete with, and ecological and other practical constraints forced compromises on “ethical food.”

Are these culinary boundaries simply arbitrary or do they derive from more basic infrastructural limitations? Materialist anthropologist Marvin Harris saw food taboos and traditions as higher-order manifestations of environmental factors that affected the processes of food production. Discussing the shared Judeo-Islamic prohibition on pork, Harris suggests that it was the result of a very conscious cost-benefit analysis of zootechnical practices in the Middle East (1985). Whereas goats, cows, and sheep were ruminants

and could transform high-cellulose plants into protein (meat and milk), pigs competed with humans for food, and in the deforested Eastern Mediterranean (home of both Islam and Judaism), the pig was not worth raising: to the contrary, it was a threat to a fragile ecosystem. Thus, culinary conventions – the taboo on pork – were simply the tip of the iceberg of ecological problems, a solution to an environmental risk. Whatever the ultimate cause of this taboo, the prohibition on eating swine is not seen as arbitrary, even by those Muslims and Jews who accept the materialist origin but continue to observe it. That even those who ascribe its origin to necessity accept the limitation demonstrates that this culinary proscription is an ethical boundary, one of the many that demarcate the category “cuisine.”

The proscription and prescription of certain foods in Europe were also strongly influenced by medical theory; from the end of the eleventh century until well into the seventeenth, the humoral theories of Galen and Hippocrates dominated thinking about eating. Digestion was seen as a form of cooking, and proper digestion required the maintenance of humoral equilibrium. Hot, dry foods like cured meats had to be balanced with cold, wet foods like fruit. Class was another variable in this medical system: Cuisine was a contested cultural area where the upper class perennially sought to impose an ethical explanation for class-related dietary differences on the lower social orders. Foods that were higher up in the Great Chain of Being (birds of prey, fruit which hung from trees) were not only healthier for those higher up in the social hierarchy, but also more appropriate; “low” foods like beans and tubers were consistent with the more hardy stomachs of peasants (Grieco 1999), and it was quite literally cosmically “right” that they should eat them. Montanari (2010) describes an early seventeenth-century tale by Giulio Cesare Croce, in which a commoner, Bertolodo, switches places with the king. Bertolodo at first enjoys his new-found position and all the rich food that accompanies it, but the inappropriate food ultimately sickens him, and he dies asking his doctors for “a pot of beans and an onion, and

turnips cooked under the ashes.” The message is clear: commoners should stay in their cosmically appointed place, culinarily speaking.

Nationalism and National Cuisines

Nationalism is a product of European thought, and therefore a discussion of national cuisines necessarily begins with Europe. Though there was a mixing of Mediterranean and northern European foodways after the fall of the Roman empire and the migration of the Germanic tribes into southern and western Europe, medieval Europe had a relatively homogenous food culture, barring certain foods that grew only in certain areas, such as rye in the north and grapes in the south (Montanari 1999). Spices, integral to the cuisine of the elite and used in amounts that would nauseate the modern diner, were a kind of conspicuous consumption used to show status. Schivelbusch gives the daily allowances of the king of Scotland when visiting Richard I of England: two pounds of pepper and four pounds of cinnamon (1992). The Roman church was an important culinary unifier: both the importance of the liturgical foods like wine, oil, and bread and injunctions about lean versus fat days provided a degree of continuity no matter where one traveled in Europe. This was, like the Muslim-Jewish taboo on pork, the culinary facet of a complex ethical system which included politics (the divine right of kings) and the market (the continuing ban, observed more in breach, on usury). More similar than different, cooking styles in Europe began to diverge from one another between the end of the Middle Ages and the middle of the nineteenth century, reflecting among other things the Catholic church’s rapidly declining role in ethical decisions in Europe.

Among others, Mintz (1996) has argued that national cuisines were necessarily an invention, part of the same process of the invention of nations. Regional cuisines are defined by the ingredients available in a prescribed geographical area prepared in traditional ways. Haute cuisines – and by these Mintz means those available only to the social strata that have the means – are

necessarily national and draw on regional cuisines. A haute cuisine is a complex field that draws on the dishes of a nation’s regions and reveals itself by what it serves, especially ingredients that are out of season or otherwise difficult to come by, by the additional (and often quite elaborate) expert preparation required. This national cuisine depends on an elite to provide the demand for the trained cooks and expensive ingredients that it requires: in France, the site of one of the first codified “haute cuisines,” it was the king and his court that created that demand. This is not to say, however, that because there is income stratification, there will necessarily be distinctions between “common food” and “cuisine.” Goody’s 1982 study of foodways in West Africa shows that, despite the existence of a socioeconomic hierarchy, food choices between businesspeople and day laborers can be almost identical.

The meaning of cuisine, the borders of the culinary territory that it delimits, has changed substantially since the end of World War II. This was partly due to an acceleration of the trend, which begun in the middle of the nineteenth century, whereby the development of large-scale food industries slowed and then reversed the differentiation of cuisines in Europe and around the world (Flandrin 1999). This was not a uniform process, however, as decolonization created new nation-states, whose indigenous ruling elite then “invented” national cuisines, mainly drawing on formerly scorned local foods (Wilk 1999). In Wilk’s example, the high ethical price put on supporting and in effect creating “Belizean cuisine” completely changes the semantic-moral value of indigenous foods. Patriotism (an ethical imperative during decolonization) was equated in Belize with love for one’s country as well as one’s country’s food.

As Priscilla Ferguson reminds us, despite the seeming naturalness of French cuisine as a kind of standard against which other cuisines are judged, it too is the result of culinary traditions being selected as a vehicle for national identity (2004). To paraphrase linguist Max Weinreich, if a language is a dialect with an army, perhaps

a cuisine is cookery with a cookbook. Perhaps far more than anything else, a source of codification and creation of national cuisines has been driven ahead by the printing press, the standardization of languages, and the expansion of the number of people who can then afford books (about cuisine) in these languages. Arjun Appadurai has suggested that the previously inexistent concept of “Indian cuisine” springs from a sudden explosion of “Indian” cookbooks, which appeared in response to a mobile and upwardly mobile middle class in India; this new middle class was eager to both replicate the cooking of its youth and show off high-status regional dishes (1988).

The Refined and the Raw

The post-WWII United States was the avatar of highly processed cuisines. Advanced chemical techniques used space-age technology to make cuisine not out of food but of food constituents: corn went from being an ingredient in soups to a raw material for insulation, batteries, and cosmetics as well as (almost incidentally) cake mixes, chewing gum, and margarine (Pollan 2006). Refined cuisine was based on refined food products, those that were processed, broken down, and recombined. 1968 was the beginning of the current reaction to this modernist cuisine.

Warren Belasco has ably collected all of the threads of ideology that contributed to the counterculture’s attack on “corporate cuisine” (2007). The widespread student revolt of the late 1960s and early 1970s launched a new look at cuisine as well. Critiques of modern cuisine bemoaned the corporate nature of much food production and the consequent artificiality of the product. If the personal was political, nothing could be more of a statement against the establishment than three meals a day eaten “outside of the system.” Belasco describes earnest food revolutionaries focusing on the production phase, seeking out products that were more “natural” and even attempting, during the back-to-the-land movement, to become autarchic. Despite the widespread failure of communal food production by hippies, the counterculture inspired new cuisines

that for the first time rejected ethnic, religious, or national limits for cuisine, but instead tried to define the boundaries of the pure and impure with ethical standards.

While modern vegetarianism began in England in 1847 and vegetarianism has been a way of life for millions of people on the Indian subcontinent for centuries, its spread in the West began with the ethical counterculture revolt. Especially influential was the book *Diet For A Small Planet*, in which Francis Moore Lappé explained that the cause of hunger in the Third World was not a lack of food production, but rather maldistribution (1971). Whereas cattle and pigs, Americans’ two main sources of animal protein, had previously been raised on grass or (in the case of the pigs) food scraps, new concentrated animal feeding operations (CAFOs) were replacing this feed with cereals, mainly mais. Lappé discovered that it took roughly seven pounds of corn to make a pound of meat, an incredible waste of energy and food. For the first time in America, in the 1970s, meat was pushed out of the circle of “cuisine,” for vegetarians, not for religious reasons, but for ethical ones. In a twist on French gourmand Brillat-Savarin’s famous aphorism, it was now possible to say, “Tell me what you *don’t* eat, and I’ll tell you who you are.”

Ecological Cuisine

Many religious dietary laws have ethical components – Halal and Kosher laws insist on swift, painless slaughter of animals – but the new cuisines in the post-1968 world took this even further. The methods of food production were subjected to scrutiny to ensure the well-being not only of animals, but also of the people involved in production. Corporate farming was demonized even as it grew to be a larger and larger share of American food production as family farms declined in number. Whereas new varieties of seeds, combined with fossil fuel-derived pesticides and fertilizers, had been hailed as a revolution in the immediate postwar period (the so-called Green Revolution), organic production gained in popularity with consumers.

Eschewing artificial fertilizers and pesticides, organic producers used ancient techniques for fertility maintenance and pest control (Pollan 2006). While organic cannot be considered a cuisine in the strictest sense – few consumers use only organic foods in their cooking – it was an ideal whose goals were not only better health for the individual (dietetics, as we have seen, has long been part of cuisine) but also for the environment.

An interesting example of how this critique of corporate control of food production and subsequent environmental degradation has been used to delimit cuisine is the punk movement. Whereas French structuralist anthropologist Claude Lévi-Strauss had created a conceptual scheme for food which had three interrelated poles – raw, cooked, and rotten – for comparing cuisines in industrialized and traditional societies (1975), punks' anti-corporate, anti-mainstream stance reinterpreted the meanings of that triad. Raw food (organic, local, even wild) becomes the most civilized, the food for inclusion in their cuisine. "Rotten," here meaning not food gone bad but food that has been thrown out but subsequently "dumpster dived" by punks, is also included in punk cuisine; even "corporate food" can be transformed by time in a dumpster or even by the simple act of being stolen from for-profit supermarkets, especially upscale ones. This radical redefinition of cuisine (what is good to eat and what is not) is a marked break with pre-1968 systems which were based on more clearly defined religious, ethnic, and/or geographical markers (Clark 2004). Punk cuisine, which relies on an abstract ideology of "goodness," can be contrasted with so-called molecular gastronomy, which affirms the primacy of science and supposed natural affinities in food chemistry to determine which combinations of foods are desirable (This 2006).

Another recent redefinition of cuisine is provided by the local (or "locavore") movement. Again starting with a wider, ecological definition of "health" (of the planet as well as of the individual), locavores promote the consumption of food produced within a given geographical area, a "foodshed." Despite critiques of this approach to greater food sustainability – that "local" is not

clearly defined and that transportation is a rather small energy cost in a food's total energetic budget (McWilliams 2010) – the local movement has led to a revaluation of forgotten local varieties and dishes as well as their appearance on menus in restaurants and tourist brochures promoting culinary tourism. This may, however, be yet another attempt to use food to create class distinction: with Wal-Mart making organic food available to the masses, local food (often more expensive) is simply an attempt to make up for the loss of distinction. Thus local becomes simply the most modern method for delimiting class boundaries by placing cuisine out of reach of "the commoners" (Potter 2010). The importance placed on local food seems to be inconsistent with the current enthusiasm for fair trade food products – primarily the former colonial goods like coffee, sugar, and tea – which are by definition from far away.

While haute cuisine – the complicated dishes of the French upper classes – sought social distance with distinction, the often-lauded cuisines of today seem to be more democratic, in keeping with contemporary society's rejection of the reinforcement of class divisions through ethical precepts. Indeed, local food or the *cucina povera* ("peasant fare") in its search for the food that the poor of the past ate seems to be a sort of atonement for centuries of upper-class culinary snobbishness. Careful examinations of these supposed peasant foods reveal, however, that rather than a culinary appeal to ecumenicism, they are often invented tradition and simply a new, more subtle means of distinction. The so-called Mediterranean diet contains foods like extra-virgin olive oil and feta cheese which are too expensive for many to enjoy regularly, and given their Mediterranean origin, pose questions about fossil fuel use in their voyages towards wealthy enthusiasts in East Asia, Australia, and the Americas.

What is correct and just food behavior? This essay has attempted to show that the rules social groups construct and impose on their members regarding foods and eating are often a complex interplay of environmental, socioeconomic, and religious factors. These rules help define "right behavior" for the group's members, thus forming and integral part of that group's ethical system.

An important goal of this entry is to describe the fluidity of these culinary-ethical norms across time and space.

Summary

This entry explores the cultural-material construction and social maintenance of the concept of “cuisine.” It begins with the transition from hunting and gathering and the implications for differentiation between classes and then discusses cuisine in the classical world. Thereafter the entry traces religious proscriptions and their ethical (or materialistic) background, followed by a brief look at cuisine in the medieval period. European (and extra-European) nationalism and the redrawing of cuisines’ boundaries along patriotic lines is the subject of the next section. The modernization of “industrial cuisine” and the ethical revolt against it, one which continues up to today, concludes the essay.

Cross-References

- [American Cuisine, Existence Of](#)
- [Ancestral Cuisine and Cooking Rituals](#)
- [Christianity and Food](#)
- [Corporate Social Responsibility and Food](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Food and Class](#)
- [Food Ethics and Policies](#)
- [Food Waste and Consumer Ethics](#)
- [Islam and Food and Agricultural Ethics](#)
- [Judaism and Food](#)
- [Public Institutional Foodservice](#)
- [Taste, Distaste, and Food](#)
- [Vegetarianism](#)

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Expertise in Agriculture: Scientific and Ethical Issues

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Synonyms

Authority; Credibility; Expertise; Knowledge;
Public trust; Social epistemology

Introduction

Agriculture, like many human enterprises, is a product of many varying overlapping knowledge practices: intensive and perceptive firsthand observations; personal experiences and communal memory; reliance on trusted interpersonal and institutional testimony, given keen discriminating assessment of credibility; and skill knowledge and tacit knowledge of all sorts alongside leading-edge science and engineering in botany and zoology, biochemistry, genetics, nutrition, land management, ecology, and oceanic and atmospheric sciences.

Agriculture, like many human enterprises, is a product of both considerable self-reliance and intellectual interdependence. This rich, complicated balance of epistemic autonomy and dependency in practice raises epistemic and ethical issues concerning the nature of agricultural expertise and, specifically, implications for how claims and renunciations of expert authority affect social relationships and knowledge practices among agronomists, corporations, farmers, and the varied nonexpert publics to whom they provide food, fuels, building materials, and many other products.

An Overview of Epistemologies of Expertise

Expertise can be understood as a kind of epistemic attainment or a kind of social authority.

Accordingly, different analyses of the nature, power, and problems of expertise consider its epistemic and social senses. Epistemologists and many other philosophers tend to emphasize its veritism. For example, in debates on the epistemology of peer disagreement, “expert” is operationalized straightforwardly as someone to whose opinion regarding some proposition in their domain of expertise one should totally defer (Elga 2007) or as someone more talented and informed than relative nonexperts (Weatherston 2007).

Alvin Goldman (2001) defends a veritistic account of expertise that distinguishes *skill* experts, unusually accomplished at certain skills, from *cognitive* or intellectual experts, who have an exemplary quantity or level of propositional knowledge of a domain and propensity to generate new knowledge in that domain. Goldman further distinguishes *reputational* experts, those regarded as experts, from *objective* or genuine experts, those who actually have the expertise whether or not their reputations match. Also noteworthy is his distinction between *weak* and *strong* senses of expertise. Weak cognitive expertise requires extensive knowledge of what Goldman considers secondary questions in a domain of expertise, concerning the existing arguments, theories, evidence, and researcher assessments of evidence which bear on the primary questions of a field. Strong cognitive expertise, then, requires knowledge of both secondary and primary questions. So two practitioners well versed in the state of their field but defending divergent positions on the right answers to the primary questions in their field can both be experts in the weak sense, but at most only one can be an expert in the strong sense. Objective cognitive expertise for Goldman is largely but not entirely a matter of comparison: experts *as* experts must have more true and fewer false beliefs about their domains of expertise than most people do and, further, meet some noncomparative threshold of veritistic attainment. Goldman’s third requirement is a propensity criterion, the capacity or disposition to correctly answer new questions emerging in one’s field by drawing on the skill set and techniques constitutive of expertise. This propensity

involves the ability to successfully apply knowledge of the field (and use data banks, relevant apparatuses, etc.) to address new questions; as such, the propensity criterion would seem to require some skill expertise even for cognitive experts. (Solomon (2009) and Coady (2012) offer critique and variations on Goldman's epistemology of expertise.)

Critics of expertise such as Paul Feyerabend, Steve Fuller, and Raphael Sassower emphasize expertise as a matter of social reputation. For his part, Sassower (1993) associates expertise with postures of certainty and infallibility. The social role of modern scientists as experts is akin to ancient oracles, Sassower says: from their socially privileged position, experts tell the rest of us what to believe, and their lofty position allows the rest of us to believe certainty exists somewhere, and that we at least have indirect access to it. Feyerabend (1999), meanwhile, identifies experts with *specialists* who by their nature inhibit growth of scientific knowledge because they are ideologically wedded to conventional wisdom and so serve to keep unusual views from improving science. Feyerabend prefers generalists, *dilettantes*, who bring novelty or creativity into scientific conversations. (See Selinger (2003) for careful critique of Feyerabend's skepticism toward expertise.) Critics of expertise are also troubled by the privileging of institutionalized science over local or traditional agroecological knowledges, which are rarely accorded social reputations of epistemic authority in global market systems.

Sociologist of science Harry Collins writes extensively on expert/nonexpert relationships and the place of tacit knowledge in scientific expertise. In *The Golem* and *The Golem at Large*, Collins and Pinch (1993) characterize science as a kind of expertise and scientists as "craftspersons, the foremost experts in the ways of the natural world." Their aim is to articulate an alternative to the conception of science as certain knowledge; the portrait of scientists as experts with limited expertise is offered as a middle way between scientist as God and scientist as charlatan. Rather than trying to achieve some junior scientific expertise, Collins and Pinch

advise nonexperts engaging with scientists to cultivate an *expertise of everyday life*, akin to what people use in dealing with other sorts of experts, as when hiring a plumber. Collins continues to explore expertise in collaborative interdisciplinary projects under the umbrella of Studies in Expertise and Experience (SEE). Collins and Evans (2007) are relatively positive about expertise, a stance that finds criticism from scholars such as Jasanoff (2003) and Wynne (2003) less sanguine about expert/nonexpert relations in modern life. Collins proposes *interactional* expertise as a middle epistemic way between that of nonexperts and *contributory* expertise of full practitioners of a domain. Interactional experts can speak the language but not fully play the game; what distinguishes interactional experts and contributory experts are the latter's skills and abilities not captured by the body of propositional knowledge distinctive of the domain, which interactional experts can acquire (Collins 2004). Yet contributory experts' tacit knowledge does not mean epistemic independence. The expertise comes *in the doing* – the performance of essential practices, whether in the laboratory or the field – but it cannot be done without extending epistemic trust. Collins finds that successful acquiring tacit knowledge characteristic of a field requires new practitioners to be socialized into the relevant community of practitioners. The social nature of science means that an expert does not operate without some degree of trust in other experts, whose agreement confirms that one has achieved competency in this expertise. (Selinger and Mix (2004) argue that Collins overemphasizes the importance of linguistic skill: contributory experts do not always describe their expert activities very well, and nonscientists can sometimes make original contributions too.)

The conceptions of expertise in terms of reliability and social authority have been reflected by the role of experts in law. American legal models of expertise take reliability to be an important factor as evidenced by recent US Supreme Court decisions on the admissibility of expert witness testimony. Differentiating expert testimony from other testimony is its status as an

admissible form of hearsay evidence; experts are witnesses who need not be eyewitnesses. Justice Blackmun argues for this, citing reliability. “Unlike an ordinary witness, see Rule 701, an expert is permitted wide latitude to offer opinions, including those not based on firsthand knowledge or observation. See Rules 702 and 703. Presumably, this relaxation of the usual requirement of firsthand knowledge...is premised on an assumption that the expert’s opinion will have a reliable basis in the knowledge and experience of his discipline” (Daubert 1993). Precedents and rules guiding admissible expert testimony in the US court system do not require expert witnesses to be independent of nor confirmed by other experts. *Frye vs. United States* (1923), long the guiding precedent in these matters, deemed admissible expert testimony to be that consistent with those practices generally accepted by the relevant expert community. This changed with *Daubert v. Merrell Dow Pharmaceuticals* (1993), however: the court ruled that *Frye* had been supplanted by legislation establishing Federal Rules of Evidence. According to the court’s interpretation in *Daubert* and subsequently in *Joiner* (1997) and *Kumho* (1999), the Rules admit all expert witness testimony that the trial judge deems to be reliable and relevant to the case at hand. The court allowed that reliability can be gauged by a variety of indicators: methodologies employed, error rates, peer review or journal publication of hypotheses testified to, as well as acceptance by a relevant expert community. (Borenstein (2002), Haack (2005), and Brewer (2006) provide further philosophical discussion of legal expertise.)

Worth special attention in reflecting on agricultural and food ethics is the murky status of moral expertise, of which both professional philosophers and the public tend to be wary. If expertise requires clear social authority, few if any secular figures enjoy unambiguous authority on morality. If the rational response to experts is deference, many are unsettled by such renouncement of moral autonomy. (Singer (1972), Driver (2004), and Archard (2011) offer contrasting arguments on the scope and possibility of ethics expertise.)

Ethical Issues in Agricultural Expertise Ascription

The conceptual slippage among veritistic, reputational, and social-epistemic hybrid accounts of expertise opens space for various ethical issues of respect and recognition concerning agricultural knowledge and practices. Lisa Heldke (2006) argues that, in contemporary urban- and suburban-dominated US American culture, knowing about farming and other rural things is too often conceived as *stupid-making* knowledge. Perversely, a person is taken to be less knowledgeable overall – or less knowledgeable of “what matters” – for knowing about agriculture; correspondingly, ignorance of farming and rural practices may be flaunted as signaling properly organized epistemic priorities. See Berry 2002 and Carr and Kafalas 2009 for further discussions of how rural practices can be dismissively framed as *anti-knowledge*.

Related to the problem of so-called stupid-making knowledge is neglected or devalued knowledge: fields in which the possibility of expertise (as a social or epistemic achievement or both) is not even recognized because the field and its practitioners are socially marginalized. Wynne’s (1989) discussion of Cumbrian sheep farming after the Chernobyl disaster addresses just such an issue. The shepherds were assumed not to count as relevant experts, not because they were especially bad practitioners of their field, but because sheep farming was overlooked as something requiring genuine expertise. Baars (2011) argues for urgency in integrating farmers as experienced innovative practitioners in research projects on organic agriculture. In general, greater recognition of practitioners’ *know-how* as a legitimate form of agricultural knowledge alongside *know-that* expertise can be an ethical corrective for historical devaluation of rural knowledge. Wohlforth (2005) explores how subsistence hunters’ ecological knowledge complements, complicates, and challenges climate scientists’ field work in coastal Alaska. Carolan (2006a, b) argues that Iowa farmers have local knowledge deserving greater voice in the development of sustainable agriculture,

applying the notions of contributory and interactional expertise to extend more credibility to small-scale farmers as marginalized knowers.

Failure to recognize expertise can constitute disrespect toward particular kinds of knowledge practices, but it can also constitute disrespect toward specific marginalized knowers, even in well-recognized fields of expertise. As Karen Jones (2002) aptly puts it, “testifiers who belong to ‘suspect’ social groups and who are bearers of strange tales can thus suffer a double disadvantage [...] being doubly deauthorized as knowers on account of who they are and what they claim to know.” Miranda Fricker (1998, 2007) draws attention to credibility gaps between testifiers’ actual rational authority in a field and the social power that recipients ascribe their testimony in that field. Testifiers enjoying more social power than their knowledge really warrant (perhaps due to accent, comportment, social privilege, or hyperextension of expertise) are said to enjoy *credibility excesses*. By contrast, testifiers whose rational authority warrants greater social power than others grant them (perhaps due to accent, comportment, or negative social stereotypes) suffer *credibility deficits*. In some cases, credibility deficits may be innocent, free of morally culpability, but in circumstances when credibility deficits derive from negative identity-prejudicial stereotypes, Fricker argues, a knower suffers a distinctive kind of wrong, *testimonial injustice*. The agricultural expertise of women is frequently subject to gender-based credibility deficits (cf. Code 1991; Feldman and Welsh 1995; Jewitt 2000). Testimonial injustice may also apply to aforementioned small-scale organic and sustainable farmers (Carolan 2006a; Baars 2011).

Social neglect of marginalized people’s agricultural knowledge can be both disrespectful toward knowers and disadvantageous for (dis)trusting others by impeding social exchange of valuable knowledge. Another form of injustice in knowledge ascription arises when marginalized people’s knowledge is valued, and so appropriated, and yet their expertise continues to be suppressed and ignored. In such cases, marginalized peoples’ knowledge is incredibly beneficial (financially, nutritionally, etc.) for others, yet these

knowers fail to receive the social-epistemic recognition they deserve. Vandana Shiva (1999, 2000) argues against “bio-piracy” as this sort of ethical-epistemic injustice. Traditional agroecological knowledge once wholly ignored or devalued by Western agribusiness is now eagerly taken up, while intellectual credit and socio-ecological context are denied or downplayed. Yet respect means recognition of agricultural practitioners as *knowers*, not just passive sources of agroecological information for expert co-optation.

Finally, one should not ignore ethical implications attendant to the problem of *unwarranted* or *unwanted* expertise ascription. Solomon (2009) explores how public participation in biological research alternately can be understood in terms of stakeholder participation or recognition of neglected lay expertise (see also Jordan et al. 2005). Some knowledgeable individuals and communities reject “expert” titles as misleading or silencing; some practitioners take pretension to expertise to involve claims of certainty, or epistemic independence, or articulated propositional knowledge that they may not ascribe themselves, though they may know quite a lot. Jewitt (2000) cautions against overestimating women’s agroecological expertise in policy analyses of women’s roles in development in rural India, on the grounds that claims of expertise do not actually precipitate their greater epistemic and social empowerment. Regarding the deep divide in contemporary American agriculture between industrial agribusiness and sustainable farming, Thompson (2001) argues against the assimilation of the latter as a specialized variety of the former. Such co-optation might make for savvy agribusiness, but on Thompson’s agrarian philosophy, it would be a genuine loss, not a success in the recognition of sustainable farming as a kind of socially authoritative industrialized agricultural expertise.

Ethical Issues for Agricultural Expertise and Public Trust

Annette Baier (1986) offers a general moral test for healthy trust relationships applicable to

agricultural expert/public relations. Her *expressibility test* holds that “to the extent that what the trusted relies on for the continuance of the trust relation is something which, once realized by the truster, is likely to lead to (increased) abuse of trust, and eventually to destabilization and destruction of the relation, the trust is morally corrupt. . . A trust relationship is morally bad to the extent that either party relies on qualities in the other which would be weakened by the knowledge that the other relies on them” (Baier 1986). Here we might emphasize the potential for expert exploitation given epistemic asymmetry. When experts depend on public lack of expertise in order to promote their favored policies, they fail Baier’s test. When experts rely on public ignorance of the range of expert opinions on a disputed issue or rely on public ignorance of their tenuous credibility among other experts, the attendant public trust is corrupted.

Assessments and assumption of risk raise specific ethical issues for agricultural expertise and public trust. Heather Douglas (2003) argues that scientists (like others) have general moral duties against *recklessness* and *negligence*, both of which involve wrong action in the face of risk to self and others. The moral issue here concerns not the assumption of risk itself, without which science and engineering are impossible, but the *level* of risk and the fact that nonexpert publics are exposed to risk without their awareness or consent. The use of pesticides and herbicides and the planting of transgenic crops (see Lacey 2005) are contexts in which farmers and other agricultural experts must consider the risks and rewards of practices that might affect communities locally, globally, and intergenerationally. Given such extensive vulnerability, experts also must consider whether and how they are socially and morally *authorized* to act on such communities’ behalf.

So public trust and distrust in agribusiness raise serious challenges for agricultural experts. To that end, John Hardwig’s ethics of expertise (1994) can be instructive. Hardwig outlines the problem in terms of ethical guidelines for four groups: individual experts, expert communities, nonexperts relying on experts, and society at

large. The organizing priority is the recognition of epistemic and practical interdependency among experts and between experts and lay publics, remembering that those experts in one field are nonexperts in others. One notable maxim Hardwig identifies for experts is to tell the truth according to one’s professional judgment, even when this is not what one’s employers or others in power may want to hear. Scientists and engineers employed by multinational agribusinesses such as Monsanto or Cargill are likely to face this challenge of ethical expertise in specific and difficult ways. Attendant to this advice is the recognition of our inevitable propensity to rationalize: as such, reflective experts anticipate the temptation to believe and practice what employers and those in power prefer and work to counteract this tendency in themselves and fellow experts.

In doing their part to foster morally healthy public trust among farmers and consumers, agronomists and practitioners, agribusiness, and public, trustworthy agricultural experts offer testimony and do their work in ways that are not only reliable and transparent but also responsive to the fact of societal dependency on agriculture. Even experts are epistemically interdependent, and many farmers’ and other practitioners’ eco-agricultural knowledge fails to be accorded the social reputation of expertise: therefore, trustworthy agricultural experts must also actually recognize, engage, and partner with knowledgeable practitioners across cultures or traditions whose knowledge or credibility as knowers has been neglected. Interactional experts such as government officials and journalists for their part might attend to their duties of fostering public understanding and providing external constraint and validation to expert practitioners. Ethics of agricultural expertise also calls upon nonexpert publics to practice *responsible trust*: to appreciate the uncertainty inherent to actual scientific practice, for example, and not to ascribe expertise in unwarranted or unwanted ways, nor to extend undue deference. (See Shrader-Frechette (2011) on lay responsibilities in (dis)trusting scientists and Kitcher (2003) and Elliott (2011) for further general discussion of the ethics of scientific expertise.)

There is increasing recognition among agricultural and environmental ethicists of the value of nonexpert direct participation in eco-agricultural projects, which foster public understanding as well as public trust. Light (2006), for example, advocates for public-expert collaborations in environmental restoration work: “public participation does not mean that expertise should be abandoned in restorations; it just means that whenever possible, restorations are better when experts guide voluntary restorationists.” Community-supported agriculture and community gardens likewise suggest a potential democratization of agricultural expertise in which agroecological intellectual and material labor is performed (and the fruits of that labor harvested) collaboratively across epistemic and social differences.

Summary

Agriculture is built on many kinds of knowledge and practices: some skill based, some theoretical, some tacit, some explicitly articulated, some recognized as expertise, and others not. Some people who work in agriculture are granted social authority as experts, and others not, due to various more and less justifiable (and ethically defensible) factors, such as lack of sufficient knowledge in the field, credibility gaps, social ignorance of their knowledge, social devaluation of their knowledge, or that “expert” fails to capture their specific agricultural knowledge. Given pervasive social dependence on farmers, agribusiness, and other producers of agricultural knowledge and crops, continued development of ethics of agricultural expertise is a matter of practical importance and certainly one in which people with contributory and interactional expertise of all kinds should have a voice.

Cross-References

- [Agricultural Ethics](#)
- [Agricultural Science and Ethics](#)
- [Community-Supported Agriculture](#)
- [Farmer-Scientist Knowledge Exchange](#)

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Extraterritorial Obligations of States and the Right to Food

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Introduction

Governments have extraterritorial obligations regarding the right to food. In an increasingly globalized world, activities of both state and non-state actors can have impacts well beyond national borders: hence, defining the parameters of extraterritorial obligations as a legal concept has become ever more important. Recent years have seen a growing consensus over the scope and substance of these obligations, including with respect to the right to food.

This contribution will define and discuss the concept of extraterritorial obligations and then apply it to the right to food in particular.

Extraterritorial Obligations of States

Definition and References in International Human Rights Law

Although the universal character of human rights, as well as the requirement of nondiscrimination attached to their realization, has always been clear, states traditionally have viewed their human rights obligations as limited to the people within their territories. This stance has led to a gap within human rights protection, apparent in a number of international processes. In effect, in times of globalization, the enjoyment of rights – especially economic, social, and cultural – is increasingly put at risk by the actions of transnational corporations, as well as of foreign states and intergovernmental organizations. Thus, focusing on the extraterritorial

obligations of states can provide the missing link that will prevent such actors from escaping accountability for their unlawful actions or omissions that have negative impacts on human rights abroad, including those affecting people's access to food and other essential resources.

The extraterritorial obligations that international human rights law places on states require them to take certain actions, and refrain from taking others, either within or beyond their territories, that affect human rights beyond their borders. In addition, states must assist in the realization of human rights globally, through international assistance and cooperation. Thus, state obligations to respect, protect, and fulfill human rights have an extraterritorial dimension (ETO 2011, II 8–9).

Extraterritorial obligations are implied in a number of international human rights instruments. Dating back to the advent of the modern international human rights regime, the extraterritorial nature of state duties were incorporated into the Universal Declaration of Human Rights, which notes in article 22 that “[e]veryone (...) is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.” Subsequently, the International Covenant on Economic, Social and Cultural Rights (ICESCR 1966), a legally binding document, elaborated in article 2 on what such international cooperation entails: “Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.” The need for international cooperation in realizing specific human rights has been stated in other international instruments as well, including the Convention on the Rights of Persons with Disabilities (Art. 32) and the Convention on the Rights of the Child (Art. 4 and 24).

The Maastricht Principles on Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights

Although human rights instruments explicitly mention international cooperation, the normative framework on human rights obligations that apply beyond national borders has been slow to emerge and consolidate. For many years, extraterritorial obligations were poorly developed, in part since they refer to obligations and responsibilities that extend to the sensitive political space situated beyond state boundaries (Langford et al. 2013).

However, as the international community witnessed the substantial impacts of state and non-state actors outside of their (home) territories, increased economic globalization and linkages lent growing importance to developing a more robust understanding of the parameters of extraterritorial obligations. In this context, a network of civil society organizations and academics set up the ETO Consortium with the aim of clarifying the extraterritorial obligations of states, in particular with respect to economic, social, and cultural rights. In September 2011, a group of 40 international law experts adopted a set of principles called the Maastricht Principles on Extraterritorial Obligations of States in the area of Economic, Social and Cultural Rights (ETO 2011).

The Maastricht Principles note that all states “have obligations to respect, protect and fulfill human rights, including civil, cultural, economic, political and social rights, both within their territories and extraterritorially.” They describe two types of extraterritorial obligations: “obligations relating to the acts and omissions of a state, within or beyond its territory, that have effects on the enjoyment of human rights outside of that state’s territory; and (...) obligations of a global character that are set out in the Charter of the United Nations and human rights instruments to take action, separately, and jointly through international cooperation, to realize human rights universally.” These obligations do not mean that states are responsible for the realization of all human rights throughout the world. Rather,

a state has extraterritorial human rights obligations in three situations: (i) when it exercises authority or effective control, regardless of whether such control is exercised in accordance with international law; (ii) when its acts or omissions cause foreseeable effects on the enjoyment of human rights, within or outside its territory; and (iii) when it is capable of exercising decisive influence or of taking measures through its executive, legislative, or judicial branches to realize these rights extraterritorially, in accordance with international law, be it acting separately or jointly (ETO 2011).

Therefore, extraterritoriality applies to the traditional obligations of states to respect, protect, and fulfill human rights. In this context, the obligation to respect requires that states refrain from any policy or action likely to hinder the realization of economic, social, and cultural rights in other countries. The obligation to protect compels states to ensure that third-party actors that are under its control, for example, domestically based transnational corporations, respect human rights abroad. The obligation to protect thus includes the obligation to regulate the behavior of such actors. Finally, states have the obligation to support other countries in their fulfillment of human rights obligations.

The Maastricht Principles are not legally binding and have not been adopted by governments. Yet they highlight a growing consensus that all states have extraterritorial obligations to respect, protect, and fulfill economic, social, and cultural rights (Langford et al. 2013). Since their release, extraterritorial obligations have been referenced in UN Special Procedures reports, such as the Guiding Principles on Extreme Poverty and Human Rights, which were prepared by the UN Special Rapporteur on Extreme Poverty, adopted by the UN Human Rights Council and noted with appreciation in a UN General Assembly resolution. Those guiding principles articulate extraterritorial obligations of international assistance and cooperation, as well as state duties to “prevent and protect against human rights abuse committed by non-state actors, including business enterprises, which they are in a position to regulate. (...)” (ETO 2011).

How Extraterritorial Obligations Apply to the Right to Food

The Right to Food and Extraterritorial Obligations in International Law

The extraterritorial obligations of states apply to the right to food. The right to food is codified in the International Covenant on Economic, Social and Cultural Rights, which also sets forth requirements for international cooperation. Similarly, the Rome Declaration on World Food Security also emphasized that the “multifaceted character of food security” required “concerted national action, and effective international efforts to supplement and reinforce national action” (World Food Summit 1996).

In 1999, the UN Committee on Economic, Social and Cultural Rights explicitly elaborated on this obligation, noting in its General Comment No. 12 on the right to food that “In the spirit of article 56 of the Charter of the United Nations, the specific provisions contained in articles 11, 2.1, and 23 of the Covenant and the Rome Declaration of the World Food Summit, states parties should recognize the essential role of international cooperation and comply with their commitment to take joint and separate action to achieve the full realization of the right to adequate food. In implementing this commitment, states parties should take steps to respect the enjoyment of the right to food in other countries, to protect that right, to facilitate access to food and to provide the necessary aid when required” (Committee on Economic, Social and Cultural Rights 1999).

More recently, a subsidiary body of the Committee on World Food Security drafted Voluntary Guidelines that provide further guidance on how to implement the right to food. The guidelines encourage policies fostering an enabling environment, assistance, and cooperation, and cover international measures, actions, and commitments (FAO, Committee on World Food Security 2005). These guidelines thus stress that programs of aid and technical assistance, as well as trade, finance, and investment policies, need to be aligned with human rights and the right to food.

The Right to Food and its Extraterritorial Dimensions: Illustrations

Illustrations of how extraterritorial obligations of states apply to the right to food abound, ranging from states’ public policies to the activities of private parties.

For example, in order to comply with their obligation to respect the right to food in its extraterritorial dimensions, states should refrain “from food embargoes or similar measures which endanger conditions for food production and access to food in other countries” (Committee on Economic, Social and Cultural Rights 1999, para. 37) and from supporting states that use food as a political tool or that blockade food deliveries for political reasons (*ibidem*). In addition, states should avoid discriminatory practices when providing food aid in foreign states (Skogly 2007, p. 352).

Agricultural subsidies in the North aimed at the structural overproduction and exportation of raw agricultural products to the South may also violate states’ obligations to respect the right to food. Thus, states should establish their policies of subsidies and market access in ways that do not threaten livelihoods of people in other countries, particularly in developing countries where alternative livelihoods for those affected are more limited than in wealthier countries and where systems of social protection are restricted or non-existent (*ibidem*). Examples of harmful policies are the subsidies that were paid by the US government to a restricted number of cotton farms, particularly in the decade following 1995. They caused the world price of cotton to fall sharply, which in turn had negative consequences for West African producer countries, decreasing the market share for small-scale cotton farmers especially in Benin, Burkina Faso, Chad, and Mali. By reducing the income of the small-scale farmers and their national governments, the US subsidies undermined a series of rights, including the right to food, abroad (Skogly 2007, p. 353).

Another instance of potential state failure to respect and protect the right to food extraterritorially is found in transnational land deals, which have increased as countries and investors have sought to expand food and agro-fuels

production abroad. These deals are frequently for large tracts of land on which farmers or others previously relied for food production or access to productive resources. However, without protected land rights, land users may face evictions and loss of access to productive resources, thereby jeopardizing the realization of their right to food. When a foreign government or its related entity undertakes this type of transaction, it may result in the government's failure to respect the right to food in another territory. When these transactions are conducted by private actors, such as agribusinesses or investment companies, the deal may imply the home government's failure to protect the right to food by not regulating such actors appropriately.

One final example relates to financial speculation on food prices by the banking sector, a practice that is potentially harmful to the right to food at the global level. Since around 2005, markets for several agricultural commodities have witnessed rapid price increases and higher volatility, which severely affected the right to food in poor, net food-importing countries. While there are multiple reasons for these market trends, excessive speculation in agricultural commodities derivatives by investors may have significantly contributed to worsen market volatility. States, which already regulate the financial sector, should consider whether their obligation to protect the right to food extraterritorially requires stronger regulations that mitigate commodity price volatility, thereby helping to prevent future global food price crises.

With regard to these different examples, in accordance with Maastricht Principles 19–22, states should refrain from any action that would impede the enjoyment of economic, social, and cultural rights, including by those living outside of their borders. Moreover, the obligation of states to protect human rights includes their duties to regulate non-state actors, as required by Principles 23–27. Thus, they should regulate transnational companies involved in practices such as transnational land acquisitions or leases when they are implemented in ways that violate the human rights of the local communities. Finally, Principles 28–35 request states to create

an environment that enables the fulfillment of human rights, including the right to food, through international cooperation.

Conclusion

In the context of globalization, the traditional view of territorial limitations on state obligations leads to significant gaps in human rights protection. These gaps can affect the enjoyment of the right to food and more generally access of people to essential resources. This is particularly true as challenges have grown, produced by factors such as the weak regulation of transnational corporations; the lack of accountability of intergovernmental organizations, including international financial institutions; the deficient application of human rights law to investment and trade treaties, policies, and disputes; and the insufficient implementation of obligations to protect and fulfill human rights abroad through international cooperation and development assistance (ETO 2011). A few of these obstacles were illustrated above in respect of the right to food, namely, harmful agricultural subsidies, transnational land deals, and financial speculation on agricultural products.

In recent years, increasing attention has been paid to the obligations that states have to protect, respect, and fulfill human rights beyond their own territories. The Maastricht Principles, adopted by a number of international legal experts, present a particularly useful effort to develop the normative content of the extraterritorial nature of human rights obligations, clarifying when extraterritorial obligations arise and what those obligations entail.

Moving forward, the development of direct human rights obligations of non-state actors – such as transnational companies and international organizations – could be further explored as an additional way to address accountability gaps. While the UN “Protect, Respect and Remedy” framework for business and human rights – which has been widely embraced by governments, corporations, and other stakeholders – asserts that businesses have responsibilities to respect human rights,

rather than obligations, there has been increasing consideration of whether businesses also have obligations regarding human rights; indeed, some scholars argue that such obligations already exist. Since corporations and other non-state actors have increasing influence and power, developing corresponding obligations could enhance their accountability, possibly by identifying them as duty-bearers and designing responsibility mechanisms at the international level.

Summary

States have extraterritorial obligations regarding the right to food. States must ensure that any of their acts or omissions, either within or beyond their borders, that may affect the enjoyment of the right to food beyond their own territories, are undertaken in a way that respects or protects that right. In addition, states must act proactively to assist in the progressive realization of the fulfillment of the right to food outside of their own territories.

Cross-References

- [Access to Land and the Right to Food](#)
- [Food Security](#)
- [Right to Food in International Law](#)

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Fair Trade in Food and Agricultural Products

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Synonyms

Development; Food labels; International trade

Introduction

The value, variety, and source of fair trade food and agricultural products have grown significantly over the past few years. In 2010, global retail sales topped \$5.8 billion, a 5-year compound annual growth rate of nearly 30 %. The USA accounted for more than \$21 million in 2011, yet remains relatively underdeveloped compared to key European nations (particularly the UK and Germany). The most commonly sold Fair Trade products at the consumer level are coffee, bananas, and chocolate (or rather cocoa as the primary Fair Trade ingredient), followed by tea, fresh fruit, and cane sugar. Flowers and plants, cotton, wine, and honey have also seen sales growth over recent years. The top source nations in Latin America are Peru, Dominican Republic, Columbia, Honduras, and Mexico, and in Africa Kenya and Ethiopia generate significant sales. This entry introduces the reader to the scope of food Fair Trade and its

documented impact. So informed the reader is encouraged to ask ethical questions about the merits of Fair Trade.

Scope: When, What, and Who?

Producers of raw agricultural imports from the developing “south” are challenged by geography, market structure, and size of operations. They are distant from their mostly developed northern consumers, their products pass through multiple stages of supply chains some with processing and value adding but not all, and generally these producers are small scale though often also horizontally aligned in cooperatives or marketing organizations. Fair Trade takes these three disadvantages and switches them around into advantages; place, exchange, and smallness are celebrated by traceability systems built around the notion of a fair price for farmers.

Under third-party international food quality certification systems that promote fair over free trade, agricultural producers generally receive higher compensation for their goods than if they were to sell them in open markets. Supply chains tend to be shorter (i.e., they involve few exchanges and fewer intermediaries), and consumers who purchase Fair Trade products typically pay more than for conventional substitutes. To be eligible to receive these increased prices, or more correctly assured minimum farm gate prices, agricultural producers in developing nations must adhere to Fair Trade sourcing

standards managed by private third-party certification organizations. The elements of these production and processing criteria and nature of audits operated under these standards vary, based on the type of production, region, and third-party system/certification organization.

The Fairtrade Labelling Organizations International (FLO-I) serves as an umbrella organization for many certifiers, setting minimum standards for members and then owning and managing the marketing of the Fairtrade™ claim which can be used on certified food products at the consumer level. Alternative Fair Trade certification systems exist, some adding on elements other than a fair price such as organic and some choosing other sourcing, supply chain, or processing standards such as requiring cooperative membership, social and environmental criteria, or minimum content levels for multi-ingredient foods. Certain producers may choose to comply with one Fair Trade standard, while others need to adopt several systems (not always harmonized in nature) if they are active in multiple supply chains. Producers can still usually sell products into the conventional channels if prices or other market conditions are preferable. Thus Fair Trade certification acts as a price risk management tool.

Fair Trade USA is the leading third-party certifier in North America and was a member of FLO-I until 2012. Fair Trade USA chose to adopt standards that differ to FLO-I in two key dimensions: the labeling and marketing of multi-ingredient products and inclusion of eligibility into the program for producers not in a cooperative. This strategy raises interesting ethical questions, including is it “better” to provide market opportunities to a larger number of producers, even if the standard is “lower”? and do consumers distinguish between the various levels of Fair Trade claims? Other key third-party certification systems, each based in Europe and including various environmental criteria, are Ecocert and IMO.

Does Fair Trade Make a Difference?

Several case studies, many concentrating on coffee production, have explored the benefits of Fair

Trade on communities and individuals. The most comprehensive review of a Fair Trade system is presented by Nelson and Pound (2009) who assess the impacts of the FLO-I/Fairtrade™ standard. Their literature review of some 33 empirical published case studies suggests producers certified under this standard do receive higher returns and more stable incomes compared to those selling into conventional markets. The authors report strong evidence of social benefits in producing communities too. A lack of quantitative evidence remains about the role of other Fair Trade standards, environmental/sustainability metrics, the impact on hired labor and differences in more diverse production systems (crops and regions).

As with many Corporate Social Responsibility (CSR) efforts by food and retail firms it is important to separate the “promise” from the “practice” and question if a guaranteed minimum price at one point in a supply chain actually changes anything? Indeed, it is fair to ask what behavior is the particular Fair Trade certification system trying to change – consumers, firms, and/or stakeholders? The management of differences between the various Fair Trade standards has not been elevated to a food policy discussion anywhere globally. Thus it is unlikely that significant market distortions or externalities exist (Arnould et al. 2009). Labeling claims of Fair Trade are generally governed like any other – that is they must be “true” but how impactful is not addressed by any government agency.

Ethical Questions

Regional consumer differences in interest, understanding, and willingness to pay a premium price for Fair Trade food appear to exist. This said, it should not be surprising that, like other CSR issues (e.g., organic food), various distinct consumer market segments exist. There is not just one type of Fair Trade customers (Brown 2013). Certain European and North American consumers value Fair Trade products but do not always understand the nuances of the various standards and claims. This leads to further questions surrounding the role of education: who

should inform consumers and other stakeholders about these certification systems?

An important aspect of Fair Trade certification systems is the guaranteed minimum (farm gate) price. How far above a “free” trade (international market) price should this premium lie? How are production, processing, and distribution differences (such as environmental protection, social investments, and market development) “valued” within this pricing model? As Fair Trade certification systems develop to include a greater variety of (multi-ingredient) foods and more hired labor production systems over individual farmers or cooperatives, how does the notion of a living or “fair” wage differ to that of a fair price? Costs of living differ by country, and then within countries living costs differ regionally. How can these nuances be identified and rewarded through a Fair Trade system?

Some critics of Fair Trade suggest more harm than good results from certain systems particularly if money is merely redistributed from other planned charitable giving at an institutional, government or consumer level. The proportion of any consumer price premium returned to the poorest farmers is argued to be too small to be impactful, particularly when compared to the costs of compliance with Fair Trade standards (Griffiths 2012). Questionable political motives may also underlie the targeted development activity embedded within individual Fair Trade certification systems.

Clearly, there are several inherent ethical issues captured within the increasing use and diversity of Fair Trade claims. Caution is recommended in the interpretation of these standards. Transparency should be enhanced else consumers may question the merits of such sourcing certifications and move their dollars or euros on to other causes.

Summary

As the value, variety, and source of food Fair Trade products increase, so a more complex set of ethical questions become more prevalent and pressing. Third-party certification standards offer a range of criteria, use different audit procedures, and have idiosyncratic approaches to market

development. These differences might gain the attention of food policy makers in the future particularly if market share, consumer confusion or political pressure from key stakeholder groups reaches a critical point.

Cross-References

- [Corporate Social Responsibility and Food](#)
- [Food Labeling](#)
- [International Food Quality Standards](#)
- [Private Food Governance](#)

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Farm Management

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Synonyms

Agricultural systems; Farmers' choices

Introduction

Interest in agricultural systems has surged in recent years for the eating public. Bestsellers

like The Omnivore's Dilemma and Food Inc. are household names, and most Americans have considered the meaning of food terms like "organic," "conventional," and "GMOs."

Behind the neatly packaged terms is a complex web of management choices about such details as labor practices, soil fertility, and pest invasion. The set of choices available to a modern farm manager is heavily shaped by government policies and corporate influence, while the specific choices they make are based on his/her resources, skills, climate, land base, economic situation, and social context.

This entry endeavors to paint, with a very broad brush, a picture of the kinds of decisions farm managers face and the larger implications of those choices.

Decisions Faced by Farmers

Managers create systems to control the following primary factors that affect farm success.

Farm Labor: Who Will Do the Farm Work and How?

In the simplest subsistence farming scenario, the caloric yield of the food produced by farm laborers must at least be equal to the caloric output they and their nonworking family members use to live. Specialized economies require that the productivity of farm laborers exceeds the needs of their families such that there is enough leftover yield to feed additional individuals who do not produce food.

A society in which there are some well-fed people who do not work on the farm requires that farm managers maximize the margin between the value put into each hour of farm labor and the corresponding yield per hour worked.

Chattel slavery on American plantations is one extreme example in which farm managers minimized the value spent on each hour of farm labor in order to maintain that margin between expenditures on labor and yield per hours worked. Today, many farm managers pay low wages and avoid legally mandated worker protections by

employing undocumented workers with the same goal in mind.

These examples have clear ethical consequences that must be considered by farm managers, consumers, and policy makers alike. Cheap farm labor is one of two major factors that keep food prices low, allowing for the existence of well-fed members of society who do not engage in the work that feeds them (Mazoyer and Roudart 2006).

The second major factor in maintaining this distance between the value put into each hour of farm labor and the corresponding yield per hour worked is the maximization of yield, a factor that informs the decisions that face farm managers in the categories of soil fertility, pests, climate control, and what to grow as described below.

Fertility: How Will Crops Receive the Nutrients They Need to Grow?

Human beings cannot manufacture their own sustenance but rather must rely on the ability of plants to convert carbon dioxide and water into carbohydrates with the use of light energy.

The photosynthetic process is not only the basis of our diets, whether we eat plants or the meat of animals that eat plants. It also creates the biomass (organic matter) necessary to maintain a soil's capacity to produce food. When farmers harvest crops or graze livestock, they remove both biomass and minerals from the land in order to feed people. They must then make a choice of how to return biomass and minerals to the soil in order to produce successive crops (Mazoyer and Roudart 2006).

While modern farmers tend to choose fertilizers based on available resources, climate, land type, and experience, those choices have larger implications for the food systems and ecosystems they are a part of. The range of strategies for fertilizing soils that is available in modern agriculture includes the following:

- *Manure and Compost* – The nutritional profile of a particular animal waste sample will reflect the food source of that animal. Most livestock manures used in agricultural production contain both macro and micro mineral nutrients as well as diverse organic molecules. Compost is

fully decomposed manure or other biomass and is a very stable form of fertility that is easily tied up in soils (Coleman 1989).

- *Green Manure* – Planting green manures (also called cover crops) adds biomass to the soil and, in the case of legume plantings, can fix nitrogen from the atmosphere. Farmers plant cover crops in between cash crops either temporally or spatially (Coleman 1989).
- *Fallowing* – The “resting” of land between crop productions serves many of the same functions that cover crops do in that the regrowth of vegetation on fallowed land replenishes organic matter in the soil. Slash and burn techniques (Mazoyer and Roudart 2006) as well as Shmita fallowing (Deutscher and Hanau 2012) fall under this category.
- *Manufactured Fertilizers* – The Haber-Bosch process developed after World War II pulls nitrogen out of the atmosphere and concentrates it into shippable, spreadable pellets under high heat and pressure. Other mineral nutrients are processed from ores into soluble forms. These procedures are fossil fuel intensive and rely on industrial factories for their production (Mazoyer and Roudart 2006).
- *Rocks, Bones, and Shells* – Many essential plant minerals can be depleted from agricultural soils over time and may be sourced from elsewhere and reintroduced, either from powdered ores or animal processing by-products (Mazoyer and Roudart 2006).

Solubility of Fertilizers

When fertilizers are lost from a farm ecosystem through leaching, the long-term viability of farm soils is reduced and broad implications are triggered off the farm. Nitrogen and phosphorus pollution can cause eutrophication in surface waters making them inhospitable to many life forms. This is strikingly visible in many lakes in agricultural areas and at the mouth of the Mississippi River (Mazoyer and Roudart 2006).

Green manuring is the most complicated fertility system to manage, yet the organic matter it produces is readily tied up in the soil food web which increases the long-term productivity of soil and reduces the possibility for pollution.

Ammonia fertilizers, on the other hand, are the most soluble and thus provide a quick food source for plants but no long-term fertility to soils while contributing significantly to nitrate pollution. Manure, if applied at the wrong time or excessively, can also run off as nitrate pollution but is more easily tied up in the soil food web than ammonia fertilizers (Coleman 1989).

Economics of Choosing a Fertilizer

There is also the factor of expense and economic relationships to consider. Manure is a by-product of livestock production that is free on farms that raise animals. Compost is also easily produced on farms from available materials. Both manuring and composting reappropriate materials that are already in existence for fertilizers. Green manuring requires the initial purchase or growing of cover crop seed. Manufactured fertilizers are by far the most expensive way to renew fertility on the farm and require the most reliance on annual purchase from the large corporations that produce them (Mazoyer and Roudart 2006).

Fossil Fuel and Carbon Emission Considerations in Fertilizer Choices

The production of manufactured ammonia fertilizer is by far the largest contributor to agricultural fossil fuel use. Transportation of fertilizers across long distances is also a contributor.

Competition: How to Favor Crops over Other Species of Pests, Weeds, and Disease?

Farmers manipulate ecosystems to tip the competitive balance in favor of the plants and animals they hope to harvest. Pests, weeds, and disease are all organisms that attempt to grow in a farm ecosystem and must be minimized by farm managers using the following available strategies:

- *Biological Diversity* – The competition between organisms in an ecosystem can keep any individual pest or disease. Farmers try to increase biological diversity and specifically try to increase the number of predator species who feed on pests by:
 - Planting flowers or hedge rows to create habitat for beneficial insects like parasitic wasps or lady bugs

- Releasing large numbers of predator species
- Aerating soil and adding organic matter to create habitat for beneficial microbes
- Applying foliar sprays that are rich in diverse microbes (Coleman 1989)
- *Climate Control* – Plants and animals are more likely to thrive in the face of competition when their needs for appropriate temperatures and water quantities are met. Farmers use irrigation and grow varieties that are well adapted to their climate to give crops an advantage (Coleman 1989).
- *Chemicals* – Insecticides, herbicides, and fungicides are all methods for coping with unwanted competition. While some chemicals target specific problematic organisms, others, called *broad spectrum* products, affect a wider range of organisms. These may be extracted from plants and microbes or designed from scratch in laboratories (Coleman 1989).
- *Mechanical Means* – Hand removal of pests, hand weeding, hoeing, tractor cultivation, and physical barriers are all examples of mechanical solutions to unwanted organisms (Coleman 1989).
- *Plant and Animal Breeding* – Throughout agricultural history, farmers have selected for varieties that resist local competition. The three common methods for breeding today are:
 - Classical Selection – The best plants from each generation are bred together leading to an improved population. Novel traits may be added from other populations or genetic mutation.
 - Hybridization – Unlike in classical selection, the breeder develops two crop lines and then breeds them to each other before use in normal crop production. This requires greater specialization in breeding and seed distribution infrastructure and generally does not allow for farmers to save their own seeds effectively.
 - Genetic Modification – While other breeding techniques are limited to closely related species, genetic modification allows genes from distantly related organisms, like

plants and bacteria, to be combined in a crop variety. The process can be done in a number of ways, all of which must be done off the farm and are dependent on modern scientific expertise (Capon 1990).

Many of the above strategies conflict with the effectiveness of the others. For example, a farmer using broad spectrum insecticides will reduce biological diversity on his/her farm and may need to increase their use of chemicals each year. Similarly, a farmer who rids his/her fields of weeds through mechanical tillage may find that they continually introduce weed seeds from lower soil horizons while making a perfect seed bed for incoming weeds to germinate, requiring continued tillage.

Not only must farmers balance these potential conflicts when designing systems, they are often asked to consider other implications of their choices. Many chemicals are toxic to workers, compromising their health and requiring attention from the health-care system, and to wild species such as pollinators and birds that have wider implications for other farms and wild ecosystems. The use of fossil fuel powered machines contributes to greenhouse gases. Tillage releases carbon from soil while also freeing up nitrogen and phosphorus rich topsoil to flow into surface waters and cause pollution. Research on the ecosystem effects of GMOs interbreeding with other species is still incomplete.

Climate: How Can Water Availability and Weather Be Influenced to Favor Crops?

Farmers manipulate the water and microclimates on their farm as much as possible to create ideal conditions in which their plants and animals can thrive. Farmers irrigate from wells or water bodies such as rivers and ponds. They extend the length of their seasons using technologies such as greenhouses, barns, watering during late or early frosts, choosing hardy breeds, and mulching.

Crop or Animal Selection: What Should Be Raised on the Farm?

The landscapes of the world are shaped by the decisions farmers make around how to manage

their land. The following factors may affect a farmer's decision of what to raise:

- **Climate** – As discussed above, farm success is largely dependent on how well adapted a crop or animal is to a particular climate. Farmers in the tropics are likely to raise a very different set of plants and animals than those in desert or cold temperate regions due to variation in temperature and rain fall. Certain crops and animals, like cows and corn, are more versatile than others and are thus present in a wider range of climates (Soloman 2005).
- **Slope** – Flat lands are much better suited to annual production of grains and vegetables than steep lands, which are better suited to grazing of perennial grasses or growing of perennial crops, due to risk of erosion (Soloman 2005).
- **Soil Type** – Soil texture (sand, silt, or clay), organic matter content, and nutrient profile are all factors that affect the decision of what to grow (Magdoff and Van Es 2009).
- **Rotation Opportunities** – The range of crops and animals raised on a given farm may be influenced by the ways in which the landscape and markets are conducive to crop rotation (Mohler and Johnson 2009).
- **Available Resources** – Capital, equipment, irrigation, fertilizers, labor, and seed are all examples of resources whose availability or lack of availability will affect a farmer's decision of what to raise (Byczynski 2006).
- **Markets** – If prices of a particular crop are high, farmers may be particularly motivated to grow that crop. Similarly, if the prices of inputs necessary for a particular crop are low, that may also affect a farmer's decision (Byczynski 2006). Agricultural prices are largely related to government policy, subsidies, international trade rules, commodity futures markets, demand set by the food manufacturing industry, and fossil fuel prices (NSAC 2008).
- **Transportation** – Fossil fuel prices and shipping availability impact whether a farmer will grow large quantities of a commodity or specialty crop that will not be used locally (NSAC 2008).
- **Experience, Education, and Skills** – A farmer can only choose a farming system that they have learned. Culture, government extension efforts, and nonprofit education initiatives all affect the sea of choices a farmer has to decide from.
- **Pest, Disease, and Weed Pressure** – Competitor species may limit the range of crops grown on a particular farm.
- **Values** – A farmer's ethical or religious beliefs may affect their decision of what to grow when deciding between plant or animal agriculture, diverse systems or monocultures, or fossil fuel-intensive systems or low input systems.

Off-Farm Dynamics That Affect Farm Decisions

Government Policies

The likelihood of a farmer to make any particular decision is affected by government policies in ways demonstrated by the following examples:

Access to cheap oil is maintained by government support via trade agreements, tax policy, and regulation. Systems that rely on manufactured fertilizers, long-distance food transport, diesel tractors, and heated greenhouses are only viable in a world where oil is inexpensive.

Commodity monocultures are a frequently chosen farm system in the USA, largely due to the subsidies offered by the federal government to corn, soy, and cotton farmers who grow wide acreage.

Public research and extension education has a vast impact on which farming systems are most developed and widely known to farmers.

In the USA, the Farm Bill largely shapes the management decisions farmers end up making. This large piece of legislation affects commodity prices through subsidies and government purchases for food aid, crop insurance availability, conservation incentives, farm credit availability, rural development, research, agroforestry, bio-fuel use, organic agriculture, meat processing, and access to land and education for beginning farmers (NSAC 2008).

Corporate Influence

Most American farmers receive a lot of information from large corporations like Monsanto, ConAgra, and Pioneer about farming systems that rely on the products those companies either sell (like fertilizers, GMO seeds, or chemical sprays) or want to buy (like cheap corn to make processed food).

Agribusiness affects farm management choices through its heavy lobbying efforts over the Farm Bill, patenting, control over research dollars, and marketing campaigns (NSAC 2008).

Culture

Farmers' choices are informed by cultural factors including generational wisdom passed down over time, expectations from community members, values and religious beliefs, and history of land use. There are vast difference between the farm management decisions made on an Amish farm, where tradition and low use of technology are highly emphasized, and those made on a large industrial monoculture farm, where high yields and expensive inputs are preferred.

Targeted Versus Systemic Approaches to Farm Decisions

Targeted Approach

Modern industrial agricultural systems tend to target individual biological problems with a great degree of effectiveness. Examples include the following:

- Chemical insecticide sprays that solve the problem of pest damage
- Monocultures that solve the problem of mechanical inefficiency in polycultures
- Antibiotics that solve the problem of livestock illness
- Tillage that solves the problem of opening up new ground for crop production
- Glyphosate resistance in GMO corn that solves the problem of weed management

In general, these targeted approaches allow for short-term high yields while creating new problems that compromise the potential longevity of the farming systems in which they are used and

impacting the ecosystems and societies they are part of. This dynamic can be seen with the above examples in the following ways:

Chemical insecticide sprays may reduce biodiversity in the farm ecosystem eliminating the checks and balances that pest predators would otherwise provide and requiring an increase in spray schedule and quantities. They may also harm pollinators and wildlife that provide other ecosystem services in the area.

Monocultures tend to reduce biodiversity and thus require management from farmers that might otherwise be provided by ecosystem services in a polyculture.

Antibiotics can cause the microbes they target to evolve resistance, making their long-term use ineffective. They can also have negative effects on the humans that consume them or to wildlife who encounter them through ground water.

Tillage can cause widespread erosion such as in the case of the American dust bowl in the 1920s when deep-rooted grasses were tilled up, exposing fresh top soil to massively destructive winds and causing dust storms that devastated the region and lead to widespread lung disease.

Glyphosate resistance in GMO corn has allowed farmers to spray high dosages of glyphosate (an herbicide) and, in turn, enabled weeds to evolve resistance to the chemical.

Many of the long-term problems with targeted approaches to farm management stem from the fact that they do not work with the nature of evolution which demonstrates that species succeed when they find a niche in which they are not outcompeted by other species *and* benefit from relationships with other species.

Systemic Approaches

Farm managers who choose a more systemic approach to decision making take into account the interplay of different species and parts of the food system. Examples of management choices that take a systemic approach include the cultivation of crop diversity, integration of plants and animals, reduced tillage, cultivation of

wild habitat, cover cropping, and crop rotation (Coleman 1989). These approaches often result in lower annual yields as well, a need for higher labor input per caloric output, and reduced efficiencies compared to that achieved by larger-scale agriculture.

Gender Dynamics in Farm Management

Gender dynamics affect farm management decisions and the involvement of different farmers in those decisions in many ways. Below is a brief introduction to a few of the myriad ways in which this can happen.

Child Care Responsibilities – These have often traditionally fallen to women, limiting their ability to be physically present or fully engaged in farm decisions in some cases and/or shaping their opinions of how the farm should run in some cases. Pregnancy and breastfeeding can limit a woman's physical capacity for farm work for periods of time.

Training and Tools – American women often find it difficult to access training in traditionally male-dominated areas such as carpentry, mechanics, and heavy equipment operation. The tendency in American culture is for girls to have less exposure to tools than boys – sometime setting them up for a lifetime of low-confidence and lesser skills in those areas. Men are sometimes shut out of traditionally female aspects of farm life including family management and customer interface.

Gender Binaries in Farm Management – The cultural separation of women's work and men's work persists on many farms. In some cases, this narrows farmer's capacity for nuanced gender expression.

Discrimination – Women long experienced discrimination in receiving farm credit through government programs (Zeuli and King 1998).

Summary

The primary factors that farm managers control to enhance the success of their farms are labor;

fertility; competition from pests, weeds, and disease; climate; and end products. They do so through some combination of a targeted and systemic approach. Government policy, corporate influence, and culture are larger societal forces that affect the specific decisions made by farm managers. Child care, training, gender binaries, and discrimination are all aspects of the gender dynamics influencing farm management decisions.

Cross-References

- [Agricultural Ethics](#)
- [Agricultural Science and Ethics](#)
- [Agriculture and Ethical Change](#)
- [Agriculture and Finance](#)
- [Biodiversity](#)
- [Farms: Small Versus Large](#)
- [Sustainability of Food Production and Consumption](#)

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Farmer Types and Motivation

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Synonyms

Economic versus noneconomic motives; Farmer attitudes/preferences/goals/reasons/values; Farmer decision making, decision criteria, strategy, rationale; Farmer heterogeneity/diversity; Farmer types/groups/categories; Management styles; Mental framework; Normative assumptions; Perception of constraints and opportunities; Perspectives on agricultural stewardship; Styles of farming; Typology

Introduction

Building on the diversity of agricultural practices and the observation that even under similar conditions, not all farmers make similar choices, farmer types are often used to distinguish between groups (or types) of farmers. A farmer type is usually described through the interrelationships between attributes, e.g., farmers' socioeconomic characteristics, their values, the characteristics of their enterprises, and their biophysical assets. Farmer types are thus a means to make sense of the complex relationships between multiple factors that can influence farmer behavior.

This entry illustrates how typologies have been used in a range of studies, e.g., on how farmer types differ in their motivation to adopt technologies or to implement a voluntary policy measure. But first the notion of typologies is presented and some limitations pointed out.

Of Typologies...

Typologies are well-established analytic tools in the social sciences. They are used to form

concepts, to explore dimensions of these concepts, or to organize explanatory claims. While they can be used to describe diversity, the aim of building typologies is usually to explain a phenomenon, e.g., nonadoption of a technology that seemed promising. They are also used to customize recommendations, e.g., how a policy measure should be designed to increase the likelihood that it will be adopted by the target farmer group.

Every typology is the result of a **grouping process**: a population of farmers is divided into types which are distinct from each other regarding the issue under consideration. The main requirement is to form types so that the farmers within a type are as similar as possible and the differences between the types are as strong as possible. A farmer type is thus a constructed subgroup that is described by a particular combination of the value or expression of the attributes. The attributes used to group farmers are usually based on the researcher's theoretical understanding of the issue of interest (Kluge 2000). These attributes should be linked not only by empirical correlation but by meaningful relationships. The farmer type is then described by the "typical" combination of attributes, e.g., practices and attitudes. Usually, each farmer type is labeled using terms that evoke relevant concepts, e.g., "productivist" and "lifestyler."

A farmer typology is often based on survey **data** which may include quantitative, ordinal, or nominal data, e.g., farm size and farmer characteristics such as gender, age, education, and attitudes. This approach allows the identification of farmer types using statistical methods, such as multivariate analysis and clustering (e.g., Mann and Gairing 2012). However, farmer types may also be built using qualitative data, e.g., from interviews focusing on the farmer's perception and declared strategy (e.g., Fairweather and Keating 1994). Whereas many typologies are constructed by the researcher, there are also participatory approaches to identifying farmer types, often in the form of an iterative process where potential types are built using the multivariate analysis and then refined in discussion with farmers or extension agents (e.g. Girard 2006).

In the latter approach, the goal is not only to capture farm diversity but also to enhance mutual understanding and stimulate collective learning.

...And Their Limitations

Typologies can be useful to establish informative connections between attributes and highlighting how the values of the attributes are similar or different between types. As such they allow identifying differences and pointing out conceptual structures. However, some words of caution are in order. First, as usual, care needs to be taken to clarify to what extent the **correlations** on which a typology is built are linked to causation of the outcome. In other words, to achieve a suitable interpretation, it must be ascertained that the empirical regularities build on meaningful relationships.

Also, identifying and describing a “handful” of farmer types (typically three to five) tend to emphasize differences between types and to imply homogeneity within a type. However, while differentiating between farmer types has clear **heuristic value**, in practice each farmer is in a unique situation. As such it is likely that a number of farmers will display characteristics of several types, making it a challenge to assign him/her to one type. Empirically the problem is solved by either assigning an individual case to the farmer type of which he/she displays most characteristics or creating a separate farmer type for all those cases that cannot unequivocally be classified to any of the farmer types. However, once the empirical problem has been solved and the types look neat, it is easy to downplay the fitting process and highlight the differences between the types. Two forms of reification can thus be distinguished: on the one hand, it should not be (implicitly or explicitly) suggested that the types defined in the study describe types of farmers as they exist in the world. On the other hand, the label assigned to each farmer type should not become a free-standing “explanation,” leading to simplification and stereotyping. In other words, it is important to keep in mind that while typologies are useful as epistemological

devices – i.e., as a means of engaging with a situation so as to better inquire it – they should not be given ontological status.

Finally, typologies are necessarily a snapshot at a **one point in time**, capturing a specific configuration of options, perceptions, and relationships. However, farm strategies and farmer motivations are not static. They are dependent on farmer preferences, which change, e.g., in the course of the life cycle, and on how farmers perceive the opportunities and constraints of the context in which they act. Given that this context is constantly evolving, it is unclear to what extent a typology will hold over time, i.e., whether the identified attributes remain the most salient ones. Indeed, based on a systemic understanding of farming, every change (e.g., in prices, networks, regulations, family labor availability) will change the configuration of the system and thus the “option space” and may well have an impact on how an opportunity is perceived or on the motivation to adopt a specific practice.

Farmer Types and Motivation

Research on farmer types was initiated as a result of the observation that new technologies or practices were not evenly adopted, and the heterogeneity could not satisfactorily be explained by farm structure (e.g., farm size, farm ownership, labor availability, agroecosystem). This challenged the concepts of economically rational choice and technological determinism, thus highlighting **farmer agency**. It increasingly became clear that farmers’ perception of a technology and the degree to which it fit with his/her personal farming aspirations play an important role on whether and how it is adopted. Indeed, even once adopted, a technology is not uniformly implemented, as farmers use it to different ends depending on their individual understanding and preferences (Glenna et al. 2011).

Attention was given to farmer perceptions and farming goals as possible influencing factors, as well as to understanding various reasons for and perceived constraints against adoption. Researchers thus increasingly took into

consideration **motivation**, i.e., attempted to understand how different cognitive frames inform and shape attitudes. The aim was to provide insights into why, when two farmers in seemingly identical situations are confronted with the same opportunity, one farmer elects to pursue it and the other does not.

The interest in farmer types and motivation was initially linked to research on **adoption of new technologies** such as improved seeds, agri-chemicals, machinery, or irrigation. Indeed, in the 1960s and 1970s, the notion of progress built on farmers adopting the technologies developed by researchers; thus, high adoption rates were the prime indicator of progress and success. Since the 1980s research on farmer types is often linked to understanding which type of farmer does (not) adopt environmentally friendly practices, e.g., cover crops to prevent soil erosion or careful management of water in irrigation schemes (Emtage et al. 2006). This topic of research rose in prominence with the advent of policies seeking to induce farmers to implement practices that are publicly desirable, esp. in the context of environmental protection. For example, in the European Union, voluntary **agri-environmental measures** are a key policy instrument within the Common Agricultural Policy. But such policy measures have no impact per se: they are mediated through farmers' perceptions and practices. Thus, understanding farmers' motivations for participation in these voluntary schemes is crucial to understand their effectiveness (Morris and Potter 1995; Riley 2011).

In the context of technology adoption, research was often based on **theories of innovation**. For example, the diffusion of innovation emphasizes the role of information, risk, and the social position of the farmers, distinguishing between "early adopters" and "laggards." Generally, this approach highlights the role of farmers and their predisposition to accept change and to innovate (Morris et al. 2000). A number of studies on technology adoption focus on the perception of **risk and uncertainty** linked with the new technology. Indeed, even if the general properties of a technology are known, the consequences and outcomes for a specific farm can never be certain.

As such the perception of riskiness of a technology, attitudes to risk, and the role of trialing and learning have been shown to play a role in the adoption of a technology (Greiner et al. 2009).

In the context of modernization, i.e., the overall process of intensification, specialization, and mechanization, attention has been given to the process of structural change and strategy adjustment. Here the debate tends to center on the extent to which farmer motivation and strategy can be linked to an approach termed "**productivism**" (Walford 2003; Soini et al. 2012). Farmers following a "productivist" strategy tend to be committed to an intensive, industrially driven, and expansionist agriculture. On the other hand, "post-productivist" (or "multifunctional") farmers are oriented towards extensification and diversification, targeting some of their activities towards the production of public goods, e.g., in the framework of area-based payments. While the discourse regarding productivism versus post-productivism often focuses on structures and practices, these are also understood as an expression of the values and motivations which underlie behavior.

Focusing on the fundamental aspirations linked to farming, which is one of the key determinants for farmers' strategies, a number of studies have focused on farmer types based on the relative importance of farming for **family income**. In this context, farmer types range from those who manage agricultural land as a recreational activity (i.e., "hobby" and "lifestyle" farmers), those who mainly aim to produce food for their family (subsistence farmers), and those for whom farming is a source of income (i.e., part- and full-time farmers). These types are linked to differences in values and objectives, e.g., the relative importance of economic, environmental conservation, and community values. For example, a study by Kuehne et al. (2007) distinguishes between three farmer types: the "lifestyler" who has a strong relationship with the local community and to the land, and may not expect an income from farming; the "custodian" who focuses on the continuation of a (reasonably profitable) family business and

wants to work with family members; and the “investor” who emphasizes economic considerations when making farming decisions. Thus, as in most typologies, economic, environmental, and community values are not mutually exclusive, but rather emphasized to varying degrees.

An approach to avoid reducing farming strategy to economic and technical rationality is to focus on how farmers mediate external pressures and construct a room for maneuver. The “**styles of farming**” approach (van der Ploeg 1993) highlights different farmer types, depending on the extent to which they choose to rely on markets for inputs and to selectively enroll technologies. This approach distinguishes several farmer types by identifying the logic underlying their practices. For example, the “economical farmers” strive to minimize monetary costs, rely on their skill, and maximize labor productivity, whereas “intensive farmers” specialize, mobilize resources through markets, and rely on mechanization. Importantly, the styles of farming are emic types and thus refer to a cultural repertoire and to normative ideas how farming “should” be done. They are also understood as expressions of farmers struggling to realize their own projects and resist external pressures. Indeed, markets and technology are seldom perceived in a neutral manner by farmers, especially since policy and agribusiness endeavor to bend the relations involved to their own particular development projects.

Another application of farmer typologies is explaining the multiple goals of the varying **management styles**, not least because this approach may help to understand their strategic orientation. For example, Fairweather and Keating (1994) describe three types of farmers: firstly, the “dedicated producer” who thrives on farm work, whose goal is to achieve a quality product, who emphasizes planning and financial management and has the goal of being the best farmer possible. Secondly, the “flexible strategist” who sees marketing as a key element in the success of the farm and who looks beyond the farm gate for both effective marketing and pursuing off-farm activities. Thirdly, the “environmentalist” who is most concerned by the environmental impacts farming

may have and values working with family members. The management styles highlight how farmers combine both business and way of life goals in complex and personal ways. They also highlight the diversity of resources that can be mobilized and that can contribute to the resilience of farms in turbulent times.

Regarding the environmental values of farmers, a number of studies have tried to assess its role, especially in the context of the adoption of voluntarily policy measures: do farmers enter a contractual agreement because they seek to increase their income or because it is in accordance with their environmental values? In this context conversion to **organic farming** has been a popular study topic, not least because it is one of the more demanding approaches to environmentally friendly farming. Such studies tend to distinguish between farmers who are “loyal” and “optimizers” (Mann and Gairing 2012) or between “committed” and “pragmatic” farmer types (e.g., Darnhofer et al. 2005). For “committed” or “loyal” farmers, conversion to organic farming was mostly driven by environmental values or health reasons, and they are seen as committed to the principles of organic farming and animal welfare. For “pragmatic” farmers, conversion to organic farming allowed them to implement their goal, e.g., an increased autonomy, the search for a professional challenge, or an increase in their farm income. This goal was enabled by the direct payments or higher prices for organic food, so that economic rationality played an important role in the conversion, rather than adherence to organic principles.

More generally, studies have assessed farmers’ perceptions of their environmental rights and responsibilities, not least given that the public debate increasingly prioritizes amenity provision and the recreation value of rural landscapes. One such study (Davies and Hodge 2007) identifies five notions of agricultural **stewardship**: the “environmentalists,” “Jeffersonians,” “yeomen,” “commodity conservationists,” and “progressives.” The stewardship position of these farmer types ranges from ecocentric, i.e., a respect for nature that is opposed to an exclusively utilitarian approach to the use of living

things, to a concern to maintain an aesthetically appealing countryside and to a robust support for modern farming methods and a rejection of the premise that agriculture is causing environmental damage. Such studies can inform policy makers concerned with the effectiveness of policy measures. Indeed, if the design and communication of regulations take into account how they will be perceived by the target groups, it can increase their acceptance and the legitimacy of controls, thus reducing the monitoring and enforcement costs.

While many studies take a static approach that sees motivations and practices as present-centered issues, other studies attempt to capture the **dynamic nature** of motivations affecting farmer's choices (Farmer-Bowers and Lane 2009). Indeed, adoption of a technology or of a policy measure is most likely the culmination of various interrelated factors and motivations, all of which change over time. This temporal dimension is of particular importance in family farms, where farm continuity and succession play a key role, and thus a long-term perspective is integrated in strategic decisions, shaping farm development pathways. The question then is: how can technologies or policy measures be incorporated into dynamic farm development pathways to enable this continuity (Ingram et al. 2013). Farmers' motivations for ensuring the continuity of the farm are wrapped up with those for ensuring the continuity of their farming values. Thus, adoption or participation decisions are taken in the context of comparing other possible future options and at the same time referencing them to the past, both with respect to what is perceived as possible and as acceptable. Farmer types thus benefit from taking into account that farm strategies emerge in response to a continuously changing context as farmers actively create and exploit opportunities in their desire to sustain and shape the future of the family farm.

Summary

Farmer types aim at explaining differential responses to similar structural circumstances.

Research shows both the influence of extrinsic and intrinsic motivations, e.g., financial rewards, and the satisfaction of personal values, goals, and self-fulfillment. They have also shown the influence of cultural norms, identity, social, and cultural context. As such farmer types highlight the **interplay and mutual influence of internal and external factors** and relationships, recognizing the central role played by farmer agency. Yet, while typologies are a useful way to structure the empirical heterogeneity, it is important to keep in mind that there is a wide diversity within each farmer type. Also, the label chosen for a farmer type tends to highlight one characteristic of the type, which might be getting more prominence than it deserves and might convey a one-dimensional concept, masking both the complexity and the dynamic of farmers' motives.

Research on farmer types is usually situated within the **actor-oriented paradigm**: farmers are not simply seen as passive recipients of intervention, but as active participants who process information and strategize. Thus, typologies build on the assumption that the differential farming patterns that arise are in part the creation of the farmers themselves. Yet, there is a tendency to build farmer types in terms of individual motivations, intentions, and interests. While this might be an improvement compared to studies that build on structural determinism and rational economic choice, the voluntaristic view of decision making tends to give insufficient attention to examining how individual choices are shaped by larger frames of meaning and action, by the distribution of power and resources in the wider context.

Cross-References

- [Agricultural Ethics](#)
- [Agriculture and Environmentalism](#)
- [Conventionalization Hypothesis](#)
- [Corporate Farms](#)
- [Environmental Ethics](#)
- [Farms: Small Versus Large](#)
- [Multifunctional Agriculture](#)

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Farmers' Markets

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Synonyms

Direct marketing; Growers' market; Producers' market

Introduction

It has been observed recently that there is a growing social appetite for the “story” that surrounds food products and the modern food system. Part of this unfolding and evolving story involves a resurgence of interest in foods and farm commodities of local and regional provenance (Feagan 2007). The reasons for this are rehearsed elsewhere in this volume in relation to local food and in an expansive and expanding literature on Alternative Agri-Food Networks. However, it is in this context that there is renewed interest in one long-standing feature of the North American food retail landscape, in particular, the **farmers' market**. While there is much variation in the scale, structure, and organizational details

among and between specific iterations of this form of food marketing, a farmers' market is generally understood to be a regularly recurring market at a fixed geographical location (with or without associated infrastructure) where farmer/producers and consumers engage in direct exchange for agricultural products. The degree to which specific markets hold to this simple formula is a matter of considerable interest and at times consternation, and elements of this tension will be highlighted subsequently.

Though farmers' markets have a long history in North America, mainstream interest in them generally spans on a period of expansion, decline, and revival through the mid-twentieth century and into the current era. In its early incarnations in this period, the role of the farmers' market was basic and seemingly straightforward – to provide a regular venue for local farmers and consumers to congregate and engage in the sale and procurement of food staples. In this sense they were “everyday” places where food producers sold the fruit of their labors to householders in their communities and regions. However, farmers' markets faced a decline following WWII due to the increasing mobility of people, the proliferation of processing and refrigeration technologies, the advent of supermarket chains, and the shifting public sensibilities concerning what constituted “good” food. Over time, the role of farmers' markets in the food landscape became less certain, and many of them were relegated to the economic margins or disappeared completely. Readers wishing more specific details of the rise, fall, and reinvigoration of farmers' markets in America should consult an excellent review by Brown (2002) that traces this evolution.

Over recent decades farmers' markets have been resurgent across North America and have emerged and grown rapidly as a *new* innovation in countries such as Australia and New Zealand. In other “old world” regions too, farmers' markets remain alive and well but now much invigorated through strategic alliances with local and slow food movements and a variety of state-sponsored rural regional development initiatives. The so-called *new generation* farmers' market is an exciting, and at times contested, arena in

which values, beliefs, preferences, and aspirations around farming and food are finding expression market day by market day (Holloway and Kneafsey 2000). In practical terms they serve as an intuitively obvious site for food producers and consumers to find each other – physical spaces in which immediacy and directness can be (re)introduced into transactions around food. For producers, this presents the possibility of capturing greater value from the food product being sold; for consumers, the chance to obtain products with (allegedly) enhanced qualities; and for organizational actors, the chance to operationalize trade in local and quality food on terms that they can dictate and attempt to regulate. A more analytical view sees them not just as a site of economic transactions but also as a venue for negotiated meaning, value, and, perhaps, common purpose in the local food landscape – a space for the expression and development of community. In light of this complexity and nuance, the approach taken in this entry is to rehearse some of the most frequently arising themes, claims, and tensions in relation to contemporary farmers' markets with attention paid to four elements: producer benefits, consumer expectations and experiences, contested authenticity, and community building.

The Farmers' Market as an Economic Space: Producer Motives and Benefits

At or near the top of the list of alleged benefits and opportunities associated with the contemporary farmers' market is the assertion that they represent for some farmers an alternative to the corporatized, vertically integrated, and highly consolidated conventional food supply chain and its associated marketing structures. Indeed, a large body of literature has traced the causes and motivations for producers' migration to alternative commodities, enterprises, and markets. Not surprisingly, these derive strongly from the ongoing structural changes associated with the industrialization of farming and include producer recognition of the environmental consequences of intensive agriculture, poor profitability in the conventional farm sector, loss of autonomy and

control over production and marketing practices (either because of formal or de facto subsumption by agrobusiness), and a strong sense of a deteriorating quality of life as the stresses associated with intensive agriculture find their way inside the farm family. As a consequence of these and other causal factors, growing numbers of farmers in North America and elsewhere have sought out opportunities for change with the intent of at least partially, if not completely, decoupling from the industrial model.

Research on the producer side of the farmers' market scene has found that growers are frequently motivated by perceived economic opportunities (more sales, better prices, etc.) and a greater sense of control in their initial decision to attend, but eventually acknowledge the importance of collaboration and (healthy) competition with fellow vendors. Brown (2002) surveyed the literature on FMs in the United States spanning a 60-year period and summarized certain empirical regularities concerning both farmer/vendors and consumers. Those findings revealed that, in many instances, farmers participating in FMs were more likely to be operating on a comparatively small scale and reporting benefits in terms of reduced transport costs, the ability to deliver food quality and to lay claim to more benign environmental practices. The economic benefits of the markets to farmers themselves relate to comparatively low barriers to entry for farmers, the ability to capture and retain a greater portion of the selling price of goods, and, of course, the market's creation of a fixed (and in some instances fitted out) space for trading that provides easy access to food purchasers.

Beyond producer-direct benefits, a number of studies, particularly in North America, have examined the wider economic impact of farmers' markets in terms of job creation, aggregate agricultural sales, and related multiplier effects in regional economies. While the figures between regions and studies vary widely, the results do indeed show impressive impacts both within and beyond the farm sector in the form of job creation and associated earnings, total farm receipts, and new business start-ups (see, e.g., Brown and Miller 2008). Impacts annually in some US states

such as Iowa are reported to exceed 20 million dollars. Though no one has yet suggested that the days of the supermarket and the vertically integrated commodity sectors are numbered, the economic impact of farmers' markets is real and rising steadily.

Among these wider economic benefits, much recent discussion of the future potential of farmers' markets concerns their ability to act as incubators for new farm and food ventures (Guthrie et al. 2006). Some or all of the following may provide impetus for this effect. First, there are increasing uncertainties and concerns in some quarters for the emergence of the next generation of farmers in North America. In Canada, for example, based on recent national census data, the average age of farmers has risen steadily over recent decades and sat at 54 years of age in 2006. This, together with the fact that recent studies indicate that the majority of farmers today have no clearly developed plans for farm succession, raises questions about the face(s) of farming in the not too distant future. Given the well-documented exodus of youth from rural regions and the long-standing economic struggles of the traditional family farm, historical patterns of predominantly within-family farm succession may be no longer hold. The question then arises, "might farmers' markets and other local food marketing initiatives become a catalyst for a new vision of farming and the food system that supports the entry of new farmers and the (re)emergence of smaller more locally focused farm enterprises?" Second, it is now well recognized that the conventional food system, and indeed many farmers' markets, does not reflect in their food offerings, the expanding ethno-cultural diversity of their community and region. Across North America and presumably elsewhere, there is increasing recognition of the market opportunity presented by ethno-cultural consumers and the new farms and farmers they might support. Farmers' markets are seen as a natural outlet, both economically and socially, for these new types of foods and farmers. Third, many smaller producers, particularly in the livestock sector, currently lament the absence of processing and packaging infrastructure as

much of this capacity is taken up by actors in the industrial food system – either through direct ownership or dominance through volume. It has been speculated that the rise of popularity in farmers' markets, and their associated implications for the viability of small- and medium-scale farms, may also trigger the development of new local food system infrastructure in support of a sustainable alternative farm and food sector (Gillespie et al. 2007; Hinrichs et al. 2004). Given these possibilities, it is not surprising that the farmers' market is now seen as a potential catalyst for positive change on the supply side of the local food equation.

Consumer Expectations (Big and Small): Marketing Quality and Experience

It has been suggested that the growing popularity of local food and venues such as the farmers' market reflect the outcome of both a critical public assessment of the conventional food supply chain and an expanding consciousness of the potential to connect food choices and social values. Some academic literature has invoked the term "the concerned consumer" in reference to what is frequently believed about local food supporters. The assertion is that for at least some shoppers, the farmers' market is an opportunity and a space in which they can pursue (either explicitly or implicitly) high-level goals such as sustainability, equity, social justice, and community. In this sense local food venues such as farmers' markets can be seen as spaces of expression and opposition in a new and emerging *politics* of food. The degree to which this is accurate or evident at specific markets and among shoppers is amenable to friendly debate, but what can safely be said is that an important and recurrent part of the farmers' market narrative (i.e., its story) is that it is different and distinct from the food retailing mainstream – a mainstream that has been accused of being often nonaligned with the social values noted above. Aside from these somewhat philosophical matters, there are a wide variety of other known and well-documented reasons why increasing numbers of people are being

drawn to the farmers' markets. In North America these include the so-called push factors such as the recurrence of well-documented food scares (with associated human health implications), the rejection of genetically modified foods by some food consumers, concerns over the environmental and ethical implications of intensive agriculture, and the decline of the family farm. Included among the most often noted pull factors are the revival of interest in fresh and freshly prepared food over processed commodities, the prospect of personal connection and a sense of belonging, and the lure of conviviality. Taken together, the bases for farmers' market patronage span a wide array of material and symbolic demands and values – many of which hold closely to the alleged tenets of local food systems.

Notwithstanding the high-level concerns and interests above, on any given market day, shoppers will express a far more pragmatic set of expectations, beliefs, and desired benefits regarding farmers' markets in general and their own market in particular. Studies indicate that perceptions of superior quality, freshness, and flavor are paramount with diversity and distinctiveness of product, price competitiveness, and the generally strong presence of organics as additional strong motivating factors (Smithers et al. 2008; Wolf et al. 2005). Beyond the sensory elements of food, consumer surveys at farmers' markets also confirm the importance of consumer confidence with respect to such matters as food safety and traceability and the methods of production. The presence of producers creates opportunity for information exchange on these important questions and creates also the possibility of sharing more general knowledge about food products and the nature of farming. A final, alleged consumer expectation is that they use the opportunity of conversation and clear signage to confirm the geographical provenance of the foods they purchase. While it is clearly believed, and the literature supports, that local *matters*, it has emerged in some studies that the geographical size of *local* varies according to region, season, and commodity and that, on the basis of other trust factors, shoppers may exhibit considerable flexibility in their demands so long as the spirit of local food is observed. Such flexibility can clearly be seen in

the regulations and rules of engagement across jurisdictions and makes for spirited debate and at times tension at specific markets (see comments on Authenticity below)!

Before leaving the topic of consumer wants and expectations, it is important to note briefly one final and increasingly noticeable commodity at the market. In both scholarly writing and at the organizational level in farmers' market organizations, it is well recognized that one of the things being most actively consumed at many farmers' markets is the market experience itself. In this sense it has been suggested that at least some farmers' markets have become commodified – something to be experienced and consumed quite apart from any considerations pertaining to the specifics of farmers and food or the lofty social goals noted earlier (see Miele 2006). This phenomenon is by no means universal but is clearly evident in an increasing number of markets – more so in urban and/or amenity-rich settings than in less affluent locations. For example, Thomas Tiemann (2008) provides a vivid depiction of the famous Pike Place Farmers' Market in Seattle, Washington, where souvenir-seeking tourist shoppers have neither the opportunity nor the inclination to know one another. In a similar vein, some markets in New Zealand have established strong links with wine tourism and the slow food movement as key components of their identity and attraction (Joseph et al. 2013). Indeed, on any given market day, there may be as much trade in cappuccino coffee and freshly shucked oysters as beans and potatoes! For some, such developments do not accord well with their vision of farmers' markets and their place in local food systems; for others this differentiation and distinction is essential. At a minimum, what is apparent is that the contemporary farmers' market is a diverse and multifunctional entity with a range of forms that defy easy or simplistic categorization. The same is true of its patrons.

The Meaning and Management of Authenticity

As the viability and visibility of farmers' markets continues to advance, there have been more

concerted efforts in recent years to manage the brand. Front and center in this effort has been an attempt to frame the concept of authenticity as a core feature of “real” farmers' markets. As an entrepreneurial consideration, there is value in confirming and communicating the alterity of the farmers' market – establishing a difference that makes a difference (Kirwan 2004). From a strategic marketing perspective, the key points in defining alterity are usually (i) the opportunity for direct engagement with producers; (ii) access to local, fresh products in season; (iii) assurance of food quality; and (iv) the ability to partake in the cultural capital attached to the market as a distinctly recognizable community institution. Such criteria are important as they not only form the basis for the constitution and organization of the farmers' market by local managers but also lead to the rules of conduct for vendors.

Recently it has been suggested that the issue of authenticity can be seen from both the “bottom up” and the “top down” and that this distinction helps explain some of the tensions seen at some markets. At the level of daily practice, individual markets navigate a series of issues relating to the simultaneous desires for diversity and regularity of food products, the building of consumer confidence concerning the provenance of food and the identity of the producer, the need to create a climate for business that provides adequate returns for vendor participants and the market itself, and an experience that meets the expectations of consumers. This both permits and even encourages diversity in the characteristics of farmers' markets as individual markets find their own comfort level in the presence of different types of producers and sellers of food – a situation that is welcomed by some and highly problematic for others. From above, it has been suggested that these complexities are too often dismissed in favor of an approach that seeks to impose uniformity as a way of guaranteeing success as a *real* farmers' market. Hence, there is debate in some quarters about whether or not flexibility should or does exist around some of these requirements and whether that flexibility threatens authenticity as a defining quality of

farmers' markets (see, e.g., Smithers and Joseph 2010; Wittman et al. 2012).

Unfortunately the question of authenticity is not merely about semantics. At the level of farmers' market associations and at many individual farmers' markets, one of the most visible flashpoints seems to concern who *is*, and *is not*, a *real* farmer and thus a legitimate vendor with *authentic* local food. The concern in some markets is that the presence of the so-called resellers cheapens the brand and undermines the identity and validity of the entire venture. It is perhaps not surprising then that there have been recent attempts to more stringently define and even regulate authenticity in relation to farmers' markets. Taken to its logical conclusion, the process of defining and verifying authenticity ends with the desire to regulate authenticity through formal certification – and indeed, this has happened in several jurisdictions including the United Kingdom and the Province of Ontario in Canada.

The concept of third party certification is, of course, fraught with complications and consequences of its own (Friedmann and McNair 2008). Inasmuch as certification has the power to confirm which markets are in compliance with requirements and thus “legitimate,” the absence of certification has the potential to imply the opposite. The broad rationale for certification is well established and has been played out in detail in the realm of organic food. Its purpose is to provide assurance to consumers that the food product they are purchasing is what it purports to be – and to protect certified farmer-vendors from the fraudulent actions of competitors who may claim they are something they are not. Yet attention to the politics of certification in the organic farm sector also reveals that some organic farmers, notwithstanding their adherence to the principles and practices of organic (and related) agriculture, have elected to forego formal certification for a wide variety of reasons – sometimes in the conviction that neither they nor their food products require the bestowing of legitimacy from an outside authority whose *authority* they do not accept. It is precisely in this context that reports have emerged of a small number of farmers' markets in Canada and New Zealand

actually braking away from a parent farmers' market organization – the dispute over legitimacy and a claim to the brand (Joseph et al. 2013). The process and protocols of certifying farmers' markets as *real* will make for interesting watching by both analysts and farmers' market actors in the next several years.

The Farmers' Market as a Community-Building Institution

The concept of third places has been invoked recently in relation to farmers' markets (Tiemann 2008). Third places are sites of informal association with opportunities for fellowship and exchange with diverse others. In North America the traditional general store has been seen historically as a third place. In Great Britain the same might be said about *the local* (i.e., the corner pub). More generally farmers' markets are seen as civic spaces. The inference is that they are public sites where community values are defined, shared, and debated and where community is “performed.” They are community institutions with long histories in some regions – very short histories in others. But in both cases, they are a meeting place – places where products, people, and diverse personalities come together. In this sense, the farmers' market is often seen as much as a social phenomenon as it is an economic enterprise. Much international research into consumer experiences at farmers' market has confirmed that shoppers place the opportunity for meeting and associating with vendors and other visitors as being among the most important reasons for their patronage. This stands in sharp contrast to the experience of the grocery store. Indeed, some research has suggested that some shoppers actually place the opportunity for relationship building (often expressed as loyalty to specific vendors) ahead of some of the core authenticity attributes noted above. The term social capital has been invoked to describe this particular facet of the farmers' market experience. It is not that shoppers do not care about local or fresh or spray-free per se, but rather that these food attributes are sometimes taken for

granted (sometimes even set aside) based on the trust accruing from valued relationships with particular vendors. Indeed, a few minutes of casual observation at virtually any farmers' market will be sufficient for most readers to spot these so-called *relations of regard*. Interestingly, they serve as both a strong rationale and a source of complication for ongoing efforts to define and regulate qualities such as authenticity and legitimacy in the actual performance of specific markets across North America and elsewhere. In other words, sometimes relationships trump rules.

The version of community noted above speaks to *communities of place* – local people making connections with each other and, in so doing, building community. In a different vein it might be said that the farmers' market is seen as holding potential for linking various *communities of interest*. Two possibilities are noted but many others exist. It has been suggested that the farmers' market has at least the potential to form common ground for rural and urban interests and values and, by so doing, help alleviate the disconnect that some feel has arisen between these two sectors during the era of industrial agriculture and global food. The prospect of personal interaction between parties and the visible presence of diverse and differentiated food products provide a rare opportunity for eaters to learn about the challenges and realities of farming and growers to hear first-hand consumer perceptions (and perhaps misconceptions) about agriculture. Second, for many people, the farmers' market provides the opportunity to feel part of a wider change in the food system (Gillespie et al. 2007). As noted above, part of the farmers' market story is its differentiation from the conventional food system and its inextricable link to the local food movement. For an increasing number of people, the farmers' market has emerged as a place where consumption needs and personal values coexist comfortably.

Summary

The intention in this entry has been to both summarize and problematize the revival of the

farmers' market as a key element in the growth of local and alternative food systems. They are places of commerce, consumption, community, and at times contestation. For farmers, the revival and now rapid growth of farmers' markets provides the prospect of capturing greater value and developing a different pathway for their enterprise. Consumers are extracting value in the form of food they trust, relationships they value, and the sense of supporting not only a food business but also a food idea – or perhaps more accurately a food ideal. Those on the governance side are working to define principles and guide practice. The contemporary farmers' market is a constructed and complex space where philosophy and practice collide and where specific food choices reflect both values and accommodations. Uncertainties aside, it does seem that the farmers' market has reclaimed a place for itself on the food landscape with a future that will be interesting to watch unfold.

Cross-References

- [Authenticity in Food](#)
- [Food and Place](#)
- [Local and Regional Food Systems](#)

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Farmer-Scientist Knowledge Exchange

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Synonyms

Extension; Farmer knowledge; Knowledge; Knowledge exchange; Learning; Scientific knowledge

Introduction

The last 25 years has seen a paradigm shift in the understanding of the nature of knowledge and how it is exchanged in the agricultural context. A changing backdrop, with the move towards multifunctional land management, persistent environmental problems, and the search for sustainable agricultural approaches, has brought new challenges. At the same time, the research agenda on knowledge has changed as an era of positivism, during which science and scientific experts were given unrivaled authority, were challenged by social studies of science that began to question the superiority of scientific knowledge, and value alternative forms of knowledge such as those held by farmers. Theory and practice of knowledge exchange in agriculture have evolved in line with this, shifting from a linear model of knowledge transfer to a perspective that integrates knowledge from multiple actors through facilitation and participation and emphasizes learning in a social context. The attention paid to knowledge within agricultural research is part of a wider consideration of contested knowledges and expert-lay divides and the democratization of expertise in science and environmental studies. These developments are indicative of wider changes in the rural development, natural resource management, and science in society perspectives and of changes that have taken place in intellectual debates, where postmodern concerns for pluralism have enabled marginalized groups to become stakeholders.

In the agricultural setting, the tensions at the interface between farmers and scientists have been the focus of much scholastic work, with attention given to how the two groups construct issues relating to agriculture (new technologies and sustainable agriculture), conservation, and environmental management and to how they communicate with each other. Farmer-science relations, specifically the *nature* of the knowledge they hold and the *processes* involved in the *exchange of this knowledge*, have provided a useful context for situating these discussions.

Nature of Knowledge

Scientific and Local Knowledge

A range of analysts have explored distinctive ways of knowing the world through elaboration of paired concepts such as codified/tacit knowledge, scientific/local, scientific/indigenous knowledge, expert/lay, and explicit/tacit. Terms such as local or indigenous knowledge have different connotations; however, they all indicate the types of knowledge that culminate through the experience of social groups embedded in specific localities and cultural contexts. Scholars have typically juxtaposed such constructs against Western, scientific, instrumentally rational knowledge (Richards 1985) and extensively debated the epistemological distinctions between them.

Those critiquing scientific knowledge have emphasized its universal, objective, and decontextualized character. It is referred to as codified, expert, formal, standardized, institutionally legitimate, and explicit in that it can be systematized, written, stored, and transferred (Norgaard 1984). Understandings of scientific knowledge have been embedded in a realist-positivist perspective which regards scientific knowledge as produced through a process of reductionism, derived from data verified by independent observers under controlled conditions. According to this perspective, science is viewed as open, systematic, and analytical, advancing by building rigorously on prior achievements. The relationship with participants is regarded as detached, the methods are regarded as value-neutral, cases are treated as representative rather than having intrinsic value, the approach is deductive, and the aim is to develop predictive criteria that provide a basis for universal and context-free generalization.

With respect to knowledge exchange, as discussed below, scientific knowledge is regarded as discrete, tangible, and transferable.

The term 'local knowledge' came from the international development and anthropology literatures. Such knowledge has been described as fundamentally linked to direct experience and the practical, sensuous, and personal skill that

develops with attention to a specific place. Scholars have emphasized the attributes of local knowledge that distinguish it from scientific knowledge, describing it as closed, non-systematic, and holistic rather than analytical and without an overall conceptual framework, advancing on the basis of new experiences, not on the basis of a deductive logic. Where science is regarded as universal, local knowledge is strongly rooted in place, anchored to a particular social group in a particular setting at a particular time. Due to its tacit nature, local knowledge is seen to rely on social processes for knowledge exchange.

Criticism of Scientific Agriculture

Over the last 25 years, criticism of scientific agriculture, in particular focusing on the authority given to scientific knowledge and the neglect of local forms of knowledge, has emerged as a strong force within both developing and developed countries. Scholars point to science's privileged role in the development of agriculture and agricultural policy in Western countries, particularly in the post-war period, as scientists were charged with modernizing agriculture and increasing food production. Critics have argued that there was an assumption of superiority of scientific knowledge developed in controlled research settings over knowledge developed through practice in less controlled settings as on farms. They consider that the status accorded to scientific knowledge, by virtue of its rigor, systemic approach, and rationality, effectively allowed science to stand apart from other knowledge systems and enabled science to be the standard paradigm against which all other forms of knowledge were to be assessed. Philosophical perspectives on science and its dominance come from scholars who argue that science constitutes institutionalized power because scientists impose a system of ordered procedures for the production, regulation, circulation, and operation of statements.

Consequently, scholars argued that non-institutional forms of knowledge, perceived as lacking the rigor, rationality, and logic of science and categorized as backward, primitive, irrational, or parochial, have been ignored,

marginalized, or underrepresented in society as a whole and specifically in agriculture. As such local farmer knowledge in both developing and developed countries was seen as being denied legitimacy. This criticism is aligned to debates about expert and lay knowledge where the deficit model of scientific understanding deems non-scientists ignorant when it comes to scientific and technical matters and where lay knowledge is assessed and judged from the scientific point view. In the environment management context, similarly policy makers are described as using the discourses of certainty and technical expertise to maintain their privileged status as legitimate arbiters of environmental standards (Whatmore 2009).

As part of the criticism of agricultural science, it was argued that, as scientific knowledge and practice were applied in new situations, the complexity which has co-evolved in many areas over long time periods between local agricultural practices and local natural environments was often destroyed (Kloppenburg 1991). Scholars, particularly those from the Wageningen School, have documented this displacement of local knowledge and cultural practices by 'alien' scientific techniques (Long and Long 1992). With this, displacement science was seen as a new form of colonialism, and for some commentators, this imposition of Western scientific knowledge explained why development had become unsustainable. Debate about the disregard for local knowledge was not restricted to developing countries. A seminal study by Wynne (1996) in England documented how, in the aftermath of the Chernobyl nuclear disaster in 1986, scientists ignored local farmers' knowledge in their research in the Cumbrian hills to find out how to protect sheep from radioactive contamination.

The Rise of Local Knowledge

These criticisms and debates heralded a shift in thinking about traditional knowledge. Whereas previously many theorists regarded it as an obstacle to development, today indigenous knowledge is seen as pivotal in sustainable resource use and development predominantly in less industrialized countries. In works such as Richards' *Indigenous*

Agricultural Revolution (1985), researchers have attempted to validate the existence and utility of indigenous knowledge systems. The Farmer First movement launched in 1987, which questioned the scientific "way of knowing" as an appropriate model for future sustainable development and for the extension of democratic principles, was a landmark in this shift towards valuing farmers' knowledge (Chambers et al. 1989) and heralded two decades or more of farmer-centered research and development in international development. Central to this rediscovery of the concept of local knowledge was the continued critical examination of the impacts of orthodox science. The body of work grew documenting farmers' local knowledge of soils, pests, varieties, etc. This work claimed that farmers have an intimate and intuitive knowledge of their farms and a refined understanding of local spatial and temporal processes, gained through years of walking and cultivating the land. This work has also shown that local knowledge is, characteristically, related to use rather than the standardized categorization criteria derived from science.

In the Western world, local knowledges have long been denied a legitimate status. Since the 1990s, however there has been growing interest in farmer knowledge in developed countries fueled by debates about the epistemological distinction between local and scientific knowledge systems, the changing role of farmers and scientists in research and extension, and the need for environmental and social change. In the context of economic crises in agriculture, environmental pollution, agribusiness domination, and concerns about food quality, it was considered that new insights and perspectives which valued alternative knowledge forms were needed. Exponents of this view also agreed that local knowledge, being more ecosystem-sensitive and context-dependent, was more relevant to sustainable practices than decontextualized scientific knowledge. As such the term 'local knowledge' entered the sustainability discourse in developing countries. A number of studies have demonstrated how sustainable knowledge and practice have developed outside of conventional knowledge systems, for example, Kloppenburg's (1991) analysis of rotational grazing in Wisconsin, USA.

The changing attitudes towards, and relevance of, local knowledge are apparent in the increasing number of research, development, and management models that include farmers as active participants and knowledgeable stakeholders. However, as interest has turned to farmers' knowledge as part of resource management and environmental disputes, this has highlighted the contentious nature of the relationship between local and scientific knowledge (Whatmore 2009). Authors have described the way in which farmers draw on context-specific experiential understandings in completing their practices and how these understandings can conflict with, and are negotiated alongside, those understandings embedded within science, with technologies, and with conservation practices (Eshuis and Stuver 2005).

Advocates of farmers' knowledge, however, have been criticized as naive and guilty of distorting and exaggerating its value while neglecting its limitations. Critics warned against mythologizing local knowledge suggesting that it can often be nothing more than a set of improvisational capacities summoned by needs (Molnar et al. 1992). With respect to the argument that local knowledge is sustainable knowledge, critics point to the fact that some indigenous people in fact degrade their own land. Scholars argued that scientific agriculture may be just as capable as local knowledge of finding sustainable solutions. Indigenous knowledge, although still of great value in developing countries, is thought to have no relevance to modern Westernized agriculture where farmers have come to rely heavily on scientific applications in agriculture.

These debates have culminated in an acceptance that it is unhelpful to reduce the discussion to one that distinguishes scientific or local knowledge as the "right" or "wrong" sorts of knowledge and that instead there is a need to understand the processes that bring about integration of different knowledges.

Knowledge Processes

Over recent years the concept of knowledge in the singular has been increasingly challenged by ideas of differentiated, contextualized

knowledges. Debates about the dichotomy between local and scientific knowledge and their respective values have led many researchers to criticize this categorization and argue that conventional distinctions between the two no longer hold. It has been argued that these knowledge forms are fundamentally complementary, that knowledge is composed of blends of all knowledge forms, and that it is heterogeneously constituted (Long and Long 1992). Equally others have suggested caution should be exercised in the use of prefixes such as 'expert' and 'lay' when talking about knowledges as this strengthens the processes keeping them apart.

The distinctiveness of different forms of knowledge has also been challenged within the social sciences where there has been a growing conviction that knowledge is the outcome of social processes. Sociological interpretations of science challenged ideas about the distinctiveness of scientific knowledge, and ideas by Knorr-Cetina (1981) were developed in a number of empirical studies that followed. These have shown that science is socially constructed in a specific location and as such is achieved in much the same way as other kinds of knowledge. As a consequence social scientists have argued that the distinction between universal knowledge and local knowledge is weakened. There has also been support for theoretical criticisms of what has been called the "rise of indigenous knowledge" which argues that the classification into indigenous and Western knowledge fails because there are not only similarities across these categories but also differences within them. This science philosophical approach is called social constructivism and has become a main paradigm from which many social scientists analyze the role of knowledge. However, as with distinguishing forms of knowledge, other academics have argued that it is better to integrate this social-constructivist view with the positivist approach of knowledge development which aims at finding measurable parts of reality to validate knowledge claims.

Given these theoretical and philosophical arguments, many scholars have concluded that it makes much more sense to describe knowledge,

not as a fixed thing, but as fluid and changing, the outcome of a set of processes where social processes are central (Murdoch and Clark 1994; Scoones and Thompson 1994).

Knowledge Exchange

There has been increasing emphasis on the need to find effective ways of exchanging knowledge between farmers/land managers and the many actors they interact with to enhance sustainable agriculture and environmental management. Many different terms are used to describe knowledge exchange processes; these include knowledge sharing, generation, co-production, co-management, transfer, brokerage, storage, exchange, transformation, mobilization, and translation, but knowledge exchange can be simply understood as constituting the processes that generate, share, and/or use knowledge through various methods appropriate to the context, purpose, and participants involved. While early models of knowledge exchange focused on linear processes of knowledge production and consumption, a shift towards more systemic approaches provided frameworks for understanding knowledge exchange as multiple processes operating between multiple actors (Roling 1992).

As with the nature of knowledge, the last 25 years has seen major debate and changes in thinking about the knowledge exchange processes in the agricultural context. This is the main part that has been undertaken within the discipline of agricultural extension, both scholastically and in practice, although contributions have come from a number of other disciplines including environmental management, rural sociology, development studies, and communication science. These have all tended to highlight issues such as legitimacy of different knowledge forms, inequality, and power dynamics, including the effect of relative position or status of those generating and using knowledge.

Knowledge Transfer Models

In the agricultural extension literature, it is possible to document an evolution in theory and practice from persuasive knowledge transfer

approaches to more facilitative human development perspectives (Roling 1992). Theory and methodology have traditionally been predicated on the promotion of technological innovations with a reliance on the top-down, unilinear model of transfer from science to practice (the knowledge transfer model). This notion of a one-way path was developed and adapted by a number of authors, the most pervasive being Roger's (1995) diffusion of innovation theory and the technology transfer (TOT) model which has underpinned the activities of many extension services and development activities. The large literature on adoption of innovations has been reviewed in general (Rogers 2003) and for extension (Black 2000). This knowledge transfer approach is analogous to the technical-rational model of policy development. The knowledge transfer paradigm as the dominant model of knowledge production in conventional agriculture captured the concerns of the so-called productivist era of the 1970s and 1980s in industrialized countries when the focus was on food production (Buttel 2001). However, it has since been found limiting.

Academics from rural sociology within the USA and European schools of international development argued that, because the model was embedded within realist-positivist theoretical view of scientific knowledge (seen as a discrete, tangible entity which can be transferred between actors), it did not accord with new interpretative views of knowledge, as discussed above. They also argued that the unilinear approach failed to represent the many different sources from which knowledge is generated and that it was irrelevant to modern agriculture, which has multiple goals and demands more stakeholder negotiation and agreement. Concerns were raised about equality specifically with reference to the adoption/diffusion model which ignored many of the important social issues such as the unequal distribution of impacts and benefits of the technology, as the service provided by the extension agencies reached, differentially, the better educated and more economically powerful farmers. Those adopting new technologies were seen as 'innovators' and held in

high regard, while those not adopting (and/or rejecting) new technologies were labeled as 'laggards' and viewed disparagingly. This dominating techno-strategic discourse according to critics such as Kloppenburg (1991) assumed that farmers had nothing to contribute; their knowledge and skills were marginalized and discredited. Agricultural extension was seen in these terms as espousing, uncritically, pro-corporate ideology and was criticized as being the handmaiden of the scientific-industrial agribusiness complex in that it accepted that all farming problems could be overcome by the continued application of conventional science. Furthermore, research institutions were also criticized as developing technologies that were not value-neutral and often resulted in creating greater social and economic inequalities. Thus, the knowledge transfer approach to science as the domain of knowledge elites was seen as problematic for the inclusionary ethos of the human development paradigm.

Human Development Approaches

These criticisms have led to the waning of this dominant paradigm in research and theory and to the formulation of human development approaches based on the principles of participation, empowerment, and ownership of the problem. Increasing interest in multifunctional land management – a general challenge to technocracy and scientific superiority – persistent environmental problems, and the need to develop more sustainable agriculture provided the backdrop for this paradigm shift. With human development approaches, the implication was that, given the right conditions, information, mutual interaction, and opportunity, land managers will use their own knowledge and develop their own appropriate solutions to their problems. These approaches view the extension process as facilitation of social learning, a philosophy focusing on participatory processes of social change. They give validity to expert and non-expert forms of knowledge and are thought more likely to lead to adaptive forms of environmental management and longer-lasting or more effective outcomes. Scholars also argue that such approaches are particularly suited to understanding the

transformation towards more sustainable agriculture, a process that they thought to require mutual interaction between actors. The Wageningen School (Roling 1992; Roling and Wagemaker 2000) was central in providing theoretical conceptualizations to underpin these developments and in using systemic approaches (Agricultural Knowledge Systems) as frameworks for understanding the multiple actors and processes of knowledge exchange they were involved in. The human development approach is analogous with theories of negotiated knowledge in the broader field of deliberative governance, whereby intersubjective judgment is regarded as essential to effective decision making. This paradigm shift reflects wider changes in the disciplines of rural and development sociology and rural geography during the 1980s and 1990s where culturalist or subjectivist views emerged in a post-Marxist era to counter the perceived determinism of political economy.

Agricultural research and extension organizations have, to a varying degree, become involved in various human development approaches. Research and development in developing countries embraced participatory methodologies such as the farming systems approach (FSA), participatory rural appraisal (PRA), and participatory technology development (PTD). Chambers et al. (1989) were the early exponents of these participatory approaches. These approaches have been reviewed extensively (see Garforth and Usher 1997; Black 2000). In extension, Farmer Field Schools, where participatory training and hands-on experimentation are a key principle, gained prominence in many developing countries. Scholars and policy makers have also documented a number of cases which exemplify effective facilitation of farmer learning, such as the Australian Landcare initiative and farmer learning groups in the Netherlands.

Although seen as an improvement on the failings of the knowledge transfer model, scholars have voiced a number of criticisms of human development models and methodologies. These have been divided under five main themes (Black 2000): firstly, the lack of a coherent theoretical foundation; secondly, the lack of attention to

issues of legitimacy, accountability, and representation; thirdly, the problems associated with poor participation practices; fourthly, the difficulties and dangers in working with multiple forms of knowledge; and finally, the political dangers inherent in shifting responsibilities from the state to civic society. Issues such as the professional identity of scientists, the skills base and available human resources, and perceptions concerning the validity of research methods have arisen in practice. Most researchers argue that participation involves ensuring the knowledge and views of people that are more equitably incorporated in decisions and consider that this requires managing and reforming the power relationships.

Summary

Today there is recognition that sustainable agriculture, which encompasses balancing agricultural production with elements such as ecosystem protection, the continuing supply of natural resources, and the well-being of rural communities, needs to be supported by diverse knowledge systems which draw on both local and scientific knowledge. In policy circles in industrialized countries, the language and discourse are changing from one of knowledge transfer to one of knowledge exchange which is seen as a key device for achieving change in the agricultural context, particularly where voluntary participation for environmental protection is encouraged. However, issues still remain in effectively implementing knowledge exchange such as how to evaluate the outcome of knowledge exchange activities, how to accommodate different cultures, how to deal with power relationships, and how to develop effective techniques and tools (Fazey 2012).

In agricultural development arenas, the social and political dimensions of knowledge generation and exchange remain the focus of interest but with a move towards improving understanding of knowledge entrepreneurship and marketing, knowledge brokerage, governance and networks and alliances which can reconcile the

needs of scientists and of locals through new forms of equitable collaboration which go beyond what some observe to be the somewhat “tired discourse of participation” (Scoones and Thompson 2009). The debate has moved on from a concentration on the interaction between farmers and technologies/science to incorporate wider perspectives of institutional change. The concept of the Agricultural Innovation Systems is becoming popular as a way of framing the processes of networking and interactive learning among a heterogeneous set of actors, which go beyond knowledge producers and consumers.

Cross-References

► Agricultural Ethics

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Farms: Small Versus Large

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Synonyms

Farms: operations; Large: corporate; Small: hobby

Introduction

The industrialization of agriculture has created a farm structure where a small percentage of large farms account for a large percentage of sales and a large percentage of small farms account for a small percentage of sales. In general, these large farms produce for indirect global commodity markets, while the small farms participate in direct sales markets. In between are the shrinking mid-sized farms that are too small for commodity markets but too large for direct markets. While explained by some scientists as progress and supported by productivist perspectives of agrifood production, the industrialization of agriculture has important negative implications for the quality of life in rural communities in particular and society in general. This entry applies a Sociology of Agriculture conceptual frame to the case of the changing structure of agriculture in the USA to inform discussions regarding ethical dimensions of the industrialization and globalization of the agrifood system. First, the information and data regarding changing farm structure are reviewed. Next, the salient Sociology of Agriculture literature is presented to context and evaluate the data. Finally, a summary is provided.

The Data on Farm Structure and Size

Farm numbers decreased as average farm size increased during the twentieth century. In 1945 there were over 5.8 M farms, with an average size of 195 acres; in 2002 the total was just over 2.1 M farms averaging 441 acres. From 2002 to 2007, the number of farms increased by 75,810, with a stabilization of farm size at 400+ acres. Most of this growth came from an increase in small operations; farms with \$1,000 in sales or less increased by 118,000, while those with more than \$500 K in sales increased by 46,000. The mid-sized operations decreased. US agriculture is characterized by a dual structure whereby a few very large farms have a large percentage of sales and many small farms have a small percentage of sales. In the 2007 Census of Agriculture, the only

farm categories that increased in number were the smallest (less than 2.5 K sales) and the largest (more than \$500 K sales) (USDA 2012).

Total agricultural sales increased significantly from \$200.6B in 2002 to \$297.3B in 2007. Commodity sales are ranked: cattle/calves (20.6 %), corn (13.4 %), poultry/eggs (12.5 %), milk/dairy (10.7 %), soybeans (6.8 %), fruits/nuts/berries (6.3 %), hogs/pigs (6.1 %), nursery/floriculture (5.6 %), asst. fruits/veggies (4.9 %), and others (12.0 %). The largest operations increased their share of production from 2002 to 2007. Farms with more than \$1 M in sales increased their share from 47 % to 59 %. The number of farms that accounted for 75 % of total sales decreased from 144 K to 125 K farms. Using the USDA typology, large family farms (\$250–500 K sales) and very large family farms (greater than \$500 K sales) made up 9 % of farms but accounted for 63 % of sales. The larger the operation, the less likely it engaged in off-farm work and more likely it hired labor and received government commodity payments. These data from the 2007 Census of Agriculture confirm the continuation of a trend toward more small and very large farms and fewer mid-sized farms (USDA 2012).

The steady decline in the number of small farms stabilized in the 1992 Census. In 2007 small farms made up 91 % of farms and accounted for 37 % of sales. All of the increase is at the bottom of the “small farm” category (less than \$10 K sales). At the high end, farms with sales between \$100 K and \$250 K decreased by 7 %. Using the USDA typology, the high percentage of “residential/lifestyle” (36 %) combined with “retirement” (21 %) and “limited resource” (12 %) types of small farms are increasing, but the “farming occupation/lower sales” (11 %) category is decreasing. Keeping in mind the differences in the small farm category, small farms tend to rely on off-farm income, not hire labor, not rely on government commodity payments, but do rely on government transfer payments (such as social security). The higher end in sales are commercial operations, just smaller; the lower end in sales are noncommercial, in that there are usually other forms of income. The groups in the middle

(\$10–100 K) are the most likely to engage in direct sales (USDA 2012).

Direct sales operations tended to be small farms with less than \$250 K sales. The number of direct sales farms increased by 17.2 % to 136,817 farms, but accounted for only \$1.21B in sales (of the total \$297.2B), only 0.4 % to total farm sales. The limited resource, retirement, and residential/lifestyle types accounted for 93.3 % of direct sales. A majority of “new farms” are smaller and also rely on off-farm income. Since the 2002 Census, 291 K new farms started operations. New farms tend to be about ½ as big as national average (201 vs. 418 acres; \$71 K vs. \$135 K in sales). The small and new farmers tend to report that farming is not their primary occupation (USDA 2012).

In summary, the consolidation trend continues as the largest operations gain market share. But there is also growth in the small farm category linked to new farms and direct sales. The mid-sized farms continue to decline in numbers. There also appears to be a stabilization of average farm size.

The Discourse on Farm Structure and Size

Previous to the 1970s, discussions about farm structure and size were couched in a functionalist language that saw the growth of large farms as a natural evolution of economies of scale and a specialized division of labor. The adoption-diffusion framework was embraced uncritically assuming that the implementation of scientific agriculture based on technological innovations improved efficiency and enhanced the quality of life for society. Technologies such as machinery, synthetic fertilizers, and pesticides allowed agriculture to break free of the historical metabolic constraint that limited farm size. As long as animals were the primary source of fertility for crops, farm size and crop specialization were constrained. Synthetic fertilizers, combined with synthetic pesticides, allowed large-scale monoculture and rapid advancement of industrial agriculture and farm size.

Any negative impacts on rural communities were interpreted as creative destruction as simple social systems based on moderate-sized diversified operations evolved into large-scale specialized operations. It was the Land Grant University system's mandate to modernize agriculture by providing public education to the common people and then extending that research and education to farmers. Progressive farmers should adopt the technologies for the benefit of society. Social movement activity and concerns about rural quality of life prompted the US government to pass legislation during the New Deal Era to support family farms with subsidies. Even as agrarian social movements attempted to stem the tide of industrial agriculture, the modernist project was solidifying its institutional agenda in the Land Grants, USDA, agricultural committees in Congress, and commodity organizations. From the industrial perspective, science and industrial agriculture were about to end world hunger and develop all nations.

Although scientific agriculture generated a huge increase in productivity per acre, in the 1970s this productivist paradigm came into question as the unintended consequences and negative externalities of industrial agriculture became apparent. Rural social scientists embraced critical frameworks to interpret the impacts of industrial agriculture on rural America. A Sociology of Agriculture literature was rediscovered and enhanced. First, the ecological crisis of industrial agriculture manifested in the form of ecosystem degradation, particularly the effects of chemical-intensive agriculture. The productivity gains, and associated profits, were subsidized by externalizing costs onto the environment. This crisis generated a literature that addressed the Environmental Question: What is the relationship between industrial agriculture and environmental quality? Political ecology perspectives (Buttel 1987) exposed industrial agriculture as an extractive, chemical-intensive, monoculture system with negative impacts of soil erosion, water quantity and quality degradation, species depletion, and pest resistance. While industrial agriculture increased productivity and lowered food costs, the metabolic rift removed animals as the source

of crop fertility and thereby generated unintended environmental consequences. This research documented that industrial agriculture was unsustainable ecologically.

Second, a Sociology of Agriculture literature emerged in the 1980s around the Agrarian Question (Buttel and Newby 1980). The Agrarian Question asks: What is the relationship between the structure of agriculture and the quality of life in rural communities? The Farm Debt Crisis of the 1980s accelerated the historical trend (noted above with USDA data) of a bifurcation of agriculture into a small percentage of large farms that produce most of the agrifood commodities and a large percentage of small farms that produce a small percentage of the foodstuffs. The mid-sized farms were disappearing. Large farms linked to global commodity chains found themselves on a technology and debt treadmill that forced them to expand acreage to capture decreasing per acre profits, while smaller operations were either forced out of farming or relegated to the margins as hobby farms. Mid-sized family farms survived through super-exploitation of family labor and off-farm income. Rural communities made up of mid-sized farms were often decimated in the process of farm consolidation (Magdoff et al. 2000).

As the Agrarian Question gained traction, a political economy of agriculture perspective rediscovered the works of Walter Goldschmidt (1947) on the relationship between farm structure and community quality of life. Those studies revealed that middle-class, family-farm systems of agriculture contributed to a higher community quality of life than industrial systems based on absentee ownership and hired labor. The Goldschmidt findings were supported by recent research (Lobao 1990; Lyson 2004). During this time the works of Aldo Leopold and Wendell Berry provided an alternative philosophical position grounded in Jeffersonian Agrarianism. While many in the agricultural community, such as agricultural economists at the Land Grant Universities, the commodity associations, and the USDA, continued to support industrial agriculture, the legitimation crisis was building as

farmers and environmental organizations criticized industrial agriculture as unsustainable.

Guided by the Agrarian Question, rural social scientists investigated the impacts of farm size and structure on rural quality of life. While one has to be careful not to conflate size and scale, they are often related. Farm structure refers to the ownership pattern in agriculture. For example, is the structure based on independent producers (family farmers), contract farmers (such as in poultry or hogs), or corporate farms (separation of ownership and management/labor)? As noted above, following Goldschmidt and others, a middle-class, family-farm-based system of agriculture made up of independent producers supports rural quality of life. Contract farming is seen as an intermediary step toward a corporate structure, where integrators control the labor process without direct ownership. Family-farm systems of agriculture create a more vibrant community system that generates social capital, community attachment, and socioeconomic development. As agriculture moves from an independent to a corporate structure, there is a weakening of community attachment and a transfer of wealth from the producer to the corporate shareholder, decreasing the quality of life in rural areas. Additionally, farm structure includes the relationship between the farm operation and the input and output markets. Agribusiness vertical and horizontal integration accelerated in the 1980s leading to input and processing oligopolies. Farmers were increasingly at an economic disadvantage as they bought from and sold to concentrated markets (Heffernan 2000). The ecological metabolic rift made possible by industrial agriculture also generated negative impacts on rural social well-being.

Farm size, as measured by gross sales, intersects with structure as the larger operations sell a few undifferentiated commodities in indirect markets in the global agrifood system. Many of these operations are family-owned but are incorporated due to their large size (USDA typology: large and very large family farms). These large operations, both family-based operations and corporate, are linked to agrifood TNCs through

commodity chains, increasingly “driven” by large retailers such as Walmart and McDonald’s. With the increasing globalization of the agrifood system, these operations compete as lowest-cost producers in global commodity chains and again find themselves caught between powerful input (fertilizer, pesticides, and seed) suppliers and processing corporations (wheat, soybean, corn, meat) such as ADM, Cargill, JBS, Monsanto, and Tyson (Magdoff et al. 2000). A caveat is needed here. Not all large farms are large in size of acreage. Fresh fruit and vegetable operations can be small in size but large in sales and still tend to produce for commodity markets. Furthermore, these operations rely heavily on farm labor, often undocumented, which returns us to negative community impacts of the Goldschmidt findings.

The legitimization crisis associated with negative impacts of industrial agriculture also reached consumers. The Food Question asks: What is the relationship between industrial agriculture and the quality of the food we eat? Consumers and producers are concerned about the poor quality of the highly processed industrial food. Concerns about animal welfare, pesticide contamination, antibiotics overuse, *E. coli* and salmonella, and an “empty calories” diet generated a demand for healthier food, referred to as the “quality turn” in agrifood studies. Consumers want scientifically grown food, but want it grown reflexively, with more concern for the ecological, social, and economic impacts. The fact that sustainable agriculture is discussed in the mainstream validates the crisis of industrial agriculture (Allen 2005). This body of research documented that industrial agriculture was unsustainable socially.

Small farms became the site to produce this healthier food. Beginning with the organic movement, small agro-ecological producers became linked to political consumers and began to build an alternative agrifood system (Guthman 2004). This alternative agrifood movement expanded to include community-supported agriculture (CSA), Slow Food, farmers markets, Chef’s Collaboration, fair trade, farm to institution, agritourism, and Agriculture of the Middle (Morgan et al. 2006; Hinrichs and Lyson 2009). Small farms tend to operate in direct-sale value chains

that support social capital and retain more wealth in the community.

Some explanation is necessary. Commodity chain analysis (Gereffi and Korzeniewicz 1994) identifies which actors along the supply chain generate value and drive the chain. Those actors who drive the chain tend to capture a disproportionate share of the value along the chain. For example, undifferentiated commodity chains, such as number 2 yellow corn, include thousands of producers and a few large input suppliers and processing firms. Most of the value in the chain is generated by the producers through their labor value, but because the corporations “drive the chain,” they extract a greater share of the value due to their market power. Commodity chain analysis reveals that it can be hazardous for farmers to attach themselves to global commodity chains where they are sourced as low-cost suppliers. As mentioned above, these operations must expand and capture economies of scale to survive in concentrated markets linked to food retailers that increasingly drive the global commodity chains.

Supporters of alternative agrifood systems delink from this commodity system and operate in value chains based on identity preserved and/or direct sales. Value chains return a higher proportion of the value to the producer. Organics provided the ecological basis for this system (Guthman 2004), and fair trade provides the ideological underpinnings (Raynolds et al. 2007). Organics is a value chain where producers are rewarded for ecological production. Fair trade is an attempt to create transparent and cooperative relationships that reveal where the value is generated and apportioned along the chain. It began as a way to link producers in the global South with consumers in the global North and eliminate the corporate middlemen that extracted an unfair share of the value along the commodity chain. Coffee and bananas are early examples of the fair trade initiative. Fair trade repossesses the value that was taken by the corporate drivers of the commodity chains.

Agricultural ethicists have provided a philosophical framing of these dual agrifood systems (Thompson 2010). The industrial

perspective sees agriculture as just another part of industrial society where commodities are produced at the lowest cost; the trend to consolidation is just economies of scale at work to lower cost. This system must be exported to ensure sustainable food production for the world. Landscapes are viewed in terms of the commodities they can produce, and while there are some concerns with labor, community, environment, and animal welfare, these externalities can be addressed. From this view, sustainable equals produce more with less. The agrarian perspective views agriculture as having important social functions beyond efficient commodity production, such as providing ecological services and ecosystem functional integrity. Agriculture should be embedded in the local community, and consolidation negatively impacts the sustainability of local community quality of life. This view includes arguments of fair trade, fair labor, and animal welfare and asserts that a major departure from industrial agriculture is needed because that model is extractive and not sustainable.

Summary

The USDA provides interesting data to engage the Sociology of Agriculture literature. There is a dual agriculture in the USA with a few large farms dominating sales in global markets and numerous small farms expanding direct sales at the local/regional level. These trends are both concerning and encouraging. Industrial agriculture is problematic for many rural communities. Where agriculture is an important component of the economic base of a region, the quality of life in rural America is influenced by the size and structure of agriculture. Farmers and communities linked by agrifood corporations to global commodity chains are in precarious positions where the firms driving those chains can use their market power to extract surplus value along the chain and whipsaw them as lowest-cost producers. Arrangements that benefit the commodity farmers are temporal; vertical and horizontal integration will push toward

economics of scale and lowest-cost producer survival. Corporate quarterly return on investment drives the global commodity chains. Because of its market power and profit logic, it often extracts instead of contributes to wealth in rural communities. The technological focus maintains the productivist approach as the industrial model is diffused globally.

It is encouraging that the beyond organic system of smaller-scale agrifood production has expanded to include thousands of CSAs, multiple food to institution initiatives, an explosion of farmers markets, and a Slow Food movement as part of a local-food resurgence. The USDA data presented above quantifies the growth of small farms and direct sales that support these local and regional agrifood systems. Food policy councils have emerged to provide a governance function to the alternative agrifood movement. The region is the optimal unit of analysis as it is big enough for some economies of scale for Agriculture of the Middle producers and small enough for relationship marketing by smaller producers. Informed by civic agriculture, the optimal model is regional fair trade value chains with governance provided by regional food policy councils. This reflexive form of agrifood production acknowledges the mistakes of the past associated with uncritical adoption of agricultural technologies and attempts to internalize the externalities through the creation of sustainable agriculture (Allen 2005; Beck 1992).

Following the agrarians Leopold, Goldschmidt, and Berry, the erosion of agrarian values accompanied by the ascent of industrial philosophy and declining social well-being has been traced (Thompson 2010). A distancing from the roots of agrarian culture grounded in land, hard work, own boss, and community creates selfishness and decreased quality of life. Industrial values create instrumental over substantive forms of rationality, a focus on maximizing self-interest in econometric relationships with little concern for the public good. To fix the problem, farmers, rural communities, and citizen consumers should delink from the global agrifood system and create sovereign agrifood systems based on agrarian philosophies and civic

agriculture. Building upon civic agriculture (Lyson 2004) as the production model, a “culture of the table” is a place where people can rebuild agrarian values (Borgmann 2006), a place where stories about where the food came from are told slowly and substantively.

Transformative change is needed to make the agrifood system sustainable (National Research Council 2010). Alternative agriculture is the transformative dimension. Re-embedding agriculture in community through local and regional agrifood systems organized as regional fair trade value chains can revitalize parts of rural America. While currently only a tiny fraction of total agrifood production is accounted for by alternative value chains, there is substantial movement in this direction. The small farms expansion in the USA is part of the growing resistance to industrial agriculture, part of the global food sovereignty movement for farmers, consumers, and indigenous peoples (Wittman et al. 2010). The alternative system is diffusing across the USA and the world, and rural social scientists should provide support to the movement. The discourse on sustainability around food security (industrial) and food sovereignty (agrarian) models provides teachable moments. Food sovereignty movements such as Via Campesina are social justice movements. They challenge the neoliberal restructuring of civil society in favor of capital over people (Harvey 2005). The fourth question in agrifood studies, the Emancipatory Question (Constance 2008) asks, “What is the relationship between industrial agriculture and social justice?” An ethical agrifood system would minimize environmental, economic, and social forms of injustice.

Organics engages the environmental injustice dimension. But conventionalization has blunted the early transformative dimensions of organics, as evidenced by the trends toward larger operations using hired labor and organic input substitution practices to produce for global commodity markets and plus market consolidation (Guthman 2004). The small farms movement has potential to avoid market power dimensions and allow producers to get fair value for their production. Fair wages for farm labor are a more difficult

dimension. Local food is surging, but local may include unethical dispositions to racism or sexism. The class dimension of quality foods also has to be resolved.

Although many of the actors participating in the alternative agrifood movement are not informed by agrarian values, such as the pragmatic conventional farmers growing organics, their actions are creating the desired result. There is movement in a more ethical direction for the agrifood system, and small farms are leading the way. This movement is encouraging for ecological, economic, and social sustainability and quality of life.

Cross-References

- ▶ [Community-Supported Agriculture](#)
- ▶ [Corporate Farms](#)
- ▶ [Economy of Agriculture and Food](#)
- ▶ [Fair Trade in Food and Agricultural Products](#)
- ▶ [Jefferson's Moral Agrarianism](#)
- ▶ [Sustainability of Food Production and Consumption](#)

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Fasting

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Synonyms

Abstinence; Asceticism; Inedia; Mortification;
Penitence; Purgation

Introduction

Voluntary fasting as opposed to inedia induced by psychological disorder or famine poses a number of ethical quandaries. First, since eating is a biological prerequisite for life, it would appear contrary to the dictates of survival that fasting could be used to promote health. Yet from a purely evolutionary vantage point, as gatherers and hunters, our bodies have adapted to an unpredictable food supply and even flourish without regularly scheduled meals, which are the product of a sedentary lifestyle and comparatively dependable food supply, fairly recent in the history of our species. Moreover, in the past ten millennia, the possibility of overeating has given fasting a purgative function for those able to overindulge. Several days without food has been considered physically cleansing, but obviously, there is a limit to the extent humans can go without food before wasting away and dying.

Fasting Through History

In addition, fasting has been thought to provide a form of spiritual refreshment by shedding excess corpulence, denigrating the body, and thereby strengthening the soul. In many religious traditions, fasting is an act of penitence, a form of contrition, intended to punish the body and impress upon supernatural beings the earnestness of human endeavors and willingness to reform. Both the individual occasional fast and the communally prescribed fast held on regular holy days or emergent situations such as impending disaster, war, disease, or even, oddly enough, famine were believed to communicate directly to God and appease his wrath. That is, assuming such calamities were sent as a form of punishment, the fast thus becomes a means of regaining favor.

Likewise, for the disempowered, fasting has been a means of exerting the human will when no other recourse is possible. The slave who refuses food and prefers death to submission, the prisoner who fasts as a form of political protest, and, even on a less ostensibly intentional level, the anorexic whose life is completely at the mercy of superiors

has one last means of empowerment in controlling food intake, often to pathological extremes. Whether for health, spirituality, or gaining power over oppressors, fasting is nonetheless a potentially dangerous practice, and despite heroic feats of going without food attributed to holy figures and medical marvels, the human body is gradually destroyed without suitable sustenance.

This entry will recount numerous examples of fasting drawn from history and the present, to provide both a taxonomy of the practice and an inquiry into the ethical ramifications of going without food, how it impinges on our existence as individuals, and the many benefits it has been thought to confer.

In the Jewish tradition, there are two principle types of fast although both are intended to be a means of communicating with God contrition and atonement. The book of Leviticus (XXIII, 26–32; XVI, 29–31) specifies that on the seventh month on the tenth day “ye shall inflict your souls” meaning no work can be done and no food eaten. The intention is to cleanse the soul by meditating on one’s sins and separating from them. This holy day, which extends from sundown to sundown, called Yom Kippur, is still practiced even by many completely secular-minded Jews. There are several other fasts, usually observed strictly only by Orthodox Jews: Tisha B’Av commemorates the destruction of the First (586 BC) and Second Temple (70 AD) as well as the expulsion from Spain (1492) and the Holocaust, as well as other calamities. There are also lesser fasts such as the Fast of Esther before Purim, the fast of the first born before Passover, and a few others (Cooper 1993).

There are also voluntary individual fasts in the Jewish tradition, such as when Moses fasted 40 days and nights, when Joel tried to avert God’s wrath, or when David repented for his adulterous relationship with Bathsheba. Similar acts of repentance were performed by Jesus and his disciples and the question of whether fasts should be regularly scheduled, should consist of complete abstinence from food or only from certain foods and for certain hours, remained a major question throughout the history of Christianity.

In biblical Judaism, there were also public fasts for emergencies, when invading armies threatened or some other impending disaster.

The larger question though is why would abstinence from food please God? Why would intentional suffering constitute a meritorious act – in Hebrew a *mitzvah*? Eating is certainly pleasant and a distraction from more serious matters. But more importantly, fasting is a sign of remorse, to show seriousness of purpose and true contrition. Going through the formal motion, the empty ritual itself, is to no avail, and in fact biblical fasting would have been accompanied by weeping, beating the chest, tearing one's clothes, and strewing ashes on one's head. Most importantly, the act of fasting is meaningless unless accompanied by a true intention to improve one's ways. This is why Isaiah recommended fasting in private, so as not to draw attention or praise from others.

The Hindu tradition also embraces many fasts, and devotees to a particular God often fast on a certain day: followers of Shiva on Mondays and Vishnu on Thursdays. Festivals such as Maha Shivratri (Shiva's Day) or the week before Diwali are also fast days. Other fasts are performed in specific localities in honor of various deities and may entail complete abstinence from food or of meat only. These are considered *vrata*, an obligation or promise intended to gain blessings and favor with the Gods. The word *vrata* is cognate with vow, and thus it is a kind of stated agreement between the individual and deity to perform certain actions such as fasting, in return for benefits.

Asceticism, including fasting, is also a major current in Hindu worship, accompanied by meditation, yogic practice, and sometimes bodily mortification. These are intended as means to spiritual purification, renouncing worldly pleasures to attain wisdom. Jains also practice asceticism, along with nonviolence, giving up possessions, and other austerities including celibacy for monks. It was this tradition of asceticism that Siddhartha Gautama tried after leaving home in his search for wisdom but eventually rejected in favor of the "middle way" by which one neither longs for pleasures nor seeks merit in

extreme self-denial – but rather detaches from such matters as essentially unimportant and eating merely to live. The Theravada Buddhist traditions follow this middle way, whereas the Mahayana of China and Japan, monks are usually vegetarian. Many Buddhist monks do not eat a meal in the evening, though this is primarily for health reasons and not considered a proper fast. These interdenominational or confessional disagreements over fasting are common in most religious traditions.

As Christianity began to define itself as separate from Judaism, the question of fasting was seriously considered by authors such as Tertullian and Basil. While it was clear that the kosher laws of the Old Testament had been abrogated and there were occasions when Jesus and his disciples consciously ignored Jewish custom, they did fast for emergent occasions. Jesus, like Moses, fasted 40 days and nights in the desert. His disciples did likewise to atone for sins. Early Christianity also embraced asceticism which stressed physical denial as a path to spiritual strength. But these were acts of holy men and sometimes women, certainly not possible for ordinary people. Gradually the church instituted regular days of fasting, every Saturday, starting on sundown Friday night; the vigils of saints' days; the so-called *quatuor tempori* or Ember Days; and most importantly Lent, the 40 days between Ash Wednesday and Easter minus Sundays. The evening before particular saint's days might be set aside for fasting, in some places, Wednesdays as well. There was wide divergence in practice (Henisch 1976).

These fasts did not involve total abstinence from food, merely one meal a day before sundown and sometimes smaller collations or snacks in the morning or evening, but no meat or meat products were allowed. The original logic was primarily medical: meat was categorized as hot and moist and very nutritious. It increases the libido and therefore inclines one to sin (Shaw 1998). Contrariwise, fish and vegetables are cold and aid in sexual abstinence. Many monastic orders inclined toward vegetarianism for these reasons, though in the course of the Middle Ages, this position became suspect as heresy.

The Albigensians had declared all matter sinful and refused to eat meat and eventually all food, some adherents starving themselves to death. This was obviously considered a sin, but so too was permanent avoidance of flesh since the New Testament says in many places that all food is good.

Fasting regulations applied to all people with exceptions for illness, pregnancy, and age, but individuals and sometimes whole towns could purchase exemptions allowing them to consume some meat products, perhaps butter, or even meat on fast days. By the sixteenth century, there was perceived to be widespread abuse of these regulations. Moreover by turning to the scripture as a higher authority over tradition, many Protestant reformers found no biblical warrant for regularly scheduled fasts. For Martin Luther, private individual fasts were fine, since they are found throughout the Bible, but not the complex regulations that had arisen since. In the Reformed tradition, public fasts were imposed, exactly as in the Old Testament, to avert God's wrath during war and epidemics. Although most Protestant churches abandoned regular fasts, the Calvinist churches, along with public fasts, introduced a kind of year-round austerity in food and mode of living as an ideal. The Catholic Church retained earlier fasting practices and they stood in place, with traditions such as fish on Fridays, until the 1960s when the restrictions were loosened. Yet many Catholics still give up meat during Lent and on Friday nights.

Fasting in the Eastern Orthodox Churches is rather more rigorous, though it still involves giving up meat and meat products as well as oil and for some fasts fish as well and alcohol. There are also many more days through the calendar still observed as fasts, not only Lent but holy days throughout the calendar and normally any day at sundown the day before one intends to receive communion. The Pentecostal Church and the Mormons also have regularly scheduled fast days.

Muslims also fast, during the entire month of Ramadan, taking no food or drink from sunrise to sundown. It is considered one of the pillars of Islam, along with charity. The practice is

intended to bring the faithful closer to Allah, through purification of both mind and body, since no negative thoughts or words are to be expressed either. A sumptuous meal often closes the observance in the evening.

Fasting for religious purposes in all cases assumes a certain relationship to God which can be improved. The Gods must be appeased, or in a certain sense convinced of sincerity and contrition before one can be absolved of sins. In most cases, the body is seen as a distraction hindering the full development of the spirit, which grows stronger through self-denial. Secular fasts are entirely different, though the motivation may be similar. Fasting is essentially a means of empowerment. Asserting control over the body gives one a sense of accomplishment and purpose and the ability to make negative situations better. Thus both religious and secular fasting may spring from similar psychological urges common to all people.

As Nietzsche described it, in the face of strong and powerful people whose values are strength and beauty, as well as eating meat in heroic portions, the weak and oppressed use abstinence as a kind of secret ethical weapon. The reward for such righteousness comes in the afterlife, in salvation. But Nietzsche saw it springing from a kind of spite directed at the powerful. Building on these ideas, Freud postulated that ordering and controlling the body is a substitution for not being able to act on our libidinal urges, so it makes perfect sense that the holiest of people, who deny themselves the most, would also be the most rigorous in self-chastisement, the ascetic in the past and the present. Both thinkers see fasting as a form of empowerment, but it is only one that could have been devised by the disenfranchised.

The empowering nature of fasting might even be true of the purgative fast intended only for improving health. A sense of bodily pollution, whether it be excess fat or a feeling of having consumed too many intoxicating substances, is a feeling of inadequacy that originates in the mind. It may be strongly influenced by cultural signals such as advertisements for weight loss or images of ideal bodies. At root this is similar to the sense of guilt and shame arising from ethical

failings. The body thus needs to be purged of sin – whether this is a sense of moral failing stemming from wrongdoings or from having consumed the “wrong” foods and drinks. The fast in both cases washes sins away, with divine intervention in one case and through scientific or quasi-scientific means in the other. The goal is the same, righteousness, happiness, and social approval.

There are several different varieties of therapeutic fasting, though they overlap in many respects. For example, an individual may undertake a voluntary weight loss fast, but a similar kind of fast or drastic reduction in food and abstinence from certain types of food might be prescribed by a physician. There are also fasts as part of standard regimens, before anesthesia or before testing for cholesterol levels. But these should be kept distinct from the fast which purports in and of itself to maintain health or affect cures. Such therapeutic fasts are nothing new, and even in ancient medicine, Hippocrates and Galen prescribed them for certain ailments. The former contended that people have a “physician within” or a certain internal force that heals when the body is not taxed by digesting food. Popular weight loss fasting regimens began to proliferate in the eighteenth century, the most renowned devised by George Cheyne, though it was mixed directly with a kind of religious purification as well (Guerini 2000). The secular fast as a form of therapy ran through medical thought for centuries, but fasting was not usually recommended for those in good health.

This changed in the late nineteenth century when the modern fasting fad spread in the wake of Dr. Henry S. Tanner’s remarkable feat of going without food for 40 days. Physicians were present to monitor his health throughout the fast. It was staged at Clarendon Hall in New York City in 1880, and though he did lose about a pound a day, he came out of the experiment otherwise in good health. Edward Hooker Dewey thereafter published several books on the *Fasting Cure* and *No Breakfast Plan*. In these he described his experience curing people of ailments as diverse as melancholia, obesity, insanity, and chronic alcoholism. This was the era of rampant diet

fads and health cures, the most famous advocated by John Harvey Kellogg. But fasting per se had its own enthusiastic adherents. Bernarr Macfadden, the body building guru, pushed fasting in his popular book *Fasting for Health* published in 1923. It was meant not as a curative but a general practice for all people. Herbert M. Shelton was probably the best-known advocate of “Natural Hygiene” in the twentieth century, and his book *The Science and Art of Fasting* was very popular, despite his being arrested many times for practicing medicine without a license. Although the motivations and goals of these figures may have differed, they all brought the idea of fasting in the popular imagination, as part of alternative medicine, dieting, and body building, and it remains a legacy of these people today. There are also many mainstream physicians today researching the effects of reduced calorie diets on longevity and the role that periodic fasting may play in maintaining health.

Another species of fasting which can also be therapeutic is the fast intended to aid in harnessing supernatural forces. Fasting is a part of most traditions of magic, here defined as an individual’s ability by means of spells, amulets, incantations, and rituals to make use of occult powers to achieve specific tangible ends. That is, a purification ritual involving fasting usually precedes the magic ritual. Whether the individual starts hallucinating after prolonged abstinence, really believes he or she is controlling supernatural powers, or is a simple charlatan is irrelevant. Going without food is often believed to make that connection to unseen forces possible. This might be the alchemist seeking spiritual perfection, the shaman contacting spirits to cure a sickness, or a magus in any tradition.

The serious ethical dilemmas posed by fasting naturally grow with the extended duration of the fast. A day or two without food, or even several weeks without meat, will not destroy the body, but over a week without food and especially without water can have permanently damaging consequences including death. Whether any goal can justify self-destruction cannot be answered

here, though many individuals who have fasted as a form of protest have gained popular sympathy.

The most renowned example of a hunger strike was Bobby Sands, a Northern Irish activist working for the IRA who was imprisoned in the 1970s. From prison he wrote poetry and opinion articles and was even elected to Parliament. In 1981 he went on a hunger strike essentially demanding that prisoners such as himself be treated as political prisoners of war rather than common criminals. After 66 days without food, he died, gaining wide publicity and sympathy for the movement. Nine other hunger strikers followed to their deaths. These events raised many questions. They certainly increased awareness of the war in Northern Ireland, and recruits to the IRA increased in the following years, ultimately escalating violence. To some Sands was a hero fighting for freedom, to others a terrorist directly supporting the killing of innocent people.

From an ethical standpoint, the famous hunger strikes of Mahatma Gandhi against British rule of India, which took place from the 1920s to 1940s, were much more straightforward. As a revered public figure, the British were anxious not to let Gandhi die in prison and gain greater support. More importantly, these were calls to acts of nonviolent resistance and they of course ultimately achieved their goal of independence.

There have been many examples of hunger strikes among political prisoners since the 1980s, most recently among Palestinian prisoners in Israeli jails. The real ethical question is not whether damaging or killing yourself for a larger cause is justified, but whether a person fasting can be force-fed to save their life. A physician's duty is simply to save lives regardless of contingent circumstances, and while the World Medical Association has declared force-feeding degrading and inhumane, a physician may still follow his or her own conscience in saving a dying person. The negative stigma associated with force-feeding stretches back to the era of the women's suffrage movement when imprisoned women would be tied down and force-fed and even further back to African slaves who would be shackled and have food crammed through a funnel to prevent them from starving

themselves. The question still remains though, is it ethical to fast to the point of death, to avoid enslavement, to gain rights, or as a form of political protest against oppression?

Similar ethical issues are raised by cases of miraculous fasting. There were several celebrated young women in the middle ages and early modern era who went for remarkable lengths of time without eating (Bell 1985). Some historians consider these cases of anorexia nervosa, though they might also be considered hunger artists, since they sometimes seemed to thrive on attention and notoriety. In either case, the root cause is similar to other fasts as well as to anorexia in general; they are an attempt to become empowered for those who feel out of control or helpless. In the medieval examples such as Lidwina of Schiedam who suffered a terrible skating accident, lost her appetite, and eventually gave up eating altogether for many years, the fasting was considered miraculous and she was later made a saint.

In later examples, observers seem to have been more skeptical, though physicians did often vouch for the truth of some amazing claims. Catharina Binder of Schmidweiler in Germany was still venerated in the 1580s, but in later examples, increasingly physicians sought natural causes or simply dismissed these cases as fraud. There was a celebrated case of one Barbara Kremer that was exposed as a sham in a book by Johannes Weir in the late sixteenth century. There were French cases, Jeanne Balam, and English ones, Martha Taylor, in the 1660s, and increasingly, scientific verification or explanation was sought. By the early nineteenth century, the celebrated fasting girl Anne Moore was uncovered as a fake. In these examples, it is clear that the typology of a "fasting girl" became so familiar that many young women could pretend, presumably as a way to get attention.

In the late nineteenth century, there was a further string of renowned fasting girls; the most infamous was that of the young Welsh girl Sarah Jacob, whose parents allowed her to be supervised in a hospital to verify the claim that she did not eat at all. Despite signs of starvation, her parents insisted they keep watching and the

girl eventually died. The parents were sent to prison for manslaughter (Jacobs-Brumberg 2000). There is no doubt that many of these cases were simply anorexia and that, rather than intentional deceit, the young women were merely exploited by others for fame and profit.

Profit is also very clearly the motive for the so-called hunger artist, and by the late nineteenth century, this was a recognized genre of performance with many well-known stars such as Giovanni Succi. The short story by Franz Kafka published in 1922 recounts an artist who fasts for entertainment in a cage, who despite his popularity is forced to stop after 40 days. Later he gets a job at a circus where he can break his own record, but no one is interested any more, and he eventually dies. Whatever the meaning of the story, it does coincide with the lack of interest in fasting as performance art in the modern era. On the other hand, magician and endurance artist David Blaine did fast for 44 days suspended in a plexiglass box near the Thames in 2003. Despite heckling, Blaine emerged as a hero, providing an example of human endurance, but one wonders what else?

In all cases mentioned, the great paradox of fasting is that the goal is to gain power, notoriety, and sanctity. By denying a fundamental physical requirement, which scientifically is known to be dangerous if prolonged, somehow people are thought to become stronger, more just, cleaner, or simply in greater control.

Summary

Throughout history and in many religious and secular contexts, fasting is a phenomenon which is believed to empower people either through divine intervention or by gaining control over the body. Fasting has also been used therapeutically for promoting health and longevity, which is ironic since especially in excess, fasting causes direct physical harm. Fasting can also be used as a tool of political protest and as entertainment in the case of hunger artists. Miraculous fasts may be seen either as a form of anorexia or as closely related to religious fasts.

Cross-References

- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Food-Body Relationship](#)
- [Food Preparation, Cooking, and Ritual in Judaism](#)
- [Hinduism and Food](#)
- [Islam and Food](#)
- [Jainism and Food](#)

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Feeding Children

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Synonyms

Adolescents; Child feeding; Child nutrition;
Children; Children's menu; Kid cuisine

Introduction

Starting as early as conception, parents are intimately responsible for the feeding of infants,

ensuring their sustenance, survival, and ability to thrive. Due to the biological phenomena of pregnancy and breastfeeding, mothers often hold the initial responsibility for feeding infants and continue to provide, purchase, prepare, and serve food for their children. Fathers are also involved to a degree that varies by culture and even from family to family. As babies grow into toddlers, children, and adolescents, parents continue to exert control and demonstrate care in child-feeding practices. Children also express their own food preferences, which change over time and are greatly shaped by parental role modeling and parenting style. Particularly as childhood obesity rates have increased in many countries across the globe, questions of how and what to feed children have garnered heightened attention.

Starting with a short history of philosophical approaches to feeding children, this entry then employs studies and examples from the United States, Canada, and the United Kingdom to explore a variety of factors that currently influence the feeding of children, particularly in the modern West. The entry begins by examining the role of parents, starting with the politics of breastfeeding and then outlining the influence of role modeling, parenting style, and sources of parental motivation. The entry then turns to children themselves, examining the agency and decision making of children to influence family food decisions and to feed themselves. Child-centric food marketing, children and supermarket shopping, and the evolution of children's cuisine and menus are each discussed as case studies that embody the ethics of feeding children.

Philosophical Approaches to Feeding Children

While philosophers have more rarely discussed feeding children, they have discussed feeding infants at length. For example, writing near 350 B.C., Aristotle covers in great detail the nourishment of children in the womb via the mother's blood. As Bergès (2013) discusses, Aristotle strongly promoted breastfeeding in Book VII of the *Politics* to the extent of

legislating adequate maternal diets and breastfeeding adherence. In his history of breastfeeding, Short (1992) not only emphasizes Aristotle's breastfeeding promotion, but also reveals Pliny, Plutarch, and Tacitus' opposition to wet nursing, as they argued it decreased the bonding between mother and child that breastfeeding naturally facilitates.

Similarly, Jean-Jacques Rousseau, whose eighteenth-century philosophies informed the French Revolution, strongly promoted breastfeeding, arguing that it naturally awakens and instills morality in children. Mary Wollstonecraft, an eighteenth-century British philosopher, also supported requiring women to breastfeed, believing not only that the care of children was a woman's duty, but also that the contraceptive properties of breastfeeding benefited women (Bergès 2013). Bergès also discusses how in more recent years philosophers have debated if women should be required by law to breastfeed, discussing the balance between an infant's right to nutritional sustenance through breast milk and a woman's right to choose how she uses her body.

Throughout the history of civilization, philosophers have acknowledged the role of women in feeding infants and children. While Aristotle argued that women feel greater concern to feed children than men—rooted in either gender-specific compassion or the fact that mothers tend to spend more time with their children than fathers do (Mayhew 2004)—a woman's role in feeding children is even more complicated in contemporary societies. Nel Nodding's work around the ethics of care also provides an example of contemporary thinking on gender, ethics, and moral actions (Smith 2004), which could be applied to the feeding of children. In such a way, parents feeding children can be understood as an expression of care that according to Nodding is basic to human life and thus requires no ethical effort, particularly in women's experiences (Smith 2004).

The Role of Parents in Feeding Children

As food providers, role models, and guides, parents powerfully influence the taste preferences,

eating behavior, food views, health, and weight of their children. While most humans exhibit early on a genetically determined predisposition to prefer sweet and salty flavors and to dislike bitter and sour ones, these preferences are also modified by life experience and environmental context. It can be argued that the feeding of children begins in the womb, as a mother's dietary choices during pregnancy shape not only a child's health, but may also influence taste preferences. Once a child is born, feeding continues by means of breastfeeding or bottle-feeding. As Van Esterik (2013) shows, women have throughout history had choices when it comes to feeding infants. Her work demonstrates, however, that in present day societies, political, economic, and cultural issues surround breastfeeding, revealing the intersecting, and at times competing, interests of parents, children, governments, health professionals, and the infant formula industry. For example, while significant research has proven the health benefits of breastfeeding for both mother and child, breastfeeding is not always a feasible option for working mothers. Furthermore, based upon cultural views and societal standards, breastfeeding a child, particularly in public, can be viewed by some as maternal and natural and by others as taboo behavior. Especially in countries like the United States where breasts are highly sexualized, particularly in the media, breastfeeding can elicit conflicting perceptions of cultural appropriateness, which mothers must navigate. These are but a few examples of the myriad factors that influence a mother's choice to breastfeed or bottle-feed her child.

As children grow, begin to eat solid foods, and are weaned, they observe, and to a certain extent absorb, the eating practices of parents and caregivers. Whether they frequently eat and enjoy high-calorie foods or diet in order to maintain or lose weight, parental eating behavior may influence both the eating habits and perceptions of their children. Most generally, however, children eat differently than adults. From early on, children tend to prefer familiar foods. A certain amount of *neophobia* (the tendency to reject new foods) is common among children,

particularly between 18 and 24 months of age. As Benton (2004) discusses, this phenomenon appears to be relatively consistent across cultures, as it is of arguably evolutionary importance, protecting newly walking children from potentially poisonous foodstuffs. While neophobia can be worrisome and frustrating for modern day parents, it is possible to guide children in their exposure to new foods. For example, repeatedly exposing a child to an initially disliked food can overcome resistance. While each child is different, studies show that children refuse a new food a median of 11 times (Benton 2004). Forcing a child to eat a food, however, will only increase dislike for that food. In addition, restricting access to certain foods, such as junk foods, increases rather than decreases a child's desire and preference for these foods (Benton 2004).

Beyond role modeling and guiding, parenting style also greatly affects child feeding (Hubbs-Tait et al. 2008). While there are multiple theories and a variety of categories demarcating parenting styles, studies that explore the influence of parenting style on child-feeding practices typically employ the following categories: authoritative (high control and high warmth), authoritarian (high control and low warmth), and permissive (low control and low or high warmth). The research of Hubbs-Tait et al. (2008) confirmed that these general parenting styles correlate with feeding practices. Generally, authors found that authoritative parents encourage a child to eat a healthy diet while also considering a child's taste preferences. Authoritarian parents attempt to control a child's food intake with little consideration for the child's preferences, often restricting specific foods. Permissive parents allow the child to control what, where, and how much he or she eats, a style that can be characterized as either more indulgent or more neglectful compared to other styles. Trends in parenting styles reveal a shift away from restrictive parenting, privileging a more permissive approach. Notably in a contemporary context, both permissive and authoritative parenting styles appear to grant requests for food (O'Dougherty et al. 2006).

Parenting style and child-feeding practices greatly shape what and how a child eats, particularly when certain foods are restricted or promoted. Parents may restrict foods considered unhealthy, such as fast food or sweets, in order to nurture a child and ensure his or her health and safety. This restriction, however, can cause a child to more strongly desire these forbidden foods. In addition, parents who are concerned by a child's weight status may limit a child's access to food in an effort to help the child lose weight. Current evidence reveals, however, that such a strategy may prevent a child from learning to regulate his or her own intake, thus causing longer-term harm (Benton 2004). Conversely, parents may also use food as a reward, which reinforces taste preferences for sweet and fatty foods. Parents may also use specific foods as a form of punishment, which can further reinforce dislike for particular foods, such as vegetables.

Whether promoting broccoli or restricting candy, a variety of factors motivate parents when feeding children. In their study of the mother plus child "new super consumer," Coffey et al. (2006) posit that mothers are stimulated by a combination of four major motivators. First, mothers desire a positive self-image, aspiring to be good mothers. Second, they must balance the needs for convenience and time management, feeding children alongside other daily duties. Third, mothers desire and feel responsible for nurturing their children and keeping them safe. And, finally, mothers want to make their children happy.

Children, Agency, and Food Choice

While parents play a significant role in feeding children, children past a certain age also exert their own agency as they develop food preferences, make their own food choices, and influence the food choices of their family. While food preferences vary from child to child, recent studies from the United States and Canada have found that junk food holds a special place in the food life of children. For example, in focus groups,

Canadian children consistently identified the same favorite foods – pizza, French fries, and junk food – specifically because they were considered unhealthy and were perceived as in opposition to adult foods (Elliott 2009). Furthermore, for children in the United States, Namie (2011) concluded that junk food carries multifaceted meaning and appeal for children in several ways. Purchasing junk food, such as candy, with their own limited money, makes these foods status objects for children and purchasing them, an expression of agency. Often ingested within view of peers, eating junk food not only represents a sort of conspicuous consumption, but also demonstrates belonging to a group. When given to a child, junk food also symbolizes and communicates caring.

Beyond the many meanings of junk food, a variety of factors influence children's food choices. Children are often drawn to fun, an element of lesser importance to adolescents and adults. For example, in a US study focused on vegetable consumption, children were found to eat 50 % more when the foods were fun in name, shape, or design (Wansink et al. 2011). Linked to a sense of fun, children are also uniquely influenced by the role of play in eating. Take for example the tactile play of eating a cookie or gelatin. The way foods look also influences a child's food choice, whether attracted by cartoons, pretty designs, or images of food that look good to eat (Elliott 2009).

The school environment is one in which children may exercise more control over their own eating, as they make food choices without the supervision of parents or caregivers. When bringing a lunch from home, a child can choose whether or not to eat the provided foods or to "trade" them with a friend. If purchasing a lunch at school, children can exert negligible or considerable agency in selecting what foods to eat, depending upon the serving method. In their study of school food in London, Daniel and Gustafsson (2010) argue that adult attention and governmental policy alike have focused on the nutritional aspects of school food while ignoring elements that are likely of greater importance to children, such as social aspects. In their study of

children's food culture in a school lunchroom in the United States, Salazar et al. (2008) also concluded that there are distinct differences between how adults and children form food rules, norms, and values around eating. These authors studied the lunches that children created at a school salad bar, concluding that children enjoyed the freedom of choosing their own foods and arranging them in ways that they found appropriate, pleasing, and tasty.

Feeding Children: Case Studies

Food Marketing to Children

For child health advocates and parents alike, a serious ethical consideration in feeding children is the direct marketing of food products to children as autonomous consumers. Children have increasingly become consumers unto themselves, influencing family purchases of many products, including food. Termed "pester power," "the nag factor," and "kid influence," this influence describes the persistent nagging and whining that can accompany children's requests for items that they desire. Advocates argue that marketers exploit children's pester power in an effort to sell products that children want.

In the United States in the 1970s and 1980s, the Federal Trade Commission considered restrictions on the advertising of junk foods to children, but no rules were enacted. Those in public health, policy, and advocacy argue that regulatory efforts were thwarted by the food, toy, broadcasting, and advertising industries, which stand to make significant financial gains by advertising to children. These groups argue that they have the right to market to children under the First Amendment and proposed self-regulation as a solution. There has been a resurgence in efforts to police the food industry in this area, in part due to the 2005 Institute of Medicine of the National Academies review, which concluded that food marketing influences child food preferences, consumption, and health.

Much research has focused on food advertising during children's television programming. In a 2005 study of Saturday morning children's

television programming on air in the United States, researchers found that approximately half of all advertisements were for food and nearly all (91 %) were for foods or beverages high in fat, sodium, or added sugars or were low in nutrients (Batada et al. 2008). The advertisements were most commonly for ready-to-eat breakfast cereal and cereal bars, restaurants, and snack foods. Food advertisements also featured cartoon characters (74 %) and toy or other giveaways (26 %) (Batada et al. 2008).

While traditionally appearing in television advertisements and on product packages, food marketing now takes a variety of forms. In the United States, companies market to children in myriad ways: online; through social media; in games; with product placements in popular television programs, movies, and video games; and even in their schools. The December 2012 Federal Trade Commission Report on food marketing to children and adolescents in the United States found that while the funds spent on television advertising decreased during the period 2006–2009, dollars spent in new media increased by 50 % (Nestle 2012). Furthermore, Elliott (2012) argues that marketing unhealthy foods to children constitutes a "dual ethical transgression". She argues that child-centric marketing manipulates a young target audience without the cognitive ability to understand the marketing techniques and in some cases lacks the ability to distinguish advertising from scheduled entertainment, such as television programming. Secondly, Elliott argues that because a significant portion of child-centric marketing encourages the consumption of unhealthy foods, this marketing contributes to the desire for and potential subsequent consumption of a diet that may have detrimental effects in the short and long term.

Children and Supermarket Shopping

The supermarket is an environment in which food marketing to children comes into play, as children assert their own agency to significantly influence and control their own and their family's food selection. Parents have been shown to give in to child food purchase requests as much as 45–65 % of the time (O'Dougherty et al. 2006).

In this way, parents can be both a “strong” and a “weak” link in a child’s food chain at the supermarket in the promotion of a healthy diet (O’Dougherty et al. 2006). Illustrating this point, Berry and McMullen (2008) studied the visual landscape of the breakfast cereal aisle at a Toronto supermarket, seeking to understand how marketers engage children, who have been found to influence half of all breakfast cereal purchases. The authors concluded that the least healthy cereals – those containing more sugar, refined grains, and trans fats – were more likely to feature child-centric marketing, such as cartoon spokes-characters, themed cereal shapes and colors, and incentives on the cereal boxes.

Given that children do influence purchases, researchers find that parents typically involve children in food shopping in a variety of ways, ranging from conflict-ridden negotiation to “co-shopping” in an effort to increase a child’s food knowledge and interest. Food shopping can also be a learning opportunity, engaging children in not only food knowledge, but also other educational acts, such as practicing counting and reading. In such a way, the supermarket provides a test environment in which the multiple ethical considerations of feeding children play out. Within this public microcosm, parents balance their own motivations when food shopping with the health, desires, and development of their children, as well as with the motives of the food industry.

Children’s Cuisine and Menus

In the countries addressed in this entry, children’s culture increasingly exists within popular culture, along with it a type of “kid-friendly” cuisine. Within families, children’s food is often differentiated from adult food, at times holding a lesser place. Children’s snack foods and treats in particular are “othered” compared to the “proper” foods that constitute family meals (Curtis et al. 2010). Within the consumer culture, a plethora of child-specific products are available, including food products designed for and marketed directly to children. For example, in the United States, the overtly and aptly named Kid Cuisine brand by ConAgra Foods strongly

promotes fun. Packages feature bold colors and cartoon penguins. Meal options include “Mini Corn Dogs” and “Fun Shaped Chicken Breast Nuggets.” Lunchables, a Kraft Brand, also promotes fun, offering up finger foods that combine eating with play. Interestingly, both Kid Cuisine and Lunchables have modified their product offerings in recent years, adding options with at least one serving of fruits, vegetables, or whole grains.

Across the United States, special “kid-friendly” meals are made available at local, chain, and fast food restaurants. Meal options generally consist of foods such as chicken nuggets or fingers, hot dogs, grilled cheese sandwiches, macaroni and cheese, hamburgers, and French fries. Some chains offer a thematic children’s menu, such as the iconic McDonald’s Happy Meal. Such options demonstrate a cultural interpretation of a child’s palate and gastronomic preferences. Furthermore, a 2008 study found that 99 % of the children’s meals served at the top 50 largest chain restaurants in the United States were of poor nutritional quality (Batada et al. 2012).

The unhealthy nature of children’s menus is concerning to public health advocates as, like adults, children consume an increasing number of meals outside of the home. These meals tend to be less healthy and larger in portion size than meals eaten at home. Specific interventions have focused on improving the quality of children’s fast food meals, which are generally high calorie and low in nutrients. In 2010, Santa Clara County in California became the first US jurisdiction to implement an ordinance that allowed toys to accompany only meals that met minimal nutritional criteria for calories, fat, sugar, and sodium (Otten et al. 2012). Though this example has its limitations, such ordinances appear to positively influence the marketing of healthful menu items and are currently being enacted in other cities and states.

As childhood obesity and overall health remain a key concern, myriad strategies have been explored to shape and modify the feeding of children within families at home, as well as in schools and at restaurants. A variety of ethical

questions also remain. Should soft drinks be sold in schools? Should extremely obese children be taken from their parents? Should restaurants be required to sell healthy meal options for children? Should cartoon characters be used to promote the sale of unhealthy foods? And should they be used to sell healthy foods? Each of these questions comes with its own ethical considerations, balancing the needs and desires of children with those of parents, governments, and societies as a whole.

Summary

As babies are born without the ability to feed themselves, parents are intimately involved in feeding children throughout their young lives. Parenting styles and the eating behaviors of parents themselves greatly influence feeding practices, as do the needs and desires of children. Within the context of childhood obesity, feeding children becomes not only a social and familial process, but also a public health issue with myriad ethical implications, ranging from food marketing to children to the construct of children's culture and cuisine.

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Food “Porn” in Media

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Synonyms

Gastro porn

Introduction

The term food “porn” can refer to still or moving images of food and/or eating across various media, including cookbooks, magazines, television, blogs, websites, and social media platforms like Twitter, Facebook, Instagram, and Pinterest. Evocative descriptions of food and eating in literature can also be described as food porn. The term is often used positively, to suggest that the food depicted is desirable or is depicted in a way that makes it desirable – the latter of which could depend on the aesthetics of composition (including lighting, extreme close-ups, color saturation) or on the person or people preparing or eating the food. While the connotation is often of “guilty pleasure,” or allowable “indulgence,” the term can also (sometimes simultaneously) negatively connote food which is regarded as “bad” and which should be avoided.

Not unlike the now-famous definition of pornography – “I know it when I see it” (uttered by Supreme Court Justice Potter Stewart in the 1964 “*Jacobellis v. Ohio*” case regarding whether or not the French film *Les Amants* should be considered pornographic) – the term’s application is therefore very broad, ranging from playful referrals to food that looks particularly appetizing to what are intended as more serious warnings about the possible implications of eating particular foods. Its widespread presence in popular media suggests that there is less stigma attached to consuming food porn than there continues to be attached to consuming non-food or “traditional”

pornography (debates around which include the question of whether pornography represents and encourages violence against women or whether it functions as a “sex-positive” means of feminist expression). Rather, its vicarious, or unreal, component arguably fuels a perception that consuming food porn is safer than consuming real food. The extreme of this is borne out by sufferers of eating disorders who rely on images of food as a substitute (within limits) for eating. But food porn is not without its own stigma, and ethical considerations related to its production and consumption include examining its role in a culture which accommodates and produces “foodies” and at the same time various crises of overeating and undereating. Some critics suggest that each of these patterns of consumption represent various degrees of disordered eating. From this perspective, and echoing the argument that pornography contributes to a distorted and unrealistic view of sexuality and sexual behaviors, the market for and widespread “use” of food porn potentially fuels an obsessive and, in some cases, “unhealthy” relationship to food.

This entry begins with the background of the use of food porn, including some technical shortcomings of the analogy between food porn and non-food pornography. It then offers a number of examples of its widespread use to indicate the “normality” of the concept in contemporary popular and food media cultures. It then reviews satirical and critical responses to the concept before concluding with a summary of the key ethical considerations related to the production and consumption of food porn.

Background

“Gastro porn,” a variant of food porn, was first used in print in the *New York Review of Books* in 1977, when a cookbook review reflected that “True gastro-porn heightens the excitement and also the sense of the unattainable by proffering colored photographs of various completed recipes” (Cockburn 1977). Here both the “excitement” and the “unattainable” allude to the element of fantasy which is a key commodity in

non-food pornography. Food-related fantasies were not confined to cookbooks: after decades of enjoying a postwar "luxury diet" (Belasco 2006), many Americans turned their attention in the 1980s to diet, fitness, and which foods to avoid to maintain a lean and fit body. This period also saw a sharp simultaneous rise in obesity rates, in the incidence of eating disorders, and in food-related media (e.g., magazine articles and cooking shows on television) which provided voyeuristic escapes into worlds of food and eating where money and calories were of no consequence (O'Neill 2003). From its first manifestations, what is now referred to as food porn thereby occupies a contested space between cultural constructions of "legitimate" and "illegitimate" desires when it comes to eating. By providing various forms of food fantasies, it also reflects a growing appetite for the vicarious and "guilt-free" consumption of food.

As a reflection of the increasing guilt associated with consuming certain foods, the Center for Science in the Public Interest (CSPI) launched its monthly "Nutrition Action Health Letter" in the 1990s, a key feature of which was, and continues to be, exposing food identified as the "Right Stuff" vs. "Food Porn." Their November 2012 newsletter, for instance, offers Cascadian Farm Organic Harvest Berries as the Right Stuff, while Quiznos Chicken Carbonara Sub is dubbed porn for offering (among other "bad" qualities) "close to a day's saturated fat (17 g), and nearly 2 days worth of sodium (2,610 mg)."

Far more prevalent than the CSPI's unambiguous use of the term "food porn" as something to be avoided, however, is its ubiquity in popular food-related media channels. This includes using the pornography analogy to explain the recent explosion in food-related media and, particularly, food television as a substitute for cooking. According to celebrity chef Anthony Bourdain at a 2009 "Food for Thought" panel held in Connecticut (featuring several food media personalities conversing on stage about the exponential rise in food media), "It's the new pornography. It's people seeing things on TV, watching people make things on TV, that they're not going to be doing themselves any time soon." From this

view, food porn exists less as a manifestation of the vicarious consumption of "guilty" pleasures than as a comment on the general public's apparent lack of competence in the kitchen. Yet the limitations of the food porn-as-substitution analogy are summarized by a former pornography production assistant who points out that "Porn incites to action and is worthless if it does not" (McBride 2010) and by a reminder that even in gastronomy, "vicarious enjoyment is more definitely intended to be a prelude to, not a substitute for, direct and actual enjoyment" (Mennell 1985).

Beyond the historical and philosophical relationship between food and sex (both are driven by appetites which can be "overindulged or denied," and both can be represented either as "playful and witty and teasing" or "somewhat menacing," Korsmeyer 1999), the analogy between food media and pornography also includes technological similarities between the two industries. One such similarity is the use of extreme close-ups and, in food television, manipulating and extending the "climactic" moment of a cooking segment (Kaufman 2005).

Embracing the Trend

Despite the limitations and possible negative connotations of the analogy, popular and professional acceptance of the term is reflected in its widespread use. British chef Nigel Slater has what one writer calls a "virtually pornographic recipe for Purple Figs with Warm Honey" (Humble 2005) – though here the association between food and sex is made plainer than most, with the opening lines of the recipe advising that the dish is "A snack to share with someone special, in bed, on a cold winter's night." A review of *Tortilla Soup* describes the "comestible-filled" film as "almost foodie-porn." The camera lingers over such dishes as tangerine glazed lamb ... like a lecher over a glistening naked body" (O'Sullivan 2001).

Websites include personal food blogs like Foodporn.com (with sections labelled "barley legal," "hardcore," "lebanese," and a subtitle claiming to have been "Redirecting Perverts to

the Refrigerator Since 1999"), FoodPornDaily.com (subtitled "click, drool, repeat"), and FoodPorn.net (simply billed as "food photography," but with the promise that "If we don't make you hungry, no one will"). Professional productions include those like the "Food Porn"-themed episode in Season 6 of celebrity chef Anthony Bourdain's *No Reservations* show, hosted by veteran pornography actor Ron Jeremy and sold as "a XXX selection of all that's lip-smacking and luscious in the world of food. For hardcore viewers only." When Bourdain cuts into a piece of beef he describes as "twenty-four frikkin pounds of slow roasted, melt-in-your mouth, slightly bleeding love," the event is billed as "totally the money shot." These references not only confirm food porn as an accepted genre, but also rely on at least some consumer knowledge of the actual pornography industry for their understanding.

More representative of its general use, the term is widely employed to describe any food that looks good to eat, even if it is only an illusion. The popular competition show *Top Chef* features a named food porn dish on each show and has a dedicated "Food Porn room" equipped with various tools to make the food look picture-perfect, such as Windex (used to clear fingerprints off the plate) and beet juice, used to restore a "touch up meat that has lost its rosy glow" (Keller 2012). These modifications – some of which likely contribute to rendering the food inedible while making it look better – reinforce the priority of fantasy, or unreality, rather than any perceived eroticism or explicit sexuality of food porn. According to one early commenter on the rise of food television, "It's not erotic... that's not why it's called food porn. It's just unreal. You will never meet a Playmate of the Month; you will never eat the red, juicy tomato that you see on 'Barefoot Contessa'" (Buford 2006).

It is true that the precise tomato seen on television will always, and necessarily, be unattainable. Yet it remains arguable that a close enough proxy can be attained, as the growth in food media has seen a simultaneous growth in the availability of "gourmet" and

"foodie" ingredients – often through non-corporate retail spaces such as farmers' markets – indicating at least some degree of overlap between on- and off-screen culinary activity (which also counts as evidence against the food porn-as-substitution argument). At their most extreme, these overlaps are often described as the "effect" of (typically) a particular celebrity chef whose televised demonstrations have resulted in direct and measurable sales spikes in specific ingredients. (The term "Delia effect" was included in the *Collins English Dictionary* in 2001 following a 200 % rise in the sale of cranberries in the UK thanks to a recipe from celebrity chef Delia Smith. Similar effects have been noted following the publication and/or broadcasting of recipes by celebrity chef Jamie Oliver, while the hit baking-competition television show *The Great British Bake-Off* is correlated with a marked increase in the sales of baking equipment in that country.) And given that many, if not most, of the pictures posted as food porn on blogs and websites are generated by non-professionals, there is ample evidence that plenty of cooking activity is taking place. But it is impossible that all food porn incites to action because there is simply too much of it available for us to "click, drool, repeat."

Pinterest is notable as one of the fastest growing Web-based sharing sites, with food-related content the most popular among consumers. Other popular sites and tools for viewing and sharing food porn include Instagram, food pictures shared through which are collected on a dedicated "foodies" site, Instagram Foodies, and Tastepotting, notable for being subject to editorial vetting to ensure that "what finally gets served up on the site is a beautifully refined set of the community's contributions." As an index of the importance attached not only to sharing food photographs – because social media tools allow anyone to self-publish – but of the community recognition that comes from being published on other sites is Tastestopping, subtitled "Feasting on Seconds," which "offers a second home for food photography that has been rejected by other sites" (such as Tastepotting). While sites like Instagram Foodies and Tastepotting do not bill

themselves explicitly as food porn, they exist thanks to and as part of the same market that equates appealing pictures of food with food porn. When a New York restaurant created an "Instagram menu" using photographs of their food taken by customers and uploaded to Twitter using a certain hashtag, the decision was reported under the headline "Restaurants Use Instagram To Tap Into Food Porn Obsession." Media texts in this way contribute to consolidating the notion of any image of food as "porn" and of the trend as "obsessive." The term also exists as a widely used hashtag on Twitter (#foodporn) and tag for blogposts and YouTube videos to provide more searchable content. (It should be noted that blind searches for anything which includes the word "porn" is likely to yield at least some non-food-related pornographic content.)

A final popular manifestation of the food porn trope is in the representation of food media personalities in sexually suggestive poses. This includes single features, for example, the spread in *FHM* in 2003 featuring US celebrity chef and talk-show host Rachael Ray wearing very little in a series of kitchen scenarios (holding a pie, taking a turkey out the oven, licking a wooden spoon). British celebrity chef Nigella Lawson, who is routinely referred to as the "queen of food porn" (Rousseau 2012), appeared in December 2007 on the front cover of *Stylist* magazine with caramel dripping down her face and hands (the story was a feature on Lawson's "love affair with salted caramel"). The trend is not confined to women. Anthony Bourdain posed naked holding only a large bone for *My Last Supper*, a book on chefs and their ideal final meals by Melanie Dunea. (Despite his early moniker of "The Naked Chef," Jamie Oliver has not posed or appeared naked in public.)

Satire and Criticism

Despite the lack of a single definition of food porn, and some debatable arguments about its function, its existence as a cultural phenomenon is incontrovertible. This is indicated both by its

widespread positive use, and also by satirical and critical responses to the trend.

In 2006, British journalist and broadcaster Charlie Brooker presented a segment on his *Screenwipe* television show in which he sits in front of the television and questions whether it is true that "food is the new porn" (Season 2, Episode 3). Interspersed with Brooker's dialogue are sights and sounds from a television advert for a "gourmet salad with caramelized pears and creamy Stilton," which includes said ingredients falling into a bowl. "Oh, you dirty piece of cheese," offers Brooker, before the advert introduces "pork pie in rich crust paste" and "extra sweet handpicked fresh cherries." As voice-over concludes that "this is not just food," Brooker responds by standing up abruptly, unfastening his belt and saying "You're damn right it's not, it's food that about to be f**ked silly." While consistent with Brooker's provocative style, by intentionally misinterpreting the trend as encouraging actual sexual activity with food, the segment challenges what food porn actually means and what an appropriate response to it is, or should be.

Other examples of criticism include implications that food porn exists as an index of inappropriate and uncritical adulation of food and cooks. Commenting on the language used in one restaurant review, UK restaurant critic AA Gill concluded that "That's not a review of Chef's Table at Brooklyn Fare – it's a handjob" (Gill 2012), while the food critic for *The New York Times* has indicated that seeing words like "sinful" to describe food makes his "skin crawl" and that "The Times would probably frown on orgasmic, with good reason" (Wells 2012). Regarding this "sexualisation of food in our culture," one argument holds that rather than representing the "pornification of everything," food porn represents the "foodification of everything" (Poole 2011). This notion of over-attention to food is satirized in a song titled "Eat It Don't Tweet It," also billed as the "Instagram Food Porn Anthem," and on the website Pictures of Hipsters Taking Pictures of Food (pohtpof.tumblr.com).

Academic criticism includes the view that because "representations of sex combined with

food are not per se transgressive," food porn is "boring" (Probyn 2000), and the argument that the term's critical usefulness lies in recognizing the potentially problematic relationships with food concealed beneath the "playful banner" of food porn (Rousseau 2012).

Artistic responses have included series of photographs like those by artist Laura Letinsky which, contra the prevailing style of "flawless" food, depict scenes of half-eaten food and stained tablecloths designed to explore the "problem of the illusion of perfection," while Stephanie Gonot's "Fad Diets" comprises representations of popular dieting trends, for example, a dirty ashtray and a Diet Coke can or lemons, maple syrup, and cayenne (ingredients of the "Master Cleanse" diet).

Food Porn, Disordered Eating, and Ethical Considerations

A more serious form of criticism of the food porn trend are numerous suggestions that its ubiquity reflect and contribute to a widespread disordered relationship to food. In some cases this extends to what are recognized as bona fide eating disorders like anorexia, bulimia, binge-eating disorder, and EDNOS (Eating Disorder Not Otherwise Specified), used to describe individuals who do not meet the diagnostic criteria of eating disorders listed in the current DSM (Diagnostic and Statistical Manual of Mental Disorders).

A YouTube video posted in April 2012 features Kati Morton, an "Eating Disorder Specialist," on the topic of food porn. She introduces the topic as one which may "sound a little weird, maybe even creepy or dirty" and then qualifies that she is "calling it food porn, but you could also call it eating disorder porn in general: things that we do to feed our eating disorder." She further distinguishes between behavioral activity such as bingeing, restricting, or purging and the activity of seeking out "external stimuli" or "any kind of media" to fuel an eating disorder. Cooking shows are noted as a prime example, followed by recipe websites, filled with recipes of things "we will probably make but maybe

never eat." It is the facility of media to induce the activity of "just fantasizing about food" that qualifies it as "porn" (in Morton's definition, eating disorder porn is not limited to food media, but also includes, e.g., fashion magazines featuring underweight models). In this context, food porn is registered as potentially harmful to the eating disorder sufferer because it really is intended as a substitute for eating. Morton's advice to viewers is not to stop the activity of consuming food porn "cold turkey," but rather to register the behavior as an unhealthy activity.

More directly critical of the industry that produces food media is surgeon, author, and television personality "Dr. Oz," who in a 2012 episode of his talk show invited food media personalities to debate the "dangers of food porn," which in his view include that it can "make you fat." To this end, he introduced someone he described as a "victim of food porn," who had allegedly gained 20 lbs as a result of her "addiction" to food television. The opening voice-over explained the "science" behind the argument, namely, that it "turns out, simply looking at tantalizing foods lights up the same pleasure centers in your brain as sex, making you yearn for the pleasure of those high calorie, indulgent dishes you see. And just seeing images of luscious, delicious food releases the hunger hormone ghrelin, which drives you to devour those same foods." Dr. Oz further claimed that popular competition shows like *Top Chef* and *Masterchef* leads viewers to falsely believe that they can recreate a "food porn fantasy," just as consumers of pornography could be led to think that they can recreate unrealistic sexual scenes (this is the argument that pornography normalizes a distorted view of sexuality). But whereas pornography is "self-limiting" – because sexual climax is typically an end point – what he sees as the "danger" with food porn is that people can return countless times to food to reenact that "orgasmic response" and, in so doing, eat to excess.

Restaurateur Joe Bastianich, one of Dr. Oz's invited guests, raised the definitional problem of whether any "beautiful picture of food" is "necessarily food pornography" and, touching on some of the ethical debates also surrounding the

consumption of non-food pornography, whether food porn has a "necessarily negative connotation" (there exists a noteworthy schism between feminist philosophers who are "anti-porn," viewing the industry as negative and damaging, and those who are "sex positive," or "pro-sex," who see both consuming and taking part in pornography as a means of self-assertion). Arguing that it is ultimately up to the consumer to choose what and how to consume, Bastianich pointed out that First Amendment protects both the right to engage in S&M and to enjoy "double cheeseburgers with bacon." But he added that if what is celebrated as American food culture is a culture of excess – competitive eating, 8,000 cal dishes, and the like – then "we do ourselves and our country, where childhood obesity is an epidemic, a great disservice."

These examples and debates suggest that ethical issues related to the production and consumption of food porn share some of the considerations related to non-food pornography. This broadly relates to function: does either serve a purpose? If so, is it a "good," "useful," or "bad" function? (Conversely, is it acceptable to be interested in something with no discernible purpose?) Further interrogating function includes questions about health and well-being: critics of pornography are concerned with whether its consumption contributes to sustaining an unhealthy relationship to sex. Similarly, does enjoyment of images of food in any way contribute to disabling rather than enabling a particular person? Also pertinent are questions of control and responsibility: some argue that pornography incites to violent and destructive behaviors. When it comes to food porn, if images and descriptions of food tempt someone to eat, can they control their urges? Should they need to? Whether yes or no, can they take responsibility for their actions? If they cannot, who should? Finally relevant is the value attached to freedom of speech and choice: does anyone have the right to interfere with a person's decision to consume whatever he or she wants, whether on a screen or on a plate?

It should finally be noted that various categories of pornography involving food do exist, which should not be confused with food porn as

discussed in this entry: feeding porn comprises pictures and videos of overweight and obese women (men rarely feature) in provocative poses. Feeding porn is a subgenre of "fat fetishism" and is distinct from the phenomenon of "belly stuffing," featuring thin women eating until their bellies are distended.

Summary

A 2012 advertisement for Sugar In The Raw (a brand which includes an "all-natural" sugar and non-nutritional sweetener) features a picture of two cupcakes on a plate with the cherries on top censored as if they were nipples on a pair of breasts. The image – one in a series of similar photographs – does well to summarize the key features of food "porn" in media. Firstly, it is ubiquitous, meaning it has strong enough cultural currency to be exploited in advertising. Secondly, like pornography, it operates largely on the provision of illusion and on the generation of fantasy. Whether intended as prelude to, or substitute for, actual enjoyment of food remains debatable. Thirdly, while playing on the association between the shared pleasures of food and sex, it simultaneously reinforces various stigmas attached to both.

Cross-References

- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Gluttony](#)
- [Gustatory Pleasure and Food](#)
- [Medicalization of Eating and Feeding](#)

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Food Addiction

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Synonyms

Abuse; Addiction; Alcohol; Dependency; Food

Introduction

This entry examines the question whether foods can be substances to which people become

addicted. Is "food addiction" a defensible and plausible concept? Immediately several important questions and concerns arise. The first is the more general question: "What is addiction?" The second is whether certain foods or their "use" fall within accepted models of addiction. Can foods be "used" and have similar deleterious effects as the more paradigmatic drugs of alcohol, cocaine, and nicotine? The third concern involves the sorts of food that can be addictive. Fourth and fifth are the health implications for individuals and the public health implications that food addiction is causing an obesity epidemic. The sixth concern involves individual, social, and corporate responsibility for the causes and consequences of food addiction. The entry ends with a discussion of what food advocates and the food industry might learn from the Tobacco Master Settlement Agreement in 1998 that effected a significant cultural shift about smoking.

What Is Addiction?

This is the perennial question that has most often been framed in terms of alcohol use and then extended to other drugs such as cocaine, heroin, nicotine, or methamphetamine. For this discussion, the focus is solely on particular substances as addictive, thus sidestepping the question whether behaviors or processes such as shopping, having sex, or gambling can be addictive.

"Addiction" is a remarkably connoted concept that is used with a fair amount of elasticity by neuroscientists, medical doctors, psychology, addiction counselors, and lay people who identify as addicted. Psychologists and psychiatrists tend to rely on the Diagnostic and Statistical Manual of Mental Disorders-IV where the terms "substance abuse" and "substance dependency" are used (American Psychiatric Association 2000). In terms of diagnosing substance abuse or dependency, the focus is primarily on the worsening effects the drug use has over time. With substance abuse a person may over the course of a year fail to meet important social or professional obligations, find herself in more physically hazardous conditions, face legal problems from her use, or

experience social and interpersonal troubles. A person who becomes dependent has problems that exceed these and experiences at least three of the following in the course of a year: a higher tolerance, which in turn requires greater amounts of the drug to achieve the desired high, withdrawal in the absence of the drug, an inability to control consumption, attempts to control or cut down, more time spent managing drug use, and continued use despite increasing physical and psychological costs. If individuals' consumption of food begins to follow similar patterns, this is evidence for the claim that food is a substance that people can consume abusively and dependently.

Neuroscientists are more inclined to use the term "addiction," tying the term to responses in the brain. Neuroscientific studies on addiction generally characterize addiction as involving two distinct behavioral traits: compulsion to use and impulsivity. Compulsion is often taken as cravings (in the case of humans) and drug-seeking behavior (in mice). These are regarded as quantifiable in both animals and humans.

Scientists draw a distinction between cognitive impulsivity (delayed gratification) and behavioral impulsivity (inability to withhold a response). Cognitive impulsivity is measured as the increased choice of small immediate over large delayed rewards (Olmstead 2006). The working hypothesis now is that impulsivity is largely governed by both serotonin and the pre-frontal cortex systems. When the serotonin level is too low, chances are greater that there will be less impulse control, and thus a higher chance of addiction. If the serotonin levels can be manipulated in the brain, there is a greater chance of heading off addiction. While these studies are in their infancy, this emerging explanation for why some people become addicts hypothesizes that the brain's pleasure circuitry is malfunctioning. This circuitry is largely a matter of dopamine; those who have addictions seem to have a suppressed dopamine signaling ability. This means that it takes much higher levels of stimulation to reach the level of satisfaction that others reach with moderate indulgence. Many substances and circumstances can bring about

pleasurable responses, but alcohol, cocaine, and nicotine seem especially to light up the pleasure circuitry, hence their addictive allure for some. This allure prompts many researchers to describe the brain as being "hijacked" by these drugs. Can certain foods cause the same responses? If so, then this is an argument for the concept of "food addiction."

For the purposes of this entry, "dependency" as described in the DSM-IV and "addiction" understood in terms of impulsivity and craving are complementary if not identical. The terms pick out the same phenomena but perhaps highlight different features. Tolerance, for example, is a physiological response. Attempts to curtail drug use and fail may well be a consequence compulsion and a lack of impulse control. Thus, for the remainder of this entry, the term "addiction" shall be used since that is the term that has been attached to "food."

Food as Addictive

Does the consumption or use of food produce corresponding behavior for a diagnosis for dependence and/or biochemical reactions in the brain? If the consumption of food fits within both the DSM-IV model and the one emerging in brain science, this is a compelling case for food addiction. Should the consumption of certain foods fit these two models, it is appropriate to shift language from "consumption" to "use." Beginning with the DSM-IV criterion concerning tolerance, studies show that individuals come to require greater amounts of food to reach a point of satiation. There are also reports of dysphoria and anhedonism that follow from stopping or curtailing food consumption. One recent study showed that lab rats addicted to sugar water showed significant withdrawal symptoms including shakes and tremors and anxiety when researchers were able to block the sugar high via a drug (Avena et al. 2008). Additionally, the attempts to curtail or cease the consumption of certain foods become more frequent even as a person becomes more aware of the risks and hazards that follow from the overconsumption of

certain foods (Gearhardt et al. 2009). Thus, there is a *prima facie* case for food consumption becoming addictive.

With respect to neuroscientific approaches to addiction that center on brain function and particular regions of the brain, food consumption produces similar responses in the pleasure circuitry. Laboratory animals preferred intense sweetness over cocaine (Lenoir et al. 2007). Additionally, experiments with laboratory animals demonstrate strong physical cravings (Cheren et al. 2009). And more recently, brain imaging has shown that the pleasure circuitry in the brain can be affected by certain foods in the same way as alcohol and other drugs (Cheren et al. 2009). The brain may become desensitized as a consequence of reduced activity in the region of the brain that registers reward. Impulse control is hampered and the ability to inhibit behavior is diminished. In people who identify as having troubles with food, photographs of the foods on which they binge may act as a trigger (Wang et al. 2011). Additionally, the physical symptoms of withdrawal mentioned above provide evidence for the claim that the consumption of certain foods produce biochemical responses in the brain that are analogous to the responses produced by drugs such as alcohol and cocaine.

Are All Foods Addictive?

Do all foods have the same potential to be consumed in deleterious ways in ways noted in the DSM-IV and adversely affect the brain's pleasure systems? Not all foods are created equal in this regard, with emphasis on "created." Some foods are what researchers have called "hyperpalatable" (Gearhardt et al. 2011). Foods in this category are highly processed foods with significantly elevated amounts of salt, fat, sugar, or other sweeteners and with many added ingredients for preservation and appearance. An apple, for example, is one thing/has one ingredient which is "apple." A medium apple has 19 g of naturally occurring sugar, 0 g of fat, and 2 mg of sodium. Eating an apple will produce some pleasure. A medium chocolate ice cream cone from

Dairy Queen has 22 ingredients and has 34 g of sugar, 10 g of fat, and 160 mg of sodium, making it a hyperpalatable food for many persons. In these people, consumption of that ice cream cone will produce a far more pleasurable response than eating an apple. Humans produce opioids, the active ingredient in cocaine, for example, when digesting excess amounts of sugar and fat (Cheren et al. 2009). Many people eat not just for sustenance but for pleasure, and opioids provide pleasure. On either addiction model, the tolerance of people who are progressing toward addiction will increase, beginning the cycle of needing to eat greater quantities of certain foods or find new and different foods with greater amounts of sugar, fat, and salt in order to reach satiation and their pleasure threshold.

It is important to note that there are arguments against food addiction. The scientific study of addiction in general and food in particular is still in their infancy. Given that neuroscience has only recently entered the scene and has not yet offered a definitive explanation of the effects of drugs such as alcohol or cocaine, one ought to be very cautious in extending the concept of addiction to food. Someone might also object to the extension of addiction to food on the basis of the DSM-IV criteria. One might ask if people truly experience an "increased tolerance" that is truly measurable. One might also ask if there is a viable comparison between the suffering of the heroin addict in withdrawal and withdrawing from hyperpalatable foods. These two criticisms are important and ought to have a proper airing. They do rest, however, on the assumption that there are "real" or "true" addictions that serve as the model for other substances. The most radical challenge to food addiction would take the form of denying the reality of any addictions.

Implications for Individuals

Discussions of addiction are almost always accompanied by questions about choice and responsibility. While "addiction" is a relatively new term, "drunkenness" and "inebriety" are not.

Typically drunkenness was regarded as a character flaw in a person who suffered from weakness of will. While psychiatry, psychology, self-help groups, and most recently neuroscience have effected a shift away from this view, there are still strong vestiges of it. Alcoholics and drug addicts, especially in contexts framed by the 12-step approach of Alcoholics Anonymous, recommend total abstinence in order to recover or have sobriety. This raises the question of what is the equivalent of sobriety for food addiction. It is possible to live without alcohol or nicotine but not so with food; total abstinence is not an option. This is where a model of harm reduction might be helpful. Harm reduction focuses on lessening the harm or injury caused by alcohol or drugs through moderation. Moderation may lead to abstinence, though it may not be necessary for all. With respect to food addiction, a harm reduction program may prompt one to eliminate certain categories of food while allowing others in moderation.

Food addiction may also lead to major health concerns including diabetes, hypertension, and short life expectancies. When considered from not just the perspective of individuals but from the perspective of the population as a whole, there are potentially significant public health concerns.

Public Health Policy Implications of Food Addiction

Some argue that “the obesity epidemic” is a consequence of food addiction (Cocores and Gold 2009; Gold et al. 2009). The assumption is that an individual becomes obese because he eats compulsively and is unable to refrain from doing so even or especially when he has a desire to do so. He may be motivated by significant physical cravings. A recent study show that overconsumption of fat may further stimulate the intake of fat (Cheren et al. 2009).

While individuals are obese, the “obesity epidemic” is understood as a condition or disease of a culture or society. The “epidemic” is considered as real/has the same ontological standing as individuals who have the illness. Calling something

an epidemic carries with it the assumption that a culture or society is at great risk from that illness. Arguing for or against the obesity epidemic is beyond the scope of this entry. Regardless of the reality of the “epidemic,” these costs – economic, social, political, and ethical – raise important questions about responsibility.

Responsibility for the Consumption and Production of Hyperpalatable Foods

If certain highly processed foods have the potential to be as addictive as cocaine and heroin, then how should the production, distribution, and consumption of these foods be conceived? Where does responsibility for food addiction rest? The question about responsibility with respect to other addictions has always been a contentious one. For quite some time, addiction was thought to be a matter of choice and that people choose whether and how to consume a particular substance. If a person develops into an addict, the typical thinking that he has been making choices along the way and responsibility rests firmly with him.

Responses to food addiction and public health concerns about obesity have largely been directed to individuals and their choices and actions. The argument goes: Were individuals to eat less and exercise more and enjoy food in moderation, then there would not be the same overconsumption that causes people to become obese. The source of the problem is identified as overconsumption and other lifestyle choices that individuals make. On this view, weight gain, loss, and maintenance is a consequence of calories used and calories burned. The food industry argues that a calorie is a calorie, regardless of the package in which it comes. While it is possible for some to strike the right balance between calorie consumption and expenditure by making all the necessary lifestyle changes, it may be so labor and time intensive that most people are unable or unwilling to do so. This focus on individuals changing their lifestyles and their behaviors and attitudes about food might mirror the experiences of alcoholics in recovery. If food addiction is as real as alcohol

addiction, then the means and methods for recovery or sobriety might be similar. Overeaters Anonymous, for example, formulates its 12 steps on the basis of Alcoholics Anonymous. A harm reduction approach, as discussed above, recommends moderation.

The issue of choice, however, has come under greater scrutiny against the backdrop of addiction as a matter of biochemical responses in the brain. If some people are born with or come to have lower levels of serotonin or dopamine, their chances of developing an addiction are greater. If these levels are not within an individual's control, then in some sense she is not responsible for developing an addiction. The chemistry deck was stacked against her, perhaps even before she took her first drink or puff of a cigarette. On the pains of inconsistency, one would need to hold that the same holds true for food addiction.

There has always been a strong link between choice and responsibility. A traditional approach is that people are responsible to the degree to which they can make choices when they are reasonably fully informed and acting in the absence of coercion. Where information is lacking or there is some element of coercion, responsibility is mitigated. Instead of conceiving of responsibility as it relates to addiction as being a toggle switch having only two positions (on = total responsibility and off = no responsibility), responsibility for addiction rests in many places to varying degrees. Yes, individuals do make many choices along the way about what they eat, for example. People choose to eat foods they know are high in fat or calories. They choose to eat these foods often and to excess. But individual actions do not exhaust the domain of responsibility.

Another dimension of responsibility involves the content of the choices and the conditions under which choices or options are made possible. In terms of food, the contents of the choices are quite literally the ingredients. If the industrial food complex is creating more and more of the hyperpalatable foods and these foods have been shown to be potentially as addictive as illegal drugs such as cocaine and heroin and a legal drug such as alcohol, then what responsibility

do these food companies bear? This question will make many people uncomfortable since it would appear to indict much of the food industry from the producers and distributors of food products to the grocers who sell these foods. As more hyperpalatable foods are produced and sold at affordable prices, the demand for them will grow, thus diminishing the demand for regular or traditional foods. In the face of declining demand, more space will be allocated for food-stuffs that sell. Thus, there is an appearance of more options on your grocer's shelves due to market segmentation of these hyperpalatable foods, but in reality, choices have constricted when traditional or less highly processed foods disappear.

To many people, conceiving commercial food creators and producers as drug pushers is incendiary and polemical. But if it is granted that certain foods can be addictive because they are hyperpalatable and the research and development divisions of companies are constantly increasing this level of hyperpalatability, then the space to discuss the responsibility that companies bear for the significant monetary and health costs that follow from food addiction needs to be opened. Many argue that this requires more robust accounts of corporate responsibility.

Learning from the Tobacco Industry

Moving concerns about the creation, production, distribution, and consumption of addictive foods into a public health model may be helpful for developing a multiprong approach to lessen the potential health crisis. This was the case with tobacco products. For years, tobacco companies were aware of the addictive qualities of nicotine and the harmful effects of smoking. Tobacco companies used chemical additives to enhance the pleasure of smoking tobacco. In effect, they created hyperpalatable tobacco products. Companies created more products that were aimed at particular demographics in order to cultivate brand loyalty. Prior to 1998, the tobacco industry had won the vast majority of individual lawsuits filed against it because they could claim that

smokers chose to smoke knowing the dangers. The Attorney General from the state of Mississippi sued because the state was paying for the healthcare of sick smokers. Soon, the Attorneys General of several states filed suit as well. Ultimately, the industry settled for \$246 billion dollars to be paid out over 25 years to the states. It was also the death knell for Joe Camel and the Marlboro Man in cigarette advertising. Might Tony the Tiger meet a similar fate? Should the estimated healthcare costs even come close to actuality, Attorneys General may find themselves filing suits against many of the giants of the food industry.

Legislation also plays a role in the regulation of tobacco. The cost of tobacco products has increased significantly for at least two reasons. The first is a lack of governmental subsidies and the second is taxation. While the term “vice tax” is problematic, certain products such as cigarettes and alcohol are taxed at higher rates with the hope that expense will keep some people from buying and using the products. At present, corn and sugar, two of the most common ingredients in hyperpalatable foods, receive government subsidies. Government subsidies are always a contentious issue, and these subsidies in particular might be subject to closer scrutiny. Additional taxation on hyperpalatable foods may also be an option.

Advertising is also subject to regulations. Advertising plays an important role in cultivating brand loyalty and building a solid customer base. Joe Camel and the Marlboro Man were the two most readily identified icons of the smoking industry, each having its own product line. Each pack of Camel cigarettes earned the buyer points that he could use to “purchase” Camel products such as tee shirts, hats, and drink cozies. Tobacco advertising now is very strictly regulated and where they do appear, they appear with health warnings. Advertising for hyperpalatable foods may also be subject to more stringent regulation, particularly those products aimed at children.

Consumer education meets nutritional values of foods in the form of labeling on prepared foods (calories fat, fiber, protein, vitamins, number of servings). While the US Food and Drug

Administration requires nutrition labels, companies have discretion over the size of a serving. Most consumers are not aware of this fact, assuming that a serving size meets an industry standard. Companies can frame the serving size for their product and then claim, for example, “Only 100 calories per serving.” This “health-framing” is a successful marketing technique, since consumers may pick up two different brands of a product and simply compare calories, not recognizing that the serving sizes vary significantly. A study found that the most nutritionally vigilant consumers were most affected by health-framing, as counterintuitive as that may seem. The hypothesis is that guilt motivates shoppers to select the product advertising the lowest number of fat grams and calories without attending to the number of servings. One recommendation is that the FDA mandates all nutritional information be presented in a standardized way in terms of grams or ounces, for example. Such standardization would make it easier for consumers to compare across products (Mohr et al. 2012). Something similar happened in the alcohol industry in the United States. A standard drink is 12 oz beer, 8 oz malt liquor, 5 oz wine, and 1.5 oz (a shot) or 80 proof distilled liquor. The standardization in principle allows people to more accurately monitor and perhaps moderate consumption.

Federal and state governments singled out children smoking for educational and policy intervention. The same is happening with children’s food choices and eating habits. Studies have shown a relationship between first use of alcohol and the likelihood of developing alcoholism (Agrawal et al. 2009). The claim that a similar relationship might hold with food is more contentious, because there seems not to be a food equivalent of “first use” since humans eat from birth. State governments, in response to rising concerns about the health of young people, have become more involved in regulating the types of food available in schools.

California banned the sale of soda drinks from grade schools in 2002 and then later extended that ban to high schools. The state also initiated rules about the nutritional value of foods that students

could have at schools, especially what was available in vending machines. A recent study found that California students have the lowest intake levels of sugar, fat, and calories than students in other states (Taber et al. 2012).

Summary

This entry has explored the question whether food like other substances such as alcohol, cocaine, and nicotine can be addictive. An affirmative answer to this question raises important implications for individuals as well as for the population as a whole. Questions of responsibility are addressed both at the level of an individual's consumption of food and at the level of the manufacture of food. Finally, the Tobacco Master Settlement may provide some lessons for a multiprong approach to food addiction.

Cross-References

- ▶ [Alcohol Abstinence and Sobriety](#)
- ▶ [Alcohol as Food and the Good Life](#)
- ▶ [Corporate Social Responsibility and Food](#)
- ▶ [Food Labeling](#)

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Food Additives and International Trade

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Synonyms

ADHD; Cancer; Consumer sovereignty; Food ethics; Food safety; Precautionary principle; Toxicology tests

Introduction

This entry aims to outline major ethical concerns relating to food additives and to identify the consequent trade-related issues. It begins with a brief account of the functional and economic rationales for using food additives in processed foods, proceeds to an identification of the ethical concerns associated with their use, and then examines the ways in which these concerns have been addressed. In conclusion, the entry discusses some implications of the ethical analysis presented for international trade in foods containing additives.

Background

Several thousand different chemicals are currently added to processed food. The use of food additives has been integral to developments in the global food industry over recent decades, which are characterized by terms such as “agribusiness” and “food processing.” In consequence, the traditional links between agricultural raw materials and food products have been progressively eroded in a process in which farm products are reduced to simple industrial inputs such as proteins, carbohydrates, and fats. These inputs are then reconstituted in “manufactured” foods, which possess many commercial advantages, e.g., longer shelf life, convenience in processing, and standardized composition. As a result, food has become more heterogeneous, with specific products formulated by novel processing techniques that impart the products with “added value,” i.e., they are more commercially profitable.

According to Roberts, “as production has become almost entirely automated, with vegetables diced, meats ground, batters mixed, doughs extruded, and ready-to-serve dinners assembled, all by computer-controlled robots at rates of thousands of units per minute, the food itself has had to be amended, often significantly, to tolerate the process.” The use of additives has thus served to “repair the damage done to the food during manufacturing,” e.g., with artificial colors added

to restore those lost in cooking and pulverizing and synthetic flavors used to replace easily damaged natural flavors. Often addition of a single substance, like monosodium glutamate, can substitute for the range of natural flavors of meat without most consumers noticing the difference.

Additives also allow manufacturers to economize on the cost of natural ingredients by avoiding the problem of their frequently limited supply. Moreover, the shelf life of foods can be extended and considerable economic savings made by simplifying the complex procedures involved in cooking. These commercial advantages apply particularly to “fast food.”

Categories of Food Additive

European Community (EC) legislation defines a food additive as “any substance not normally consumed as a food in itself . . . the intentional addition of which to food for a technological purpose . . . results . . . in it or its by-products becoming directly or indirectly a component of such foods.” In the European Union (EU), all additives are assigned E numbers (Table 1).

Some additives are natural substances and others synthetic, but the distinction is blurred when naturally occurring substances are

Food Additives and International Trade, Table 1 Categories and examples of food additives regulated for use in the EU

E numbers	Category	Examples
100–199	Colorants	Sunset yellow, tartrazine
200–299	Preservatives	Sulfites, benzoates
300–399	Antioxidants, acidity regulators	Ascorbates, phosphates
400–499	Thickeners, stabilizers, emulsifiers	Alginates, natural gums
500–599	Acidity regulators, anticaking agents	Mineral acids and bases
600–699	Flavor enhancers	Glutamates, inosinates
700–999	Miscellaneous	Waxes, cyclamates, saccharine
1000–1999	Additional chemicals	Lipases, ethanol

synthesized in the laboratory and might thereby acquire unwelcome contamination. Perhaps more problematical are those additives that are xenobiotics, i.e., substances not normally produced or present in the human body, the metabolism of which might be considered of greater concern for consumers' health.

Millstone and Lang (2008) reported that, in terms of global market share, approx. 40 % of additives were used to affect the taste, 30 % the texture, and 5 % the appearance of food. Nearly 20 % served as processing aids, and only about 5 % were added for safety reasons to protect consumers from bacterial food poisoning and rapid deterioration of food quality. The latter are crucially important, e.g., in inhibiting the growth of bacteria causing conditions such as botulism, which is a serious form of food poisoning. On average, in industrialized countries, each consumer ingests 7–8 kg of food additives p.a., an amount costing food manufacturers about US\$20.

However, recently, EU regulations on additives have changed to include food flavorings. Formerly, several thousand artificial flavorings were permitted largely according to the same criterion that the US Food and Drugs Administration (FDA) designated “generally recognized as safe” (GRAS). But EC regulations are currently being amended to establish a common authorization procedure for food additives, food enzymes, and food flavorings.

The term “additive” does not generally apply to substances added to food unintentionally, such as packaging migrants, agrochemicals used in crop production, or drug residues resulting from treatment of farm animals. Although these substances are often matters of ethical concern, neither they nor substances intentionally added to so-called functional foods (Mephram 2011a) are discussed here. Moreover, while not classed as food additives, sugar and salt are also added substantially to many foods, and it is arguable that the resulting adverse public health consequences, e.g., in terms of heart disease and obesity, may be far more serious than for many of the food additives discussed in this chapter.

The vast majority of additives raise few concerns in terms of consumer health, but for a significant number, their use is ethically problematical. According to Millstone and Lang (2008), doubts have been raised about approximately 200 food additives, which are claimed to cause acute intolerance or allergic reactions in certain consumers or to increase the risks of serious long-term harms, such as cancer. Unsurprisingly, such claims result in a significant level of public concern. For example, in the EU, 25 % of people surveyed in 2010 were “very worried” about food additives, and a further 41 % were “fairly worried” (Eurobarometer 2010) – data that show a significant increase from an equivalent survey in 2005.

In response to these findings, in 2012 it was reported that it was proposed to reevaluate all existing additives with an E number, a task which was planned to be completed by 2020 (European Food Safety Authority 2012).

Regulation of Food Additives in the EU

EU legislation on food additives requires that their use be explicitly authorized, which itself depends on satisfying three conditions (European Commission 2011), viz.:

- There is a technological need for their use.
- Potential consumers are not misled.
- The additive presents no hazard to consumers' health.

Authorization for the sale of foods containing additives is only granted after they have been evaluated for their safety by expert panels, e.g., that advising EFSA. But outside the EU, other regulatory bodies not only define additives differently but also set standards that may differ appreciably from each other, a situation that inevitably complicates matters in a globalized food market.

For the discussion of ethical concerns relating to food additives, reference is here made, in the first instance, to the situation in the EU. The implications for international trade in foods of the different arrangements in other nation states are discussed in a later Section.

Ethical Concerns

Whether the three preconditions for authorization of food additives in the EU, listed above, are always adequately observed is subject to debate. Thus, crucial ethical issues concerning food additives may be classed as:

- Consumer sovereignty, i.e., consumers' ability to act on their informed judgments about additives
- Risks of any harms to consumers' health resulting from additive consumption
- The adequacy (and usually adverse effects on laboratory animals) of mandatory safety evaluation procedures

These issues, with the exception of that concerning effects on laboratory animals (recently addressed by Mephram 2011b), are now discussed in turn.

Consumer Sovereignty

This refers to individuals' status in respect of their informed choices over what they consume, the term implicitly echoing the time-honored maxim "the consumer is king." It is thus one aspect of the broader concept of autonomy, a vital feature of human rights. In relation to food, there are strong reasons why consumer sovereignty demands explicit respect. Thus, (i) food has the capacity to profoundly affect consumers' well-being, positively or negatively; (ii) any effects may not be evident until a food has been consumed for a long period (e.g., over many years); (iii) sensory inspection is not always a reliable means of assessing food safety; and (iv) the complex ways nutrition interacts with other factors, such as individual genetic predispositions or lifestyles, coupled with the low precision with which outcomes can be forecast, mean that informed food choices are intrinsically difficult.

Currently, many widely consumed foods contain several food additives, which it is necessary to assess in the context of consumer sovereignty. Three ethical principles are customarily taken to define consumer sovereignty, viz., the target consumer should have:

- The capability of understanding the product and any associated risks
- A choice of goods, provided by competition
- Sufficient information to judge how expectations of the goods are satisfied

Whether these principles are adequately respected spans a range from, at one extreme, a familiar, naturally occurring, additive raising no safety concerns to, at the other extreme, a case in which the additive is an unfamiliar, synthetic chemical, and employed, e.g., to give the food a vivid color.

But many consumers are often not in a position to make sound decisions on such matters. This is because food preparation and distribution in the form of prepared meals often deny them realistic opportunities of making informed choices. Arguably in such cases, consumers might be said to forfeit their autonomy. But an alternative interpretation is that their autonomous actions involve placing trust in the regulatory bodies that governments invest with the authority to adjudicate on food safety. The crucial question then becomes whether the trust demonstrated is justified by the trustworthiness of the appointed trustees.

Several factors affect trustworthiness. Notably, consumers' opinions depend on perceptions of the competence and motivation of regulatory authorities. But large numbers of other individuals are also involved in ensuring food safety, e.g., scientists and technicians performing tests on laboratory animals and administrative staff responsible for collating results. The evidence obtained is then subject to the judgments of government advisory committees pronouncing on acceptable safety standards, the accuracy of quality control procedures in food manufacturing establishments, and the effectiveness of trading standards officers in monitoring international transactions. Skeptical consumers might perhaps question the intrinsic instability of such long chains of responsibility.

Arguably, the central problem of consumer trust is one of the trustworthiness of regulatory authorities, and recent history has unfortunately provided numerous examples in which they have fallen short of consumers' expectations.

Thus, before the link with new variant Creutzfeldt-Jakob disease (nvCJD) in some British consumers was established, there were repeated governmental assertions that beef from BSE-infected cattle (i.e., with bovine spongiform encephalopathy) was safe for human consumption. And globally, there have been many other reports of defective food safety regulation. Hence, the public trust sought by the policy-makers (the trustees) will only be achieved when trustworthiness is *won*: people cannot simply *decide* to trust others.

These difficulties are undoubtedly compounded by the effects of food advertising. For example, the Yale Rudd Center estimated that \$4.2 billion was spent in 2009 on fast-food advertising in the USA, an amount vastly exceeding the \$6.5 million budget of the USDA's (United States Department of Agriculture) Center for Nutrition Policy and Promotion – the remit of which is to “improve the health and well-being of Americans by developing and promoting dietary guidance” (Harris et al 2010). Given the enormous disparity in financial investments, the authenticity of the concept of consumer sovereignty must surely be questionable.

In summary, critical ethical issues concern (a) the extent to which all consumers are able to make, and act on, sound judgments concerning the safety and acceptability of food and (b) the perceived trustworthiness of regulatory authorities and of the many components of the food supply chain.

Risks of Harm to Consumers

Claims have been made that additives are directly responsible for a wide range of disease conditions. Although some alleged associations are probably ill-founded, there seems to be strong *prima facie* evidence for certain claims. Several public interest groups have drawn up lists of additives they consider should generally be avoided or treated with caution, especially by sensitive individuals, e.g., the US Center for Science in the Public Interest.

In theory, safety assessments of food additives might be based on two types of evidence, viz.,

epidemiological data and results of toxicological tests. In practice, because of the complexity of people's diets, lifestyles, and genetic predispositions, it is only rarely possible to derive useful data from epidemiological studies. Exceptions to this generalization almost prove the rule. For example, acute adverse reactions to foods known to contain certain substances (as in the rapid onset of asthma attacks or other allergic reactions to certain colorants) may be strongly suggestive of causal links.

Acute Effects

Ben Feingold, a Californian pediatric allergist, proposed in the 1970s that certain artificial colors and flavors cause hyperactivity in children, now classed as “attention deficit hyperactivity disorder” (ADHD). His recommended additive-free diets found support from many, but were often disparaged by mainstream medical practitioners.

Recently, more substantial evidence for such neurotoxic effects has been provided, notably by a dietary intervention study funded by the UK Food Standards Agency (FSA). The study involved healthy children who received fruit drinks containing various levels of six colorants and one preservative additive. The authors concluded that, in contrast to consumption of placebos, “artificial colours or a sodium benzoate preservative (or both) in the diet result in increased hyperactivity in 3-year-old and 8/9-year-old children in the general population” (McCann et al 2007). The colorant additives identified as potential causal factors in ADHD responses were sunset yellow (E110), quinoline yellow (E104), carmoisine (E122), allura red (E129), tartrazine (E102), and ponceau 4R (E124).

Consequently, the FSA recommended that manufacturers and retailers find alternatives and that carers avoid them if concerned about their children's behavior. Although, initially, the EFSA was skeptical, after performing a reevaluation of several sets of data, the recommended acceptable daily intakes (ADI) of

E104, E110, and E124 have now been reduced (European Food Safety Authority 2010).

Soft drinks are also the subject of much concern because there is recent neurophysiological evidence that, in addition to their neurotoxicity, additives can become addictive (Gearhardt et al. 2011), which might well be a critical factor in the rapidly increasing incidence of obesity that is evident worldwide.

Chronic Effects

If establishing causal factors of acute effects is problematical, doing so for chronic effects is usually even more difficult, and the intrinsic imprecision of many evaluations is compounded by the fact that tests on individual additives take no account of synergies with other additives and dietary components. Consequently, there is an almost complete reliance on toxicological studies on animals to provide quantitative evidence.

The Delaney Clause, introduced into US food safety legislature in 1958, which stipulated that “no additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal,” has been a matter of contention ever since. In part, this is because it is now realized that virtually any chemical, even at a low level of exposure, might prove carcinogenic in some individuals. But, in practice, the *de minimis* principle is now often applied, whereby a risk of less than one in one million is considered negligible.

However, a recent illustration of the possible relevance of animal studies is the report that high dietary inorganic phosphate (Pi) levels in mice stimulate tumorigenesis by influencing the activity of pivotal genes for lung cancer (Jin et al 2009). These appear to be important findings, firstly because this condition has the highest global mortality rate of all cancers and secondly, because between 1983 and 1993 there was a 17 % increase in addition of Pi to processed foods (e.g., meats and cheeses) to increase water retention and texture – a trend that seems likely to continue.

In fact, a large number of other food additives (or their metabolites) have also been alleged to be

potential carcinogens in humans, including sweeteners (like saccharine, cyclamates, and aspartame), xenobiotic colorants (including the six listed above), and preservatives (such as nitrates and nitrites, which by reacting with amino acids form carcinogenic nitrosamines) (Rock et al. 2000).

Risk Assessment

The standard approach to addressing the safety of chemical hazards comprises four elements: (i) hazard identification, (ii) risk assessment, (iii) risk management, and (iv) risk communication. Historically, the elements were thought to provide a necessary separation between the scientific domain (i and ii) and the policy-makers' domain (iii and iv), thus leaving politicians with the task of managing the policy implications of the, allegedly objective, facts the scientists produce.

Accepting the insight of Paracelsus (dubbed “the father of toxicology”) that everything is a *potential* poison – the dose being the crucial factor – means that risk assessment is a major concern, on which subsequent elements are highly dependent. However, the body reacts to ingestion of a chemical in diverse ways. Thus, toxicokinetic studies reveal that different dose levels can produce varying responses in factors such as stability, solubility, absorption, protein binding, and metabolism – which may elicit markedly different end results. Moreover, there are serious concerns over whether, in extrapolating from results of animal tests, the arbitrary safety factor of 100 (expressed per kg body weight) is always adequate (Mephram 2011b).

Defined as “the probability of harm,” the significance of risk is most meaningfully expressed as the product of probability and severity, but other relevant features include the intensity, duration, and reversibility of the harm. An important consideration is the manner in which scientific assessments of risk are employed in circumstances in which legal criteria might be more appropriate. For example, it is generally accepted that in law, it would be a more grievous error to

convict one innocent person of a serious crime than to acquit ten guilty persons. Yet scientific standards insist that a causal relationship between a chemical agent and human mortality requires that the odds be, at least, reversed. Arguably, with respect of the burden of proof, the current situation for the safety evaluation of additives should accord much more with the legal approach (e.g., see Cranor 2005).

Moreover, the traditionally acknowledged distinctions between risk assessment, management, and communication are open to severe criticism. While risk assessment is generally considered an objective process that necessarily entails the rigorous application of scientific methods and probability theory, the resulting recommendations are rarely indisputable. This is because risk assessment is far from being value free. Rather, the experts who produce the data for the risk analysis are constrained by the framing assumptions of their enquiries, which include the types of question addressed and those neglected, the evidence considered relevant and that discounted, and the way the evidence is interpreted. These assumptions might seriously affect (a) the reliability of extrapolating from results of short-term tests on laboratory animals to conditions in which people consume food in the real world, (b) the time and resource investments considered appropriate for adequate testing, and (c) the skills, experience, and presumptions of the experts chosen to make policy recommendations.

At issue here is the appropriate application of the precautionary principle, which states that lack of scientific certainty should not be used as a reason to ignore or postpone preventive or remedial action when there are other good reasons to do so, i.e., the principle aims to address the problems of uncertainty. The sheer complexity of the cocktail effect of a wide range of diverse individuals consuming *inter alia* numerous food additives exemplifies the latter factor.

In summary, the critical ethical issue relating to human health concerns the effectiveness of risk assessment and management procedures employed in evaluating the safety of food additives.

Trade-Related Issues

Having surveyed the ethical concerns raised by food additives, it is now appropriate to consider, albeit briefly, the ways these issues are addressed in relation to international trade. The body established to develop global harmonization of standards for international food trade, e.g., by using an International Numbering System for Food Additives (INS), is the Codex Alimentarius Commission (CAC), which is advised by the Joint Expert Committee on Food Additives (JECFA). The latter, a joint World Health Organization and Food and Agriculture Organization (WHO/FAO) body, established in 1956, aims to provide reliable and independent expert advice and thereby contribute to the setting of standards on a global scale for the health protection of food consumers and for ensuring fair practices in the trade in safe food.

The main objectives of CAC's General Standards for Food Additives (GSFA) are to stipulate conditions in which additives may be used in foods and to establish maximum levels for their inclusion to ensure that the intake of an additive from all its uses does not exceed its ADI.

In adjudicating on international trade disputes, the World Trade Organization (WTO) implements its Sanitary and Phytosanitary Agreement (SPS). Under the terms of the SPS, risk-based standards established by CAC are employed, which in practice rely on judgments documented in the GSFA. The standards are also used in contracts between private companies. However, questions of justice may arise when considering prospective food imports from a less developed country, which has not yet established a fully harmonized food regulatory system.

Traditionally, the CAC operates by consensus, a practice that is not conducive to achieving common global standards in some controversial areas (Paarlberg 2010). For example, the CAC has approved use of several additives (e.g., aspartame), the safety of which remains strongly contested by the governments of some states. Moreover, the number of an additive in the INS list does not necessarily correspond to its E number, while some countries, including the

USA, do not use the INS. Thus, despite the goal of a globally harmonized system, this aspiration is by no means yet realized.

Summary

The aim of this review has been to examine food additives from a perspective that prioritizes concern for key ethical principles. Thus, the central issues concern the alleged “technological need” for additive use, the degrees of consumer safety and sovereignty that can be guaranteed, and the reliability of the current mandatory toxicity tests.

Arguably, the analysis presented suggests there is a strong case for significant changes in food manufacturers’ employment of certain food additives, in the levels of precaution adopted in their legal authorization, and in the reliance placed on, and conduct of, tests performed on animals. Implementation of changes based on these ethical considerations would seem certain to have important implications for the regulation of international trade in processed foods.

Cross-References

- [Food Addiction](#)
- [Food Labeling](#)
- [Food Risks](#)

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Food Advertising to Children: Policy, Health, and Gender

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Synonyms

Food and beverage marketing directed toward children

Introduction

This entry examines the policy debate on food and beverage advertising directed toward children. In particular, we address a number of normative issues for public health policy

intervention. We also consider gender dimensions of this policy debate, which have been underexamined.

Key Terms

We begin with a brief discussion of key terms: marketing versus advertising, food and beverages, and directed toward children.

The terms advertising and marketing are often used interchangeably in discussion of this policy issue. Marketing is generally understood as encompassing a broader range of issues, including the “four Ps” of traditional marketing practice: product, price, placement, and promotion. The term advertising usually refers to the promotional component of marketing. In this entry, we refer to the two somewhat interchangeably, with the understanding that broad marketing is likely the more appropriate way to consider a suite of policy interventions as well as related health and policy impacts.

Likewise, many actors would refer to food advertising as the colloquial way to refer to promotion of both food and beverages. The inclusion of beverages in what constitutes “food” has a public health significance and is also rooted in relevant jurisprudence. Beverages have received increasing attention as a significant contributor to the rise in prevalence of obesity, particularly sugar-sweetened beverages (SSBs) as an energy-dense, nutrient-poor food. This has led to public health policy interventions to limit SSB consumption among children, such as in school or recreation facility settings. Other policy proposals addressing SSBs include the widely publicized and failed proposal to reduce the largest beverage size permitted to be served in fast-food restaurants in New York City, which was sometimes referred to as a soda “ban” (the concept of public health “bans” is discussed further below). Finally, beverages are usually considered “food” in overarching legislation. For example, the US *Food, Drug, and Cosmetic Act* (c. 9, s. II, Sec. 321(2)(f)) notes that “The term “food” means (1) articles used for food or drink for man or other animals, (2) chewing gum, and

(3) articles used for components of any such article.” Similarly, Canada’s *Food and Drugs Act* (R.S.C. 1985, c. F-27, Sec. 2) notes that “‘food’ includes any article manufactured, sold or represented for use as food or drink for human beings, chewing gum, and any ingredient that may be mixed with food for any purpose whatever.”

A key phrase is “directed toward children.” The dominance of food industry self-regulatory approaches to governing food advertising has meant a great deal of dispute over what constitutes advertising that is specifically directed toward children with the intent to influence their personal consumption, versus advertising that is directed to gatekeeper adults such as mothers, or part of the general social environment in which children happen to be (also discussed further below).

Overview of the Policy Issue in Health Terms

Policy debate on food advertising to children is not new, having been part of concerns about commercial influence in society for several decades. The current imperative for intervening through public policy is principally justified in terms of the need to address evidence about adverse health and dietary impacts of marketing, among a generation of children whose life expectancy is now less than their parents.

The major global systematic reviews on the health effects of food advertising directed toward children have been the Hastings et al. (2003) review, conducted by a group in the United Kingdom and subsequently updated for the World Health Organization (2007, 2009), and the US Institute of Medicine’s (2006) report. These reveal that children are exposed to a greater intensity and frequency of advertising than ever before, including food and beverages that are predominantly energy dense and nutrient poor. The balance of evidence also indicates that advertising influences childhood food preferences, knowledge, dietary choices, and health status.

The most prominent effect appears to be on consumption (purchasing) behavior.

Policy actors worldwide have promoted three general types of strategies in terms of policy interventions to limit the negative influences of advertising on child health and well-being and/or ethical marketing (WHO 2010, 2012). The vast majority of jurisdictions have undertaken “voluntary” approaches, i.e., food industry self-regulation in the form of standards for ethical advertising practice. Several food industry and marketing industry associations worldwide have led initiatives to adopt “pledges” to alter their practices, although critics have often argued that such voluntary activity has not been sufficient to substantively alter the food advertising environment.

The “ban” or comprehensive public policy approach uses statutory regulation to limit childhood advertising exposure, although these vary from “total ad bans” (all commercial advertising) to “food ad bans” to “junk food ad bans” (also referred to as “nutrient-based” approaches) which require definition of what constitutes healthy and unhealthy food. Other jurisdictions have undertaken “stepwise” approaches that target exposures to specific types of products, in particular venues such as schools, or forms of marketing/media such as children’s television programs.

Normative Issues Arising in the Policy Debate

The public health policy discussion on food advertising to children has raised a number of normative issues. We introduce a number of prominent points here, although this is by no means intended to be an exhaustive overview.

One core set of issues asks about the role and value of advertising in society. The purpose of advertising is to promote consumption, which ostensibly is a generic market instrument that could be applied to different types of goods and services, useful, beneficial, pleasurable, and/or harmful alike. The concepts of ethical consumption, marketing ethics, ethical advertising, and

social marketing suggest that advertising is not inherently harmful, and can offer value in human life. The concept of corporate social responsibility (CSR), which has recently been updated to a notion of creating shared value (CSV), suggests that for-profit companies have social contributions to make and, also, that they are valid and important actors in societal decision-making, e.g., in the public policy domain.

A contrasting view would suggest that advertising is inherently manipulative, particularly in the presence of advancements in marketing practices based on psychological and neurological research, which include techniques aimed at shifting the subconscious. In this case, the capacity of individuals – even adults – to act freely on market incentives comes under question. The body of consumer behavior research on “mindless eating” (e.g., Wansink 2004, 2006, 2010) suggests that social and environmental cues such as large portion sizes and among advertising techniques, health claims, prompt people to eat more than they need, leading to caloric overconsumption, and more than they would if they were to choose freely without the influence of those cues. In this case, public policy intervention is deemed necessary to correct market failure in the form of information asymmetry, a lack of full and appropriate inputs for consumer decision-making.

A second set of issues speaks to the question of advertising specifically directed toward children. One dimension is about the group characteristics of children, who are generally seen as vulnerable in contrast to adults and requiring a broader range of societal protections. Another dimension, however, is to consider exactly how advertising relates to its potential audiences. Even if advertising is not inherently harmful, some would suggest that it is intended to appeal to abstract reasoning (e.g., desirability of a product) versus more concrete concerns such as material need or price. As noted above, one of the shifts in marketing practice over time has been to appeal to increasingly abstract dimensions of the relationship between people and products, such as the development of a lifelong emotional bond to a brand (sometimes referred to in child-directed

marketing as “cradle-to-grave” marketing). As such, the argument might proceed that those who lack sufficient cognitive capacity to fully comprehend the persuasive intent of marketing should not be targeted by it. One practical definition of relevant cognitive capacity in childhood that has been used in policy debate is Piaget’s cognitive stages.

A third set of issues examines the specific harms associated with advertising directed toward children. Policy proposals have largely been put forward on the basis of a range of health effects of advertising directed toward children, introduced in the section above. The overarching rationale for policy intervention that policymakers have been most interested in, however, is the health outcome of childhood obesity. Restrictions on food and beverage marketing are seen as an effective policy instrument to stem the rising tide of obesity among children at the population level, with the reasoning that shifts in marketing over time have been a key etiologic factor. The focus on obesity has attracted particular attention amidst growing concern about future health-care costs associated with obesity and its sequelae, a utilitarian perspective. Yet some policy actors would argue that an obesity focus does not take into account the broader range of potential harms to children that would be important to air in public discourse about marketing in society. The section on gender dimensions below offers examples of some of these potential harms.

A fourth group of issues, discussed in some detail under other encyclopedia entries, is about the agency of children and whether children are (policy or market) actors in their own right. On the one hand, this line of argument comes from the concept of the rights of the child and the responsibility of states to uphold this right. The field of child-targeted marketing, however, also views children as important independent actors, either as shoppers directly making purchases or as indirect influencers of consumption, such as in the concept of the “nag factor” (where the purpose of marketing is to promote children’s persuasion of adults who shop for them) or the “four-eyed, four-legged superconsumer”

(where the child and mother make up a single super-unit that is the target of marketing practices).

The capacity of children as agents is often associated with proposals to incorporate the instrument of “media literacy” education in policy. Media literacy education is an information-based activity where health promotion tools are used to provide children (and their parents) with sufficient knowledge and skills to navigate and evaluate mass media of different kinds, which includes marketing messages. The media literacy view suggests that children will be exposed to marketing regardless of policy restrictions, so they are best suited to deal with that marketing as engaged and informed consumers.

It is worth mentioning that much of the health debate about childhood – and even adult – agency in relationship to marketing deals surprisingly little with civic participation. Whereas ordinary children and their parents can be empowered in terms of their informed participation in consumption in markets (such as through media literacy), the options for their involvement in deliberating upon or setting public policy appear to be more limited. This is consistent with the current dominant normative frameworks in the health sector dealing with relationships between state, market, and citizen.

Fifth, the policy principle of liberty raises a set of important issues to consider in public health policy debates. Liberty has been used in the policy debate in the negative and positive sense and is also discussed in parallel with concepts of bounded rationality and of personhood. One line of argument, for example, notes that marketing interferes with individual liberties, whether on the part of the child or parents, because it prevents people from acting freely in their own best interests. This can be consistent with bounded rationality because individuals cannot reasonably, even if they were to be exposed to all possible information, incorporate these considerations into every decision. Another line of argument suggests that marketing is a communication tool, and thus upholding liberty should mean free access to all possible information about products, including marketing.

This requires individuals to be more than boundedly rational.

Liberty is also discussed alongside the concept of personhood for corporations. In the US policy debate on this issue, an argument has been made for minimal policy intervention on the basis of the concept of corporate free speech.

Finally, a sixth set of issues is about marketing and advertising as part of the social and cultural environment. Some actors would argue that marketing has, for some time now, been part of normal childhood experience, and will always be. Other actors would counter that the intensity, frequency, and techniques of marketing have shifted substantially over the twentieth century, meaning that yesterday's advertising directed toward children cannot be reasonably compared to today's (and tomorrow's). Hence, a new policy approach is needed to address what has become an entirely different social and cultural enterprise.

Discussion of marketing in the environment is also related to the debate about commercial presence in different settings. For example, schools, where children not only spend time but are often required to spend time by law, are often seen as an archetypal "commons" that should be free from market incentives or commercial influence.

Gender Dimensions

Gendered advertising refers to images and concepts that are employed in advertising or marketing depicting stereotypical gender roles and or displays. Unlike the concept of sex, which refers specifically to the biologically based differences between females and males, gender is a socially constructed notion that interrogates the juxtaposition between femininity and masculinity.

The current policy debate on food and beverage advertising to children has tended to underexamine the implicit gendered notions in advertisements, marketing practices, and different policy intervention options. Considerations of gender are significant because they contribute directly to the normative frameworks (including commonly held beliefs, values, emotions, attitudes) underlying policy and that perpetuate

dominant societal views (e.g., either compliance or aversion). In other words, advertising acts as an important tool of socialization in modern industrialized societies, maintaining particular social constructions such as gendered relations, displays, and roles in the public policy domain.

As the perceived primary providers of food and care to their families and children, marketing that has been specifically directed to parents has contributed to the normative expectations of what mothers' (as well as fathers' and lone parents') primary responsibilities and obligations ought to be. These expectations extend to socially defined perceptions of what individual children and "family units" ought to do, how they ought to look, and what they ought to eat. The mothering role also holds significance in the context of the childhood obesity rationale for intervention, mentioned above, which has been a subject of interest within the critical feminist perspective on fat studies, including concepts of fat oppression, (lone) motherhood, and constructions of beauty.

For instance, an advertisement depicting a socially acceptable, well-put-together mother, lovingly giving her well-behaved, adorable children a particular food item that they were specifically requesting, and subsequently thoroughly enjoy, creates the expectation that a "good" mother *should* provide certain food items at her children's request in order to achieve the desired outcome of having well-behaved, satisfied children within a happy family. Simultaneously, a child viewing the same advertisement may be conditioned to believe that they might be happier if they modeled the behavior of the children they saw in the advertisement and pressured their mother (or father) to purchase particular food items that were specifically featured. As noted above, a particular area of marketing specialization has been to target "superconsumer" units involving a compound form of consumption made up of behaviours of parent and child.

In addition to advertising that is infused with notions of gendered relations, displays, and roles, normative constructions have also materialized through food products that have been saturated with stereotypical feminine or masculine, or sexualized features/characteristics. Studies have

examined gendered packaging directed primarily at young girls or boys, creating a gender bias toward specific food products (e.g., see IOM 2006).

Apart from gender bias created by particular food products featuring specific packaging, other research has examined food advertisements directed at children that are perpetuating gender bias through the following vehicles: gender-specific voice-overs, dominant product user/main character, degree of activity/behavioral aggressiveness, and soundtrack volume – to name only a few (see Childs and Maher 2003). Once again, these factors foster gendered food preferences among specific target consumers such as parents and their children.

As technological advances in the twentieth and twenty-first century have made “screen time” more readily available and as most parents become progressively stretched for time, energy, and resources to manage activities in the private sphere, digital screens – and the advertising on them – have taken on a role of their own and have been equated to modern-day “babysitters.”

Overall, the existing array of policy interventions to address food advertising to children have concentrated upon the private sphere, namely, marketing within homes on televisions. This portrays the management of exposures and behaviors related to advertising as a something essentially negotiated between parents and children. As the perceived or expected dominant figures of authority within the home, parents, and more specifically mothers, are thus expected in most policy debates to be the primary gatekeepers that filter advertising at all.

Cross-References

- [Marketing, Food Policy, Diet, and Health](#)
- [Obesity and Responsibility](#)

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Food Allergies: Ethical Issues

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Synonyms

Anaphylaxis; Diet-related disease; Food intolerance; Food sensitivity

Introduction

Food allergy is the term used to describe an immune response to a protein found in a food.

This adverse reaction is caused by a food that is normally tolerated by humans. (Food allergies occur in other species, but will not be discussed here.) There is no cure for food allergies. Treatment options include avoidance, desensitization, and/or treatment of symptoms. Persons with severe food allergies can experience anaphylaxis, a life-threatening impairment of the circulatory and respiratory systems that can lead to death. The allergic reaction occurs when IgE (immunoglobulin E) antibodies “tag” or attach and mark the protein as a foreign pathogen and trigger the allergic response in the body.

Food allergies most often occur during the first or second year of life. While it is possible to outgrow food allergies, allergies to tree nuts and peanuts are almost never lost. Food allergies are prevalent in 6–8 % of the population during the first year of life, and rates fall off and remain about 1–2 % of the population (Wood 2003, p. 1631).

The most common food allergens are often informally referred to as the “top 8” and account for ~90 % of food allergies experienced. They are peanuts, tree nuts (including almonds, pine nuts, coconuts, walnuts, pecans, pistachios), eggs, milk, soy, wheat, shellfish, and fish. Other less-common food allergens include fruits, vegetables, grains, spices, natural colors and even synthetic colors, and food additives. The 2004 Food Allergen Labeling and Consumer Protection Act (FALCPA) was passed by the US Congress in 2006 and requires the “top 8” allergens to be listed on packaged foods regulated by the Food and Drug Administration (FDA).

Food Allergen Exposure and Symptoms

Persons with food allergies can experience allergic reactions stemming from skin contact, ingestion, and/or inhalation of the allergen. There are varying degrees of sensitivity that food-allergic persons experience. The most severe sensitivities result in immediate hypersensitivity reaction referred to as *anaphylaxis*. This is classified by acute symptoms (appearing in the first 30 min after exposure, though symptoms will likely be

present within seconds) and delayed symptoms (experienced up to 8 h after exposure). While immediate reactions including breathing difficulty or angioedema may be life-threatening, delayed reactions are usually not so.

Allergic symptoms include:

- Flushing, urticaria/hives
- Itching of mouth, lips, tongue, eyes, and skin
- Tearing of the eyes
- Angioedema, swelling of lips, palate, tongue, eyelids, or entire face
- Congested or runny nose, rhinitis, sneezing, rhinorrhea
- Stridor, wheezing, shortness of breath
- Difficulty swallowing
- Upper airway obstruction, dysphonia
- Hypotension, arrhythmias, hypovolemic shock
- Chest pain
- Nausea and/or vomiting
- Abdominal pain and cramping
- Fecal urgency or incontinence
- Uterine cramping
- Urinary urgency or incontinence
- Fainting
- Cardiovascular collapse

Eighty percent of persons experiencing anaphylaxis have skin symptoms.

An allergic individual may experience different symptoms in response to the same allergen, over multiple exposures. These symptoms may change in type and severity as the person ages (Sampson et al. 2006, p. 374).

Diagnosis

There are three forms of allergy testing used to determine if a person has a food allergy: blood test, skin prick test, and oral food challenge.

Blood tests come primarily in the form of the IgE (immunoglobulin E) antibody tests. IgE tests are conducted by taking a sample of blood, introducing potential allergens to the sample, and measuring the IgE levels. A significant benefit of testing a drawn blood sample is that multiple allergens can be tested at once without exposing a person to the possibly toxic substances.

Skin prick test involves a portion of the allergen being placed on a needle or directly on the surface of the skin and the needle puncturing the skin. If a hive appears at the puncture site, the person is considered to have an allergy to the allergen. Skin prick tests are often performed on the forearm or back of the person being tested. Several tests can be done simultaneously using a paddle or plate holding several samples at once. Skin prick tests have an ~85 % sensitivity.

An oral food challenge is when a person is given an allergen in pill form to be ingested. This is often done in the office of a physician or allergist so the person can be carefully monitored in case of anaphylaxis. There has been a move to make the double-blind, placebo controlled food challenge the medical standard for food allergy diagnosis. This method is not feasible for those with a known medical history of allergic anaphylaxis. The diagnostics used can vary between different medical sites and clinics, which leads to a different standard of care. The lack of universal standards and unequal access to care are two important ethical issues.

Cross-Reactivity

Persons with a known allergy to one (or more) allergen can experience “cross-reactivity.” This is an experiencing symptom of an allergic reaction in response to an exposure to an allergen that the person is *not* allergic to. Examples include latex-allergic persons having a histamine reaction to certain fruits. Persons who are allergic to bananas can also have a cross-reaction with latex.

Treatment

While there is no known cure to food allergies, there are two main treatments available for allergies: avoidance or controlled exposure and desensitization therapy.

Avoidance is the process of avoiding all exposure to allergens and control any unwanted exposure by managing exposure symptoms. There are three types of medications used to manage

allergy symptoms: epinephrine, antihistamines, and steroids.

Epinephrine is a medication used to treat the acute symptoms of severe allergic reactions. It is often administered in the form of an epinephrine autoinjector (also known as EpiPen), a self-injectable form of adrenaline. It is administered when a person is having an immediate hypersensitivity reaction, which is often life-threatening. The goal is to prevent or preempt anaphylactic shock.

Antihistamines are another treatment option for managing the symptoms of an exposure to an allergen. Antihistamines block histamines and histamine reactions and can relieve some symptoms including itchiness. The most common antihistamine is diphenhydramine, commonly known as Benadryl. Antihistamines are not fast-acting and thus are ineffective if administered during an immediate hypersensitive reaction.

Steroids are a treatment option used to decrease inflammation that occurs during and after an allergic reaction has occurred. Similar to antihistamines, they are not effective in preventing or treating anaphylaxis.

Oral immunotherapy, or desensitization, is not a cure but a treatment where persons with food allergies are exposed to small amounts of the allergen. Over time, the quantity of the allergen is slowly increased, with the goal of desensitizing the person to the allergen. Allergy shots are another form of desensitization therapy typically used for environmental allergens. They are not considered effective for food allergies and not a treatment option.

Food Allergies Versus Food Intolerances

Food intolerance is a broad catchall term used to define an adverse experience to a food. Food allergies are classified differently than food intolerances. Food allergies involve an IgE-mediated response, while food intolerances do not. Food intolerances can involve the immune system and many involve an IgG- and/or an IgA-mediated response to a food protein, such as Celiac disease or Heiner syndrome. Food intolerances also

include nonimmune system responses to food, e.g., lactose intolerance which is an inability to digest lactose due to an insufficient amount of the enzyme lactase.

Food Allergies, Ethical Considerations

There are two categories of ethical concerns regarding food allergies: the personal and the implications to society. While persons with food allergies may endeavor to address their individual quality of life concerns, food allergies pose several public health concerns and bring issues of food and healthcare access into question. Lack of access to healthcare can be an obstacle to diagnosis and allergy treatment and potentially lead to increased emergency room use and/or mortality rates. On the individual level, food allergies also impact the quality of life of the food allergic but also caregivers. Quality of life measures include general health and emotional health including stress levels, limitations on family activities, and emotional impacts on parents (Sicherer et al. 2001).

Social Determinants of Health and Disparities

When looking at the ethics of food allergies, we must consider who has access to information about food allergies and who has access to testing and medications to manage symptoms. Social determinants of health and disparities dramatically impact access to healthcare. The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels.”

While it is easy to use the term “social determinants of health” to encompass all aspects of an individual’s life and his/her surroundings, it is important to acknowledge the specific factors that impact health. These elements translate to variability in the quality of health services and support. This variability in access and quality is known as *healthcare disparities* and is defined as being those attributes specifically stemming from

race and ethnicity. In addition to race- and ethnic-based disparities, access to care and quality care is impacted by socioeconomics, location, class, gender, sexual identity, religious affiliation, age, language spoken, and education.

Access to Food

There are significant obstacles to maintaining safe food. Ensuring food is allergen-free is difficult because the proteins that cause allergic reactions are not visible to the naked eye. Cross-contamination by crumbs, shared preparation facilities, and lack of proper sanitation, all can cause safe foods to become contaminated. Packaged foods that are labeled allergen-free are often significantly more expensive than their counterparts. This increase in cost can be financially burdensome or even prohibitive.

Education and Support Groups

There are many organizations and support groups who advocate on behalf of the food allergic. Some of these groups also function as emotional and educational support networks. Many have free membership but all require the social capital of time and often access to computers and the Internet. These requirements can exclude many who are in need of information and support.

Legal Rights

Laws that define and require food labeling are essential for those with food allergies to be able to have access to safe food. It was not until recently that some protections have been provided by US law. Passed in 2004 but not enacted until 2006, the Food Allergen Labeling and Consumer Protection Act of 2004 requires that source ingredients for the top 8 allergens be listed in plain English on packaged foods for sale in the United States. The second phase of the law was to develop a definition for the term “gluten-free.” This was not completed until August 2, 2013, when the FDA released the federal definition that the food must contain less than 20 ppm of gluten in order to use the term “gluten-free.”

This law pertains to packaged food items only. The regulations do not apply to alcoholic beverages and prescriptions or over-the-counter medications. Many pills are formed with starches that are used to bind medications. Some injectables, such as vaccines, have egg-based serums. Since there is no legal requirement to disclose the origin or source of ingredients, medications can be a source of potential unknown allergens.

In December 2012, the US Department of Justice announced that food allergies may constitute a disability under the Americans with Disabilities Act (ADA). The ruling was the result of a lawsuit brought against Lesley University. This ruling had direct implications for university meal plan participation and food services compliance. This ruling allows for some additional legal standing for those with celiac disease and/or food allergies.

In Massachusetts, the Act Relative to Food Allergy Awareness in Restaurants was signed into law in January 2009. It had two provisions that were rolled out separately. In October 2010, a food allergen poster and menu advisory were required by restaurants. In February 2011, “food establishments were subject to a certified food protection manager who viewed the training video and obtained a training certificate.” Some have criticized the law as not doing enough in the way of educating restaurant staff and possibly giving food-allergic patrons a false sense of security in dining out.

An Act to Protect Anaphylactic Pupils: Sabrina’s Law came into effect on January 1, 2006, in Canada. The law ensures all school boards have policies or procedures in place to address anaphylaxis in schools, which include providing instruction to staff and guidance on the administration of medication. (There is no such law in the United States.)

Social Stigma, Dating/Intimacy, Quality of Life

There is often a social stigma surrounding a person once their food allergy has become known. Persons can be excluded from certain events, or their participation is marginalized. Friendships, dating, and intimacy are

complicated in the case of severe food allergies when skin-sensitive reactions can come from touching and kissing.

Food allergies can place additional stress on family members and caregivers. There is an increased financial burden due to the need to procure and store safe allergen-free foods; in families, this sometimes means having dedicated allergen-free space and/or different utensils in addition to special foods. Food-allergic people and their caregivers can have higher rates of school and work absences and limits placed on social interactions. These can lead to significant negative impacts on quality of life (Sicherer et al. 2001).

Literature

As Behrmann points out in his article “The Paucity of Ethical Analysis in Allergology,” there has been little attention paid in the form of academic and medical literature on the ethics of food allergies. His review of texts written in French and/or English resulted in 35 pieces with substantial focus on allergies and ethics. He notes that research is primarily focused on the ethics surrounding psychological issues, and the majority is about asthma sufferers. He calls for the inclusion of social, legal, ethical, and morbidity, to be added to future research. Behrmann makes the comparison to the attention that obesity has received, since both diseases have higher occurrences in industrialized worlds, and both have seen dramatic increases since the 1960s. In his comparison, Behrmann calls for similar attention to be paid toward food allergies – focusing on ethics, public health and public health policy, disparities, and the need to pay specific attention to vulnerable populations. He outlines the need for collaborative research between allergologists and bioethicists to create interdisciplinary research to guide health policies and interventions.

There are significant ethical issues that arise in the diagnostics and treatment of food allergies. Roberts in “Challenging Times for Food Allergy Tests” highlights the ethical need to conduct oral

food challenge(s) as a means of ruling out false-positive blood work and unnecessarily restricting diets. Oral food challenges produce the risk of anaphylaxis, which can deter parents of small children and physicians from wanting to undergo the test. Roberts sides with the need to accurately diagnose patients and that the risk is outweighed by the need for knowing what food a person is or is not allergic to and what her/his reaction truly would be if exposed. At the same time, Hourihane and Beirne in “Evidence of Effectiveness of Anaphylaxis Management Plans: Are We Waiting for Godot?” look at whether drug trials for treatment of anaphylaxis are ethical at all.

In the article “Complementary and Alternative Medicine for the Allergist-Immunologist: Where Do I Start?,” Engler et al. (2009) highlight that many food-allergic patients seek complementary or alternative therapies in addition to Western medical practitioners and medications. There is an issue of education, on parts of both physicians and patients as to the safety and efficacy of alternative/complementary therapies. They bring up the need for international information sharing, evaluations, reporting, and research.

Millins’ work calls for an increase in research into the epidemiology of food allergies and notes the dramatic increase in hospitalization for anaphylaxis in Australia. He states that additional research into food allergies is necessary not only to determine their cause but also to effectively gather rates of occurrence and to effectively determine where and why food allergy rates are increasing. The public health implications include allocating additional resources for training and educating medical professionals on the signs of anaphylaxis and how to effectively administer medications.

One of the only pieces looking at the ethics of people with food allergies interacting with those without, and how both of these sets of bodies are being governed, is Ross and Hunt. In their “Governing Peanuts: The Regulation of the Social Bodies of Children and the Risks of Food Allergies,” they look at the school board in Ottawa’s set of guidelines surrounding peanut allergies. They specifically look at the moral implications of shifting the risk management

from the food-allergic child to that of the parents of non-food-allergic children and classroom teachers. Ross and Hunt argue that the additional burden of regulating child behaviors and food consumption that is placed on teachers is an extension of the government and part of an increasing trend in teacher responsibility and oversight into more and more aspects of children’s and their parent’s lives.

Summary

The ethical considerations surrounding food allergies are complex and multifaceted. Persons with severe food allergies are impacted by the food choices and practices of others. When we consider what is just, ethical, moral, and right, we must consider the non-food allergic as well as those with food allergies. In both the public health and public school arenas, food allergies raise significant issues about individual’s rights. This is further complicated by new laws and regulations, which have begun to shift some responsibility onto food producers, school districts, and restaurants, to help mitigate some risks for those with food allergies.

While there is more awareness and regulation, the rates of food allergies are increasing. This raises concerns about access to quality healthcare and brings up questions about what times of medical testing are too risky to engage. There is no known cause or cure for food allergies; and goal of gaining the knowledge of one or both may require continued discussion of the ethics of clinical trials and testing.

Cross-References

- ▶ [Child Nutrition Guidelines and Gender](#)
- ▶ [Eating, Feeding, and Disability](#)
- ▶ [Feeding Children](#)
- ▶ [Food and Choice](#)
- ▶ [Food and Class](#)
- ▶ [Food and Life Chances](#)
- ▶ [Food Ethics and Policies](#)
- ▶ [Food Labeling](#)

- Food Risk Communication
- Food Risks
- Food Security
- Food Standards
- Food-Body Relationship
- School Lunch and Gender

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Food and Agricultural Trade and National Sovereignty

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Synonyms

Nationalism; State sovereignty

Introduction

National sovereignty is a contested concept. Some see the evolution of the world order since the Peace of Westphalia in 1648 toward a system of sovereign nation states each with “supreme authority” over a particular territory as central

to the protection of national identities and the maintenance of peace between peoples naturally inclined toward conflict (Stanford Encyclopedia of Philosophy 2010). Singer, on the other hand, does not see national sovereignty as absolute and argues that it “has no intrinsic moral weight” (Singer 2004, p. 2). Respect for national sovereignty may be considered a grave error permitting governments to suppress opposition to their actions or to persecute people who subscribe to different religions or are members of different ethnic groups. In the aftermath of the atrocities of World War II, the international human rights movement has sought to circumscribe the ability of states to violate human rights as defined in the United Nations’ Universal Declaration of Human Rights. While many regimes reject the universality of some or all of these rights and most governments resist any outside interference in internal affairs, global institutions related to human rights such as the UN Convention on Genocide or the International Criminal Court can support efforts to override the absolute authority of sovereign states in certain cases.

Globalization is another factor eroding state authority. Global problems such as climate change, the spread of infectious diseases, or terrorism cannot be addressed by individual states acting on their own. Rather, they can only be handled through international cooperation which may require subordinating certain national prerogatives to global initiatives. In addition, increasing economic interdependence through trade, investment flows, and migration means that government policies designed to manage the domestic economy are less effective and may be undermined entirely. The tension between globalization and national sovereignty is particularly acute in the area of food and agricultural trade. Food and agricultural systems are important components of national economies, but they are also invested with significant social and cultural meaning. The sensitivity of food and agriculture is apparent from the history of trade negotiations at the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO). Agricultural trade negotiations were the most difficult to bring to

conclusion during the GATT Uruguay Round (1986–1994) and have been at the heart of the difficulties in completing the WTO Doha Round of trade talks launched in 2001.

National Sovereignty

A common definition of sovereignty is that it is the right to exercise “supreme authority” in a territory or political community (Stanford Encyclopedia of Philosophy 2010; de Benoist 1999). De Benoist (1999) argues that there is a second meaning that concerns the legitimacy of the holder of this supreme authority. In democratic states, the ultimate sovereign is supposed to be the people, but as a practical matter, sovereign authority is generally delegated to a government considered to be legitimate because it has been chosen freely by citizens. Even if the government of a country is considered to be unlawful by its own citizens or by the world community, international organizations such as the UN generally treat standing governments as if they are legitimate. The exercise of supreme authority requires noninterference with a government’s actions both by those within the country and by foreign governments or individuals. Noninterference raises difficult ethical issues in cases where a government is committing genocide or crimes against humanity with respect to individuals or groups residing in its territory. If national sovereignty has no “moral weight,” should it not be overridden by other moral imperatives such as a duty to protect vulnerable populations?

Of course, not all repressive actions by governments represent human rights violations. Most would agree that states have the right to use force to control criminal or terrorist activities. Problems arise, however, when the lines between criminality and the normal exercise of democratic rights become blurred. The government of Ukraine has jailed Yulia Tymoshenko, a former prime minister, on abuse-of-office charges that most consider to be politically motivated. Zanetti (2001) suggests that human rights violations should include not only suppression of free speech or physical violence but also extreme

deprivation, hunger, and poverty. Such a position is consistent with the Universal Declaration of Human Rights which includes rights to adequate food and shelter as well as civic and political rights. Pogge (2001) argues that all humans have a right not to be poor, claiming that the cause of world poverty is the global economic system created for the most part by individuals and governments in high-income countries. Full recognition of rights such as these would mean that there is a very extensive duty to assist regardless of the cause of a people's misery and whether or not the government of the country in question agrees.

Regardless of one's conclusions about the scope of human rights and the obligations they entail, it is clear that the world community is interfering in the affairs of sovereign states in the name of human rights more regularly than has been the case in the past as shown by recent conflicts in Bosnia, Kosovo, Sierra Leone, and Libya. These interventions suggest that respect for absolute national sovereignty may be on the wane. Human rights interventions are only part of the global forces working to constrain the exercise of state sovereignty. The ability of governments to control the evolution of their nation's culture, economic and social life, and legal system is also eroded by globalization as will become apparent in considering international food and agricultural trade.

Food and Agricultural Trade

The experience of the EU with economic integration can offer insights into the trade-offs between globalization and national sovereignty. In 1957, six European countries (Germany, France, Italy, the Netherlands, Belgium, and Luxembourg) created the European Economic Community (EEC). The EEC represented a fairly low level of economic integration, but over time as membership grew, the benefits of further economic integration were judged to outweigh the costs of reduced national sovereignty. From its inception, some European leaders hoped to see the EEC, and later, the European Community (EC) become

more tightly integrated as a way to promote peace and avoid conflicts such as those that took place in the first half of the twentieth century. By the beginning of the twenty-first century, the EU had taken over many policy areas normally reserved for sovereign states such as trade policy, agricultural policy, customs and border controls, and some aspects of higher-education policies. The creation of the European Monetary Union and the introduction of the euro in 2002 represent the highest degree of economic integration attempted so far. For the 17 EU countries using the euro, monetary policy has been transferred from national governments to the EU removing a very significant policy instrument from the control of individual states.

This has played out quite dramatically in Greece, Spain, and other Mediterranean countries that experienced economic and financial crises in 2011–2012. In the past, these countries would have been able to devalue their currencies in order to improve their international competitiveness. As members of the monetary union, however, competitiveness can only be restored by lowering wages and profits, and the policies to bring this about caused great hardship and popular unrest. Some analysts have suggested that the monetary union can only function effectively if the member states give up even more of their sovereignty by unifying fiscal policies (government spending and taxation). The EU is a regional rather than a global agreement, but its history can be taken as a guide to the broad implications of globalization. With greater degrees of integration of the world's economies, resources are used more efficiently and there may be greater economic prosperity. National sovereignty, however, moves in the other direction becoming increasingly diluted as global interdependencies increase (see Weiner 1996; Bagwell and Staiger 2004). Whether the benefits of globalization outweigh the cost of diminished national sovereignty is hotly contested (see Singer 2004; Rosset 2003; Rodrik 2011).

While international trade is only one aspect of the broader process of globalization, it has long been the object of some of the more contentious policy debates. In recent years, two sets of issues

have become prominent in discussions of the relationship between international food and agricultural trade and national sovereignty. The first set relates to the idea of food sovereignty defined as the right of people to control their own food supplies in the face of an onslaught of unnatural foods promulgated by multinational firms in the globalizing world economy (Rosset 2003). The second set concerns the coordination of domestic food and agricultural policies through international institutions such as the WTO, the EU, or NAFTA. In both cases, ethical claims are often made to support contrasting positions taken by the proponents and opponents of international trade and globalization.

Food Sovereignty

The problem of economic development in low-income countries became more prominent after World War II with the dismantling of colonial empires and the beginning of the cold war competition for allies. Most intellectual and strategic approaches to development fall into one of two camps. The first, based on mainstream economic thinking, sees economic relations between rich and poor countries as mutually beneficial and emphasizes the importance of trade and domestic and foreign investment. Alternative conceptions draw on Marxist thought, particularly the writings on imperialism of Lenin and Rosa Luxemburg, casting economic relations between industrialized and developing countries as exploitative. This second tradition includes dependency theories and lives on today in the modern antiglobalization movement. From these perspectives, international trade and the international organizations such as the WTO, World Bank, and International Monetary Fund (IMF) that oversee world economic and financial systems are the primary cause of poverty in developing countries. Prior to the breakup of the Soviet Union, many governments in developing countries chose to implement socialist development strategies that included protectionist trade policies, nationalization of foreign-owned firms, and extensive government intervention in markets. In this setting, food self-sufficiency, defined as the production of most or all of the food consumed in

a country within the territory of that country, was a common policy goal.

Food self-sufficiency has also been of concern in high-income food-importing countries such as Japan and Korea. In Japan, achieving self-sufficiency in the main staple food, rice, required the prevention of rice imports, and this led to domestic rice prices that were sometimes more than seven times the world price for rice of equivalent quality. From the perspective of international organizations such as the Food and Agriculture Organization (FAO), the World Bank, or the WTO, concern with food self-sufficiency has been seen as a costly mistake. The FAO favors an alternative goal, food security. National food security is defined as sufficient amounts of safe and nutritious food from domestic production and/or trade, distributed equitably and produced in a manner that is sustainable so food will be available over time (FAO 2006). For those committed to the idea that trade is just another word for exploitation, the fact that trade is treated as a means to achieving food security makes that concept unacceptable. An alternative is the idea of food sovereignty suggested in 1996 by a peasant organization known as Via Campesina (Windfuhr and Jonsén 2005):

Food sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; [and] to restrict the dumping of products in their markets. ... (see Rosset 2003 or Windfuhr and Jonsén 2005)

Those who promote food sovereignty usually suggest that the movement is not opposed to international trade, but the emphasis on local production and consumption generally seems to support opposition to liberal trade policies. In addition, food sovereignty advocates favor the right of countries to erect protectionist trade barriers, particularly when aimed at countervailing the dumping of cheap food that undermines local producers. Most mainstream economists would agree with the argument that farm subsidies in high-income countries slow world economic growth and harm producers in developing

countries by depressing world prices but would point to the benefits of the WTO in its efforts to reach agreements that limit these subsidies (Peterson 2009). In contrast, some in the food sovereignty movement call for removing food and agriculture from trade agreements such as the WTO Agriculture Agreement or NAFTA (Rosset 2003). Advocates of food sovereignty argue that food should be seen as a basic human right and that the best way to realize this right is through local food systems based on small-scale agriculture using sustainable methods. Via Campesina (2012) has called for food self-sufficiency which, if taken literally, means that international food and agricultural trade would be eliminated. Schanbacher (2010) contrasts food security and food sovereignty, concluding that food sovereignty provides a superior framework for addressing broad global issues related to food, hunger, and poverty. To reach this conclusion, he first contrasts the two concepts from the point of view of human rights and then examines them from the perspective of the capabilities approach championed by Amartya Sen and Martha Nussbaum (see Nussbaum 2000 and Sen 2009). Schanbacher considers food to be a basic human right and argues that food security based on trade and the integration of local food systems into global markets violates this right by removing the option for individuals to decide what kinds of food they wish to produce and consume. This argument hinges on the notion that people in developing countries will always prefer traditional, locally produced food to imported food, and this may not always be the case, particularly when the local systems are incapable of producing enough calories to satisfy nutritional needs. It also requires that globalization remove the option of continuing to produce and consume in traditional ways and this outcome is not inescapable. In terms of the capabilities approach, Schanbacher (p. 106) claims that food sovereignty allows the “agrarian poor” to exercise greater control over their lives and this control is necessary for their capability to realize dignified lives (Nussbaum’s seventh central human capability, part B). Schanbacher’s discussion is based on value judgments that favor local over

global; small-scale operations over larger, transnational systems; and “fair trade” over “neoliberal” economic models and profit maximization.

Food sovereignty as described by advocates such as Rossett (2003) and Schanbacher (2010) is closely related to other movements advancing alternatives to the global, industrial food system, including the slow-food movement, community-supported agriculture, organic agriculture, fair trade, and those promoting local consumption (locavores). These movements usually take it as self-evident that the current world food system has failed because of widespread hunger, malnutrition, obesity, and other food-related illnesses. While they have had limited success in changing the nature of the world food system, their membership is growing and they may eventually exercise greater influence on agricultural policies. The FAO has agreed to include food sovereignty in its discussions of global food policy (FAO 2012). In the EU, measures to insure animal welfare and resistance to genetically modified food have become widespread, and many individuals in high-income countries have opted for alternative sources of food such as farmers’ markets and local food cooperatives because of beliefs that conventional foods are unhealthy or produced in ways that harm the environment. Aerni (2011) sees a positive role for the food sovereignty movement but points out that it “... still contains too much old left-wing ideology and too little creative thinking on how to make better use of today’s global new knowledge economy to promote sustainable development” (p. 23).

Those less sympathetic to the anti-globalization and anticapitalism tenor of much of the food movement criticisms would point out that it may not be possible to feed a world of nine billion people with average incomes higher than today’s without modern technologies, including genetically modified food, and that such alternatives as organic food will probably never be able to account for more than a small fraction of the world’s food supply. Italy, the home of the slow-food movement, ranks tenth in the world in terms of the number (290) of McDonald’s restaurants (http://www.nationmaster.com/graph/foo_mcd_res-food-mcdonalds-restaurants), and the output of the industrialized global

food system, including its fast-food industries, dominates world food production and consumption. Still the food sovereignty and other food movements have drawn attention to a range of ethical issues related to sustainability, poverty, and health as well as problems in the oversight of trade and globalization, and a rich literature has developed to address the ethical dimensions of these questions.

Agricultural Policies

The food sovereignty movement is concerned not only with the kinds of food people are able to consume and the impacts of producing this food on the natural environment but also with the well-being of the producers themselves. This concern has long been shared by governments although their interests are often less humanitarian than political. In Japan, the Liberal Democratic Party has particularly strong ties to rural voters who have often been critical in the party's electoral success (Peterson 2009). If a government decides to isolate its country from world markets, it can establish any kind of agricultural policy it wishes as long as domestic political support is forthcoming. Once a country begins to trade with other countries, its agricultural policies can no longer be set without considering the international repercussions. The EU again provides a telling example. Prior to the establishment of the EEC, the six member countries had independent agricultural policies supported by trade barriers that allowed differences in food and agricultural prices to persist. With the formation of the EEC, trade barriers were to be eliminated making these national agricultural policies impossible to sustain. The result was the Common Agricultural Policy (CAP) that replaced the preexisting national policies with a single set of agricultural regulations applied in all member states. The compromise that was struck when the CAP was created was to set internal prices at levels high enough to satisfy the least efficient producers in the member countries with extensive use of trade barriers applied to nonmembers to protect these high prices.

For countries that had traditionally sold large amounts of agricultural commodities to European

food processors and producers, the high trade barriers set by the CAP were unwelcome. When the United Kingdom joined the EC in 1973, countries such as Australia and New Zealand that had traditionally supplied the UK market saw their export sales decline (Peterson 2009). Because of early opposition from the United States, the GATT had not included extensive provisions related to agriculture so there was no forum for resolving disputes over agricultural trade barriers. This became critical as the EC successfully rebuilt its agricultural sector after the destruction of World War II and began not only restricting imports but also subsidizing exports of its growing surplus food production. In the 1980s, the EC and the United States engaged in a kind of subsidy war with each side trying to spend the other into submission. The favored instruments for these policy wars were various types of nontariff trade barriers. The classic barrier to trade is a tax (tariff) levied on imported goods. Under the GATT, industrial tariffs had been reduced substantially but agricultural barriers had not been addressed. For technical reasons, the nontariff barriers deployed to protect domestic agricultural producers in the 1980s cause greater disruption of world markets than tariffs, and the widespread use of these instruments meant that world commodity markets were seriously distorted. Delegates to the Uruguay Round (1986–1994) trade negotiations elected to include agriculture for the first time in a multilateral trade agreement and with a great deal of difficulty managed to craft a set of rules on international agricultural trade that were included as part of the newly formed WTO.

Although the WTO Agriculture Agreement has not been entirely successful at reducing or eliminating farm subsidies, it has resulted in some significant changes, most notably in the EU which has eliminated its system of export subsidies and severely reduced the level of protection afforded to its farmers. Based on data from the Organization for Economic Cooperation and Development (OECD 2012), 87 % of producer support in 1986 in the EU was generated through trade barriers compared with only 12 % in 2011. Moreover, half of EU support in 2011 was in the form of direct payments that are not

tied to production and are judged by the WTO not to distort world markets. In contrast, only 29 % of 2011 US producer support was not tied to production and these non-distorting direct payments were eliminated in the 2014 US Farm Bill. Because there are still substantial distortions in world food and agricultural markets, further negotiations on the agricultural disciplines have been conducted in the context of the Doha Development Round (DDR) launched in 2001. The DDR negotiations were completed in 2013 but the final agreement made only modest changes to WTO trade provisions. While not the only bone of contention, conflicts over agriculture played an important role in slowing the negotiations.

One reason why agriculture has been so contentious not only during multilateral trade negotiations at the WTO but also in regional and bilateral trade agreements such as NAFTA is that farmers are often seen as honest, hardworking individuals who are vulnerable to the vagaries of world markets and who deserve protection from foreign competitors. Much has been written about the virtues of family farms and the values thought to be promoted by an agrarian way of life (Comstock 1987; Thompson 2010). International food and agricultural trade may drive traditional farmers out of business causing them hardship and disrupting vibrant rural communities. In addition, declining agricultural sectors may mean that a country becomes dependent on foreign suppliers making it vulnerable to international political events. In 1973, US President Richard Nixon placed an embargo on US soybean exports because of rising food prices. The embargo seriously disrupted Japanese livestock industries strengthening incentives for Japanese governments to push for food self-sufficiency (Peterson 2009). Finally, the influence of agricultural groups, particularly in high-income countries, has been translated into protectionist policies that are politically difficult to dismantle.

Policies to protect uncompetitive producers, however, have negative consequences for domestic consumers and farmers in other countries. Japanese rice policies mean that consumers in

Japan face rice prices much higher than the world price and *japonica* rice farmers in California and Australia receive lower prices than would be the case if the Japanese market were opened to international trade. Low-income consumers in developing countries may benefit from low world prices while farmers find it difficult to compete. Whether greater weight should be attached to the interests of poor consumers or to those of poor farmers is a difficult ethical question. Most economic analyses show that the gains from agricultural trade liberalization are greater than the losses and that even unilateral reduction of trade barriers will increase overall economic welfare in the country electing to reduce or eliminate its trade barriers. The problem is that the gains are generally spread thinly across large numbers of people, while the pain is often concentrated in particular groups such as subsistence farmers in low-income countries or Japanese rice growers.

In recent years, the range of issues being addressed in trade agreements has expanded far beyond traditional barriers to trade such as tariffs or export subsidies. National policies related to animal welfare, organic foods, genetically modified foods, production methods involving the use of hormones or techniques thought to be cruel to animals, and many more can actually serve as trade barriers. The US and Canadian governments have always maintained that the EU ban on imported meat from animals treated with hormones is a disguised trade barrier designed to protect EU producers from competition from lower-cost producers in North America. EU authorities counter that the real purpose of the ban is to protect consumers from potentially harmful foods invoking the precautionary principle to justify policies restricting access to foods that have not been proven to be harmful. As in the case of the food sovereignty movement, it is often argued that trade and globalization disrupt traditional farming and food systems that have important ethical, cultural, and environmental values. But as with conventional trade barriers, protection of the traditions of one group may have negative repercussions for the well-being of other groups raising complex ethical questions.

Summary

Trade and globalization place constraints on the exercise of national sovereignty in all aspects of international relations including those related to food and agricultural trade. Some deplore this and argue for slowing globalization and protecting domestic agents from foreign interference. Others see declining national sovereignty as desirable because it reduces the ability of national governments to oppress their people and to interfere with voluntary economic exchanges. Ethical questions related to such issues as food sovereignty and domestic agricultural policies have been the subject of much reflection and discussion.

Cross-References

- [Canada, US-EU Beef Hormone Dispute](#)
- [Food Security and International Trade](#)
- [International Food Quality Standards](#)
- [Trade Policies and Animal Welfare](#)
- [Trade Policies and Organic food](#)

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Food and Agriculture in Bangladesh

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Synonyms

Agricultural ethics and policies; Food security;
Population growth

Introduction

Bangladesh is one of the most densely populated countries in the world. With extremely low per capita land, feeding its growing population has always been a big challenge. Simultaneously agricultural land uses have changed continuously and that in a way demonstrates the dynamic and complex interplays of ethical dimensions of socioeconomic, political, and technological forces (Khan and Shah 2011).

However, the rapid agricultural land use changes occurred during the last three decades mostly due to unplanned and uncontrolled urbanization and industrialization. This changing pattern of land uses has serious implications for the agriculture and food security of the country. In 1980, there were 9.0 million hectares of available agricultural land, while in 2012 it decreased to 6.0 million (Rashid 2012). It is important to note that in 1980 the country's population was approximately 80 million and currently that is reported as 161 million (Wikipedia 2013; CIA 2013). The status of food and agriculture is exposed to huge risks and so from the food security perspective. Recently, the country's environmental minister mentions that "declining farmlands and rising population were the two major concerns for Bangladesh, not the impact of climate change" (Rashid 2012). This tells how food and agriculture are critically important to the country, rather than the popular belief of climate change damages.

The government prepared the "National Land Use Policy 2001" largely as a response to this dynamic socio-environmental challenge. The policy was aimed to ensure the competitive use of land resources for food production, housing, as well as protecting the country's environment. However, as governance and policy implementation have always been issues for Bangladesh, many people therefore were always very skeptic about the implementation of this plan. This type of uncertainty at the structural level is definitely detrimental to the country's capacity for food and agricultural production for its growing population.

Recent inventory highlights that land use changes in the recent years have adversely impacted the annual rice production by decreasing approximately 0.86–1.16 % of the country's total rice production (Rashid 2012). In a land-constrained country, it is a huge issue for Bangladesh, and therefore, the country has no way without imposing strictly any resource management regulations and zoning to secure agricultural lands. Apart from this, population control, rural farm and nonfarm employment creations, further efforts to increase land productivity through the adoption of modern green technologies, uninterrupted electricity supply to the irrigation equipment, agricultural credits, and subsidy all play important roles for the sustainable food and agricultural practice in Bangladesh. The government should take the lead role in ensuring a balanced interaction between human and nature. However, in this framework, citizens' awareness and involvements are critically important.

As a populous country in the developing regions, Bangladesh has a number of developmental challenges. Nevertheless, the country has made substantial progress on several global development indicators, such as reduction of poverty or gender equality. But still malnutrition or hunger in remote areas is at an alarming level. Productive capacity of agricultural lands is still comparatively low than many of the neighboring countries and still the country is dependent on food export for its own food security (ACDI/VOCA 2011). Therefore, the commodity price increase can impact the country badly. Like any other countries, the problems of food safety and security, animal welfare and production, technological change, agricultural production techniques, pollution and environmental sustainability, and corruption of regulators and policy makers are at the core of food and agricultural ethics (James 2003).

This entry on food and agriculture in Bangladesh is divided into three major parts: firstly, after having a brief theoretical discussion, it addresses the ethical challenges of food and agriculture in Bangladesh. Secondly, this entry focuses on how the discussions of food and agricultural ethics are

integrated into the local practices and contexts. Finally, it attempts to propose some policy solutions. Overall, it is expected that the discussions on this entry will generate further intellectual contributions and discussions on the ethics of food and agricultural production in a country-specific context, where the mentioned issues are unfortunately under-prioritized in the domain of policy making and implementation.

Agriculture, Environment, and Ethics

The publication of Rachel Carson's "Silent Spring" in 1962 was one of the major turning points when the scholars started to put further insights on the discussions of agriculture and environment at large. The arguments came into front that the conventional agricultural practice could be detrimental to the environment as well as public health and safety. Some also started to investigate that the adopted agricultural practice might not be sustainable in the long run. However, this is now clearly evident that conventional or even modernized agricultural practice involves heavily the replacement of natural ecosystems as well as reason for groundwater pollution, depletion, soil erosion and degradation, and pesticide pollution along with some other associated environmental stresses and risks (Chrispeels and Mandoli 2003). Therefore, a new paradigm of food production and agricultural practice was inevitable. At the same time, the world as a whole needs more feed, more clear water, better foods with more nutrients, and substantial ecological modernization for ensuring agriculture with less environmental footprints.

All these issues together gave importance for intellectual discourse and policy implications for food and agricultural ethics. Ethics is about choices, and food and agricultural ethics is about the choices and moral components for the people, who are engaged in agriculture either directly as the producer of it (e.g., farmers) or indirectly as the consumers of it (e.g., citizens) (Chrispeels and Mandoli 2003).

In this context, FAO (2001) stresses that the world needs more equitable ethically grounded

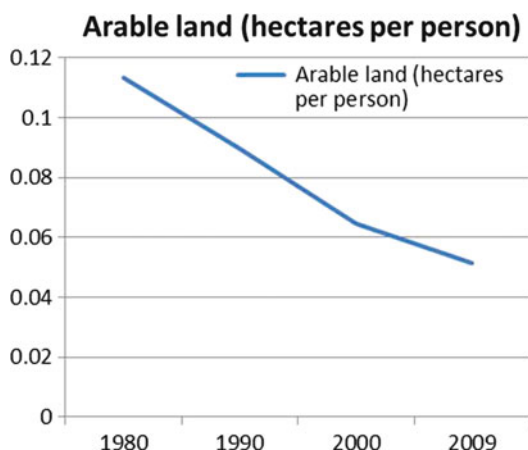
food and agriculture involving three major global development agenda, such as improved well-being, protection of the environment, and improved public health. For many countries in the developing regions, poverty is the single most issue. However, it has been proved that ethical food and agricultural practice can ensure poverty reduction by enhancing economic and social efficiency along with the eradication of poverty, hunger, and malnutrition. Apart from that, FAO focuses on the protection of the environment and improved public health and safety, because these two are closely intertwined with the issues of food and agricultural ethics as well as involve the core components of global development.

Local Challenges

Bangladesh is relatively a small country with a total land area of 143,998 km², however with a population of 161,083,804 (CIA 2013). It is one of the densest nations in the world. Apart from other developmental challenges, the country faces challenges from limited lands for food and agricultural production for its vast population. It generates further concerns for the country's ethical positions and practices in food and agriculture. The World Bank Data (2013) reports that during the recent past, the amount of arable lands (in hectares per person) in Bangladesh has decreased in an alarming rate (Fig. 1).

In the present context of available arable lands, now in Bangladesh, there is almost no chance for horizontal expansion or growth for agricultural production; rather the country is following the trajectories with vertical growth. The current features of land and population (Table 1), mentioned by CIA World Factbook (2013), also support that argument.

For agriculture intensification or vertical growth, usually people use pesticides and different mechanisms which often contradict with the norms of food and agricultural ethics. However, apart from this, the numbers of natural disasters also cause huge challenges to local food and agricultural chains. Almost in every year floods



Food and Agriculture in Bangladesh, Fig. 1 Arable lands (hectares per person)

Food and Agriculture in Bangladesh, Table 1 Basic features of land and population

Land/population	Amount
Total area (in km ²)	143,998
Land (in km ²)	130,168
Water (in km ²)	13,830
Population (July 2012 est)	161,083,804
Agricultural lands (km ²)	91,490
Arable lands (in %)	55.39
Permanent crops (in %)	3.08
Other crops (in %)	41.53
Irrigated land (in km ²)	50,500

or the increasing impacts by the climate change, such as increased frequency of tropical cyclones, cause huge loss of crops and cropland devastations. Seasonal and sometimes unpredictable monsoon rains and floods always create further stress on local agriculture and food systems.

The consumption pattern sometimes might be a linear function of any particular group of population when technology and lifestyle are given. However, for various internal and external reasons, the environmental stress and burden are distinctively nonlinear and unpredictable in most of the cases. It has been already mentioned that in Bangladesh the population pressure has tremendous impacts on the sustainability and ethical dimensions of food and agricultural

development. Further population will intensify the crisis along with irreversible damages of food and agriculture. Numbers of predictions say that in the foreseeable near future, climate change will be hard felt in this densely populated country where a substantial portion of land areas are barely above mean sea level (Mahtab and Karim 1992). It is now projected that 25–30 % of the land might be lost due to the sea-level rise and that says Bangladesh will lose its vast amount of prime agricultural lands. Already the country has started to experience salinization in land and water, particularly in southern Bangladesh. It is important to say that in the near future it will not be a surprise if climate events become the crucial determinant of the country's food and agricultural production. Bangladesh also experiences continuous erosion of its riverbanks and often that costs huge loss of agricultural lands. All these together illustrate that the country is heading towards critical ethical challenges regarding food and agriculture and subsequent human security issues, particularly when the populations are largely poor and have limited capacities to confront any types of challenges.

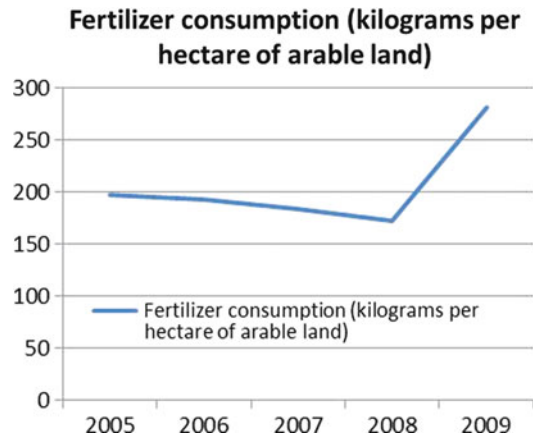
Theory and Practice: Food and Agricultural Ethics in Bangladesh

The country needs to feed its burgeoning population. A constant increase in demand will make increasing pressure on available lands, food, and agricultural practice. Contemporary division of human and nature in many developing countries demonstrates the mismatch between the food supplies and human nutritional needs. Unpredictable impacts of agribusiness on rural employments and consequences of modernization of agriculture on human and animal welfares along with the end effect of intensification of production systems on sustainability are some of the major reasons why agricultural and food production have become part of moral and/or ethical concerns at large (Grimm 2006).

It has been often argued that the intensification of production system has contributed to feed the country's massively growing population with

nominal imports. However, at the same time this form of agricultural development has usually large environmental footprints, such as in the form of land degradation, increasing salinization in soil and water, desertification, and the increase of agrochemicals into the larger food chains. Apart from that, intensification of production system has another human dimension of the issues. It can contribute to further marginalization of poor and landless farmers. In Bangladesh often intensification of the production system happens at the expense of a number of social costs such as increasing poverty, food insecurity, and rural unemployment.

Thompson identified some of the core premises of food and agriculture, such as (a) agriculture and agriculture communities are embedded in complex “eco-social hybrid systems”; (b) even though often agriculture and food are viewed as an economic function, but beyond producing food and fiber, they have important social functions; (c) agriculture and agricultural practices are inherently linked to environment and generate environmental footprints; and (d) finally, the ideological discourse of “pristine nature” and “ecological footprints” often generates a confrontational situation between human and nature, whereas agriculture makes a bridge between everyday life (nonspatial factors) and known places (spatial factors) (Epp 2012). To elaborate these premises in the Bangladesh context, clearly food and agriculture and the people who are closely engaged are embedded in complex eco-social hybrid systems; in other words, it is a coupled human and natural system. People are engaged in production, distribution, and consumption in the entire cycle of food and agriculture, and therefore, the entire cycle of food and agriculture has clear human dimensions. However, in doing that, both food production and agricultural practice inherently generate ecological footprints, which is again detrimental for human health or sustainable existence. Some might argue that intensification of production can reflect the core ethos of ecological modernization; however, no one can ignore the associated environmental costs.



Food and Agriculture in Bangladesh, Fig. 2 Fertilizer consumption (kilograms per hectare of arable land)

The core ethical issue of food and agriculture in Bangladesh mostly emerged due to the country’s position on vertical production intensification. This type of production requires intensive use of chemical fertilizer. Recent estimations demonstrate that Bangladesh uses the highest amount of fertilizer per hectare in South Asia. Fertilizer consumption in the recent years, calculated from the World Bank Data (2013), demonstrates (Fig. 2) that from 2008 fertilizer consumption per hectare of arable lands has dramatically increased.

This alarming rate of the fertilizer use contributes to multiple challenges, such as issues with food quality, soil quality for agricultural production, diminishing soil productivity, and raising costs for agricultural production for particularly the marginal farmers. More precisely, the excessive and uncontrolled use of pesticides might cause (a) substantial health problems among the farmers or other associated workers, (b) natural ecosystems can be exposed to severe pollution risks, (c) loss of insect biodiversity in the entire agro-ecosystems, (d) creation of unnecessary secondary pests, and (e) insects can be resistant to pesticides. All these together can pose serious questions to the ethical dimensions of food and agriculture in Bangladesh.

“Water” can be another deciding factor in this entire discourse and policy implications. Almost half of the cropland in Bangladesh is under

irrigation. Currently, water is becoming a limiting factor for the sound agricultural practice in the country, most due to the increased intensification of agricultural productions and diversion of water to the nonagricultural uses (Khan and Shah 2011). In addition to that, groundwater level is decreasing for the excessive use, mostly for fulfilling the demands of large population, and at the same time for the excessive use of chemicals, the groundwater is experiencing issues like arsenic contamination.

Right now in Bangladesh prime agricultural lands are already used for agricultural production for feeding the vast population of the country. To meet further demands, expansion of croplands is now taking place at the cost of damaging forest and other marginal lands. Apart from that, forestlands and marginal lands are also being impacted by the uncontrolled industrialization as well as urbanization. This not only will pose questions for the ethical practices of agricultural and food production but also will make enormous environmental footprints, which can be detrimental for the country and its citizens in the short and long run. Illiteracy and inadequate knowledge of sustainable agriculture are also among the major issues in the discussions of food and agricultural ethics. This would not be a surprise if the prime agricultural lands are impacted by local agricultural practices. Criticisms already highlight that large areas of South Asian countries are losing the valuable topsoil or other forms of degradation due to the poor agricultural practices (Khan and Shah 2011).

It is important to note that intensification of agricultural production and production methods have both the negative and positive impacts. This is obviously true that intensification of agriculture helped to feed the country's burgeoning population. It helped a large portion of population come out of poverty and hunger, contributed to rural economic growth, as well as contributed to save forestlands, wetlands, and other fragile ecosystems in the country from the conversion to cropland or other nonfarm uses. However, while making these mentionable important contributions, it was detrimental to genetic diversity as well as biodiversity. In addition to that, now agricultural practice is unaffordable for the

marginalized farmers. In many places marginalized farmers are even poorer and shifting from farm to nonfarm practices is now quite evident. Farmers often report that they are experiencing diminishing return of agricultural productivity from their agricultural lands. The question might arise: what would be next after destroying the environment and agricultural base? And how will the country feed its vast population? All these questions and concerns therefore create an important base for the ethical practice of food and agriculture in the country. Therefore, the next challenges would be to identify how to manage this entire socio-ecological dynamics for a sustainable agricultural production in this resource-constrained country. As a reply to these critically important and intertwined issues, "ethics" or "ethical practice" might be at the center of scientific discourse and policy implications.

Summary

Because the issues with food and agriculture are linked with poverty, hunger, malnutrition, employment opportunities, etc., it is therefore critically important to understand the ethical dimensions of eco-social hybrid system. To feed the growing population, countries like Bangladesh have adopted intentionally and/or unintentionally a number of unethical food and agricultural practices. Now it is the time to turn around and set paths towards the ethical practice of food and agricultural production. Climate change impacts will pose further challenges to the existing food and agricultural practice in the country.

However, changing direction to the ethical practice is more than agricultural modernization. Social transitions are now apparent in every corner of the world. The use of social capital and social innovations for more desired food and agricultural practice is therefore inevitable. This should contribute to manage resources more efficiently and more precisely help to sustain with increasing food and agricultural productivity. There should be more investment in research and development for ensuring the ethical dimensions of food and agriculture. In this regard, some

of the following agenda can be addressed for building more equitable and ethical food and agriculture system in Bangladesh:

- (a) there should be a holistic approach in formulating environmentally sensitive and ethical plans for national land use plans and policies;
- (b) there should be adequate research and development investment to ensure continuous inventions for natural resource conservation and more particularly for ethical food and agricultural production;
- (c) the research and development efforts should be coordinated and concerted as well as should be aligned with national development policies;
- (d) as Bangladesh is a water-constrained country, there should be long-term integrated watershed management plans and strategies;
- (e) farmers should get sufficient information and training for ethical production of food and agriculture; and
- (f) building awareness and local-level capacity on the environment as well as ethical dimensions of food and agricultural production.

Above all, as in Bangladesh good governance is always a big issue; therefore, the government should to ensure peoples' awareness and involvement in national land use plans, and when necessary they should pursue for revision of the plans as well. Bangladesh should take care of the ethical dimensions of food and agricultural production, unless the country might need to pay a huge price with the expenses of enormous damage and loss, when the country is already challenged by climate change and huge population in a resource-constrained environment.

Cross-References

- [Agricultural Ethics](#)
- [Food Security](#)
- [Population Growth](#)

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Food and Choice

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Synonyms

Consumer choice; Control and autonomy; Diversity and variety; Freedom to choose; Options

Introduction

Food is understood to be a site of choice in myriad ways (Marshall 1995). Most obviously, individuals choose what food to eat. This seemingly simple choice gives rise to a variety of other opportunities for choice. One may choose to eat healthfully or not, to endorse a particular conception of what “healthful” means, to eat animal products or not, to seek the most affordable options, to select organic produce, to shop at farmers’ markets or join a CSA, to grow one’s own food, to dine out at numerous different kinds of restaurants, to eat only raw food, to buy in bulk, to avoid sugar or wheat or artificial sweeteners, and so on. Yet, choices about what to eat are never just choices about the content of what to put into one’s body. Rather, these choices are ones that reflect priorities, values, self-conceptions, and bodily needs and wants, as well as the various socioeconomic, historical, cultural, and political conditions that shape these things. When one chooses what to eat, one may also regard oneself as choosing where and how this food is produced, who is producing it, what kinds of lifestyle one aims to lead, what kind of person one aims to be, what kind of body and physical appearance one seeks to have, what kinds of communities one wishes to join, and even what kind of world one aspires to inhabit.

Choice is often represented as something that individuals ought to value in itself when it comes to food and thus as something that ought to be desired, pursued, cultivated, and encouraged both via policy and individual action. Accordingly, the value of choice in relation to food is advocated in various ways by individuals, advertisers, activists, corporations, and the media, among others. Increased variety and choice is commonly presented as a merit of a global, industrialized food system, yet myriad choices are simultaneously obscured and restricted by that same system. Thus, choice is also the mantra of those seeking to challenge the industrial food system, who contend that *real* choices – that is, meaningful choices – lie outside of that system.

Since food choices are not simply choices about what to eat and the very idea of choice is

ascribed value, it is instructive to examine the nature of the kinds of choices about food that are deemed significant and the context in which they are or become significant. Specifically, it is crucial to interrogate the assumption that the globalized, industrialized food system dramatically enhances choice, by asking the following: What kinds of choices does this system make possible? What kinds of choices does it preclude? How does it narrow or limit choices? For whom are these choices made possible and who is hampered in making them? What kinds of choices does it make visible and what kinds of choices does it obscure? Is the rhetorical claim that a globalized, industrialized food system is the only kind of system that maximizes choice, and so is best suited to Western sensibilities and preferences, valid? All of these questions cannot be addressed fully in this brief entry, so it proceeds by assessing various perspectives on the impact of the industrialized system on food choices and then considering how choice is understood in relation to this system, the dominant one that supplies food (i.e., what choice is *about* and why choice is thought to be significant).

The Contemporary Food System and Food Choice

It is readily acknowledged that the global industrial food system far expands the options available to consumers. A wide array of different types of food products is now available in supermarket chains, including types of produce and grains that previously remained regional crops (for instance, foods such as quinoa, goji berries, and acai are now fairly common in the USA, and US fast-food chains are now common throughout the rest of the world); a diversity of different kinds of retailers (ranging from supermarkets to club stores to natural food markets and so on) procure and distribute said products; fresh produce of all varieties is accessible to many year round and processed food products of all kinds have proliferated.

These developments in the amount, variety, and accessibility of food both within nations and internationally have dramatically increased

consumers' ability to make choices about how to feed themselves, including the choices of what to eat, how much time and energy to spend preparing food, and where to buy food and how much to spend on it. This increase in choice has obviously benefitted consumers, enabling them, for instance, to save money because of the advent of mega-retailers like Wal-Mart (Hausman and Leibtag 2007) and to save time because of the preponderance of convenience foods and restaurant options.

More significantly, however, the proliferation of options made possible by agricultural modernization and industrialization enables consumers to choose schemes of food purchasing, preparation, and consumption that fit best with their life-plans. From a liberal individualist perspective, the ability to maximize choice in this way is a basic good because it allows each individual or each family unit not only to determine what foods they wish to consume but also what place food has in their conception of the good life in general (e.g., one can make food central to the good life by choosing to devote the time to preparing gourmet meals with exotic ingredients or one can regard food as sustenance or best prepared by others by choosing to eat takeout meals daily).

The consequence of the global market in food is that few foods remain purely local products but rather become available as a demand for their export arises. The globalization of food distribution enhances choice in terms of an increase in variety (especially for those in Western, "developed" parts of the world) but also has adverse consequences for those whose subsistence crops become in demand for export (e.g., quinoa) (Philpott 2013). Thus, the expansion of options and increase in variety that might be said to characterize the global food system is far from equitable and might even be described as distributing inequity. Imports into Western, "developed" parts of the world tend to be items desired for their health benefits whereas imports from the West into "developing" parts of the world tend to be far from healthy, highly processed food products, including items such as enriched bread and fast food; moreover,

poverty and inequity of access *within* industrialized countries entails that increased variety benefits the middle and upper classes to a far greater extent than it does the lower classes. Problems of access such as food deserts limit the choices of the poor, but they are also simply priced out of the markets for healthy, organic foods (Winne 2008, p. 177). Thus, Mark Winne contends that "[w]e have in America today a tale of two food systems – one for the poor and one for everyone else" (2008, p. 175).

Whereas Winne's criticism of the burgeoning market for organic, humanely raised, fair trade, local, and "green" food highlights the way choice is a privilege afforded by wealth and the focus on sustaining farmers eclipses concerns about the poor, others focus on the way the decisions and forces that lead to increased consumer choice often constrain the choices available to farmers, consigning them to poverty, debt, and sometimes suicide. Consumer freedom and choice, especially as it pertains to price, are often invoked as a rationalization for low wages for farmers and workers and for centralization and market concentration. Raj Patel illustrates this point with the case of Ugandan coffee growers: When coffee prices drop in a globalized market, growers who have land suited to little else besides growing coffee find themselves compelled to grow more to earn enough to survive but doing so creates a surplus and drops the commodity's price further.

With the milling, roasting, exporting, and transporting in the hands of multinational corporations like Nestlé, coffee growers lack control over their crop and its price. While growers may be paid 14 cents per kilo of coffee, after processing the price rises to "US \$26.40 per kilo, or nearly 200 times the cost of a kilo in Uganda" (Patel 2007, pp. 9–10). Centralization and market concentration disempower farmers even as it may enable corporations to present more options to consumers; thus "our choices at the checkout take away the choices of those who grow our food" (Patel 2007, p. 8). The creation of "food chain clusters" – both vertical and horizontal integration – allows major corporate players (such as Cargill, Monsanto, Archer Daniels

Midland, Smithfield, and ConAgra) to control the production of a food from seed to manufacturing and shift decision-making from farmers to corporate offices (Hendrickson and James 2005).

Moreover, as Hendrickson and James contend, this shift in power and control results in diminished and constrained choice for farmers, which leads to both a loss of farmers' knowledge and skills and "an erosion of farmer ethics" (Hendrickson and James 2005, pp. 278–279, 285). By altering the self-identity of farmers, agricultural industrialization and the ensuing constraints on choice can make agriculture "a place where ethically compromised positions could become natural for farmers" (Hendrickson and James 2005, p. 289). Overall, therefore, choices about what to eat may be increased for some, but these choices are both inequitably distributed along the lines of socioeconomic class and premised on impeding others' choices.

Another counterpoint to the view that the global industrial food system increases the options available to consumers is the fact that actual diversity in both crops and diet has decreased dramatically. Though some critics focus on the effect of agriculture on biodiversity (Cafaro et al. 2006), others focus on the way industrial production, exemplified by monocultures, has led to a loss of diversity in the plant and animal species in agriculture (agrobiodiversity) and thus in diet. The Food and Agriculture Organization of United Nations estimates that "75 % of plant genetic diversity has been lost" since the 1900s (Economic and Social Development Department of the Food and Agriculture Organization 2004) with the consequence that "[m]odern U.S. consumers now get to taste less than 1 % of the vegetable varieties that were grown here a century ago" (Kingsolver 2007, p. 49).

The exigencies of a global and industrial system demand that plant cultivar are selected for a select set of characteristics that are conducive to mass production, transport, storage, and supermarket presentation; thus, ease of harvesting, resistance to bruising and spoiling, uniformity in appearance, and so on are the criteria that determine both which cultivar consumers will find in supermarkets and how these cultivar will be bred

and/or genetically engineered. So, consumers will not find apple varieties like the "Calville Blanc, Black Oxford, Zabergau Reinette, Kandil Sinap or the ancient and venerable Rambo on the shelves" (Patel, p. 2). Nor is it likely that the majority of consumers have heard of these varieties; thus it is unlikely that they realize that their choices have been restricted in advance. Corporate concerns about expediency, efficiency, and profit circumscribe the choices that consumers make in the store. Thus, the variables over which consumers may exercise control and make choices are de facto limited: "[w]e may choose between varieties, but not their presentation or the overall selection of goods on offer. When it comes to product quality, safety, and ethics we have to rely on liability and truth-telling" (Kjaernes 2012, p. 152).

A related concern is the decline in diversity in diet: Three crops – corn, wheat, and rice – comprise 60 % of the human diet (Economic and Social Development Department of the Food and Agriculture Organization 2004). In the USA, 75 % of the average person's diet is comprised of eight species (Kingsolver, p. 49) and two thirds of this diet is corn, soy, rice, and wheat (Pollan 2008, p. 117). Since agrobiodiversity is increasingly correlated positively with health and food security, especially for rural populations, this reduction in diversity is significant (Johns and Eyzaguirre 2006; Nicklas, et al. 2001; Thrupp 2000). Thus, the availability of innumerable food products does not translate into dietary diversity; the presence of options does not necessarily lead consumers to take them up. In this way, the kind of choice the system proffers is just the presence of options and the mere possibility of taking them up.

The narrow array of foods that comprise the average US diet is intertwined with yet another concern about the way choice is manifest in a global, industrialized food system. Critics of the impact that this system has had on the health of consumers point out that many of the products available are simply reconfigurations of the same basic components, especially including the aforementioned soy, corn, wheat, and rice as well as sugar, fat, and salt. The number of food products

available in US supermarkets has increased from approximately 4,000 in the 1950s to an average of 38,718 in 2010 (FMI: The Voice of Food Retail 2012). The number of new products introduced is even more dramatic: “18,722 new food and beverage products were introduced in 2005 alone. . . [however,] many ‘new’ products turned out to be simply adaptations of existing products (‘Oreos with a different color icing,’ as one food product development researcher put it), . . . [with most] disappearing after a couple of years” (Gottlieb and Joshi 2010, p. 51).

The proliferation of new products aims to entice consumers to buy, and thus the main focus is on altering the packaging, branding, and messages coupled with the food product in order to attract consumers (Gottlieb and Joshi, p. 45). For such marketing to have its desired effect, though, it must portray the products as presenting genuine choices; such choices are often less about the content of product and more about the image associated with it. In the case of many cereals or soda, the diverse products are often simply different configurations of sugar or artificial sweeteners and so the choice is no longer one about food per se but about image and message. Advertising campaigns still play on the ideal of choice, however, as when the Coca-Cola beverage company markets its low- and zero-calorie beverages (including bottled water) as “healthy options” in order to establish the company as enabling meaningful (i.e., health-related) choice. Yet critics conclude that this depiction of choice is basically an illusion; given the minute differences in the products and the ultimate insignificance of the choice, “the choice between Coke and Pepsi is a pop freedom – it’s choice lite” (Patel, p. 17).

Choice and Alternatives to the System

Various alternatives have arisen in response to the ethical and ecological problems inherent in industrial agriculture and the health effects of the kinds of food that are its major product. Alternatives include foods that are labeled, marketed, and/or certified as organic, sustainable, humanely

raised, fair trade, nongenetically modified organisms (GMO), local, or “green” zero-emission products. In various ways and to varying extents, these alternatives constitute resistance to the ecologically devastating, inhumane, and unhealthy methods characteristic of global industrial agriculture and food production. Accordingly, the ideal of choice is crucial for such alternatives since they are often understood as, and/or marketed as, offering choices that either are not contained within or are precluded by the industrial system. In particular, these options appeal to the idea that our food choices signify more than a concern about the content of the food product.

Choices about food are choices about ethics, including how animals, human beings working in agriculture, and the environment are treated. In many cases, alternatives to the industrial system require eaters to see the kinds of choices presented within that system as illusory, as “choice lite,” and so to understand the choices presented by the alternatives as more meaningful choices. The meaningfulness of these choices lies in the way in which they involve a more expansive sense of the implications of food production and consumption. In choosing what beverage to drink, one is doing more than choosing between a drink with calories and one without calories or between one in a blue can and one in a red can; one is choosing whether the farmers growing the coffee beans are paid a living wage or are barely subsisting, whether the coffee is grown in a sustainable manner or in a way that caused deforestation, and so on. In this context of a rise in ethical consumption, the concomitant desire of individuals to know more about their food in order to make informed choices, and the increasing sense that food choices reflect on who people are, Tavernier argues that consumers have a right to know about food production methods and the ecological impact of their food (Tavernier 2012; Beekman 2008). Along these lines, Coff suggests that the “ethical traceability” enables more informed food choice because it “can address the ethical, as well as the practical and physical, aspects of” the history of a food (Coff et al. 2008, p. 1).

Despite the increasing array of more ethical choices on offer, there is some concern and skepticism about their meaningfulness and about the value of the information provided through standard means such as labeling and certification. Labels like “organic” and “non-GMO” are often adopted by the very mega food corporations to which alternatives are sought (Kastel 2006). The same large corporations frequently buy out smaller organic or natural brands, which thwarts attempts to redirect consumer support (Howard 2009; Johnston, Biro and MacKendrick 2009). Substantive changes in agricultural and production practices do not necessarily follow, however (Guthman 2004). Consequently, the significant social differences – in working conditions and wages, in the scale of production and its associated effects on soil erosion, and in the connection consumers do or do not feel to their food and those who grow it – can be virtually nil.

Moreover, as Roff contends, the ethical consumption movement’s emphasis on individual “freedom of choice” “vests responsibility in the individual and focuses attention on consumption as the new arena of citizenship[.]” obscuring the inequitable distribution of the ability to choose and the structural and political nature of responsibility (2007, p. 515; see also Bakker and Dagevos 2012 in support of the idea that citizenship can be effectively exercised through consumer choices). Aspiring to greater consumer “freedom of choice” does not require one to question the current high levels of consumption and their ecological impact and, further, can be achieved through similar kinds of reconfigurations of familiar foods, including highly processed products (Roff 2007, p. 517). Likewise, Kjaernes notes the limits of labeling schemes to address ethical concerns about industrial agriculture and food production; although labeling constitutes an attempt at transparency and the provision of more information, such schemes require competence in reading labels and trust that the labels mean what they say, and may simply comprise a means for corporations to increase profit (Kjaernes, p. 157). Moreover, labels may provide consumers with a degree of expanded choice but “if people’s concerns and

critique are directed towards the lack of personal interaction and direct control, then ethical labels and assurance programs cannot resolve that” (Kjaernes, p. 153).

Additionally, the question of whether mandatory labeling really maximizes consumer choice is itself a point of debate (Carter and Gruère 2003; Siipi and Uusitalo 2011). Busch summarizes the problem as “the private governance of food[.]” which while it “permits and even stimulates some forms of (more) equitable exchange, it also creates a bizarre bazaar where goods are differentiated by a growing and often bewildering array of standards, most of which are only made visible to consumers through claims embodied in certifications” (2011, p. 351). The labels, certifications, and other assorted claims about food products provide “greater choice to consumers even as it makes choice into a burden” (2011, p. 351). Thus, as Wilkins notes, the most genuine *alternative* to the industrial food system may be found “by shopping outside the mainstream food system – buying at least some food at a farmers market or roadside stand, or joining a CSA” (2005, p. 271). The most significant way to increase choice is likely to extricate oneself from the mainstream food system as much as possible.

Summary

If choice is valued both from within the conventional food system and by those who challenge it, then it is worth considering why choice is regarded as significant and where its value is thought to lie. On the one hand, choice is understood simply as having options from which to choose; that is, choice is valued because it is defined in terms of the presence of variety and the freedom to select what is most desirable or best suited to one’s needs from that variety. The nature of these options may vary considerably, ranging from a selection of products that are essentially different configurations of the same basic ingredients (differing primarily in their packaging and marketing) to having options whose content is significantly different

(for instance, processed food products versus unprocessed, “natural” foods) to foods that are chosen not solely because of their content but also because of the implications of the practices involved in their production.

Although consumers choose from different types of food, they might choose a given option because of other variables: By choosing fair trade, consumers may seek to impact wages and working conditions; by choosing humanely raised animal products or not to eat animal products at all, consumers may seek to impact the welfare of animals; by choosing zero-emission products, consumer may seek to minimize the contribution their purchases make to climate change, and so on. Thus, on the other hand, the meaning of choice also extends beyond simply having options (being able to choose, for instance, from among ten different items rather than just three) to being able to make an impact on the processes and systems that are related to one’s consumption. One’s choice is not just whether to buy organic or not but is also a choice about the use of pesticides, contribution to soil erosion, and so on. The meaning of choice thus also lies in being able to exercise some control over the significant variables – methods of production, working conditions, environmental impact, quality and safety of the food product, etc. – that are involved in the choice rather than abdicating this control to other parties.

Both senses of choice are intrinsically connected to freedom, autonomy, and the ability to engage in self-determining action. To the extent that an ideal of choice is part of how food is marketed, food corporations focus on the first dimension of choice: the presence of variety and the freedom to select from these options, which easily becomes “choice lite.” From the perspective of players in the global, industrial food system, the second dimension of choice – exercising some control over the significant variables related to one’s food – is subsumed under the first: Control is to be found in selecting from the options the industry affords consumers. Since food corporations need to retain control over their methods of production, among other

things, the degree of control available to consumers is just the control over which item they select. Thus, the choice between the available options must be construed as a significant and meaningful one, as a choice that says something about one’s self-conception, for instance (Bordo 1999).

On some accounts, the proliferation of variety and the need to choose from an increasingly wide assortment of items can even create anxiety as consumers are encouraged to regard each choice as meaningful (Schwartz 2004; Salecl 2010). Thus, those who criticize and challenge the industrial system work to reveal these choices as basically chimerical, as far less important than they are depicted, and as tied to the disenfranchisement of others. In contrast, they emphasize the importance of control over the significant variables related to one’s food, variables that impact the overall health and well-being of humans, animals, and the environment. They also emphasize the difference between a cognizant choice and an unwitting choice. In a landscape in which choices are commonly molded and manipulated to varying degrees, reacquiring control over how, where, and by whom food is produced, processed, transported, and sold requires an understanding of the way choices are shaped.

The difference between cognizant choice and unwitting choice is thus also a difference between understanding *that* choices are shaped (rather than being pure expressions of desire) and how they are so, and the absence of this critical awareness; such critical awareness also involves recognizing the way in which an idea or image of choice is a central part of how food products are marketed to consumers. These forms of awareness are considered central to regaining control over something as vital as food and reestablishing the full value of choice. Thus, alternative food systems seek to restore the meaning of choice by emphasizing both dimensions of choice equally and advocating for the idea that genuine variety and the freedom to choose only arise in the presence of decentralized, democratic control over the significant variables involved in food production and consumption.

Cross-References

- [Community-Supported Agriculture](#)
- [Ethics and Food Taste](#)
- [Food Deserts](#)
- [Informed Food Choice](#)
- [Obesity and Consumer Choice](#)
- [Political Consumerism: Consumer Choice, Information, and Labeling](#)
- [Slow Food](#)
- [Vegetarianism](#)
- [Vertical Integration and Concentration in US Agriculture](#)

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Food and Class

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Synonyms

Luxury foods; Poor-people's foods

Introduction

The act of eating, while simply defined as the consumption of food, has many social and cultural factors tied to it. These factors include how societies define what is edible or not and by whom, how and when to eat, and how the foods are acquired, among other things. Therefore, while eating is an everyday action necessary for survival, it requires a multidisciplinary approach for its understanding. This entry explores the relationship between food, eating, and class. Social class refers to the hierarchical organization of individuals in a particular society. It may refer to a caste system based on family social standing, but most commonly, nowadays, class is determined by the amount of wealth and income one possesses.

The topic at hand can be tied to different social dimensions depending on the context it is being addressed. Following the emphasis of this encyclopedia, the entry will focus on developed or resource-rich countries. In such context, the understanding of food and class is increasingly more essential to address health disparities in chronic, diet-related diseases which increasingly affect the poor disproportionately. In addressing

this issue, the following entry will begin with an overview of key concepts associated with the study of food and class, followed by an overview of current issues associated with the topic.

The study of food and class can be addressed through disciplines such as nutrition, economics, history, sociology, and anthropology, to name a few. Through these disciplines, various concepts emerge that are important in understanding the issue at hand. This entry will begin by addressing the key concepts of social class, eating, and taste. After the expansion of these key concepts, the entry will discuss the current issues associated and affected by the study of food and class.

Key Concepts in the Study of Food and Class

Social Class

Class is a key determinant of access to services and social goods. At the same time, it is also associated with education and asset ownership. Two key theorists addressing class were Karl Marx (1818–1883) and Max Weber (1864–1920). Marx addressed the issue of class from the perspective of who owns the means of production in society. In this context, there were two distinct classes: the proletariat, or working class, and the bourgeois, those who own the means of production. For Weber, on the other hand, class was determined by more than asset ownership. Weber addressed social class as the result of the interplay between economic standing, status or prestige (referring to how individuals are esteemed or evaluated in a given social context), and power (referring to that which allows individuals to get their way in society) (Wright 2005).

Nowadays, social class is typically seen in three categories: low, middle, and high. Low social class is associated with greater levels of social deprivation, lower levels of education, and less access to basic commodities. In extreme cases, low-class individuals may lack access to basic necessities, such as housing, health care, and food. Individuals in lower classes are usually in blue collar, unskilled occupations, such as the

service industry and high labor occupations. The low-class classification can be composed of those that are employed but earning very low salaries and those who are unemployed, destitute, and without a home to live or shelter. Middle-class individuals are associated with white collar, office occupations, and with higher levels of formal education and income, compared to those in the low social class. The middle class tends to be broad in high income societies and smaller in more developing contexts, with emerging economies. Finally, individuals classified as upper classes have even higher incomes, higher educational degrees, and more prestigious occupations. On concordance with Marx's views, the upper class or elites have control over means of production.

The separation between the lower and the high classes is dictated by the levels of social inequalities in the social context. Societies with big disparities between the low and the high social classes also show broad inequities in diets, health outcomes, educational attainment, and other factors associated with social well-being. Conversely, the gap between the low and the high class is affected by the level of social mobility in a given context. Social mobility refers to the facility individuals have to change their class status. It is related to equities in access to education, health care, social and cultural capital, and employment opportunities. Social mobility can also be facilitated by the provision of welfare programs, such as income and health safety nets Social Mobility (2013).

While income and wealth are important to class classification, education is often used as another indicator of class, given its close association with social standing. Higher education is correlated with higher income, as people get more economic opportunities from a higher education. Education is, then, key for social mobility and the amelioration of social inequities.

Food and Eating

Simply defined, food refers to a substance that nourishes and sustains life. At the same time, what is considered food, or what is an edible "substance," varies according to cultural and social contexts. In certain contexts and

circumstances, definitions of what is acceptable to eat vary even within a given society. In contexts of extreme poverty or deprivation, individuals may be forced to consume commonly inedible substances, such as dirt, to quench their hunger (MacClancy et al. 2007). These instances are examples of how food, while an everyday concept, is interdependent to the sociocultural contexts in which people live.

Similarly, eating is also a commonplace concept, as an everyday act essential for survival. At the same time, the process of eating is also influenced by different factors. Eating involves several steps, starting with food selection, cooking or food preparation, and culminating with the actual ingestion of food. While these steps are commonplace, each process involved in the act of eating is influenced by a wide array of social, economical, biological, cultural, and environmental factors, including class. Social class dictates what is socially expected from individuals in terms of table manners, for example.

At a more basic level, socioeconomic circumstances affect the types and availability of cooking facilities and the availability of a space for eating in the home. This is demonstrated by research on the food choice process. Food selection is influenced by class and factors associated with it (Sobal and Bisogni 2009). The research has shown that food choices depend on the time available to procure and prepare food, eat, and clean after the eating episode. Individuals in low social classes, aside from being constricted by the money available to purchase the food, may also be limited by the time they have available to cook or the lack of cooking resources. Time might be an issue across classes, but class influences how time is managed around food. Individuals in higher classes may have better access to technology and hired labor that facilitates cooking under limited time availability. Another important resource is cooking and nutrition knowledge. There, intangible assets are affected by education and family support and attention during the development years, which are also affected by class. Education and nutrition knowledge also influence notions of food quality that influence food selection. This includes brand preferences

and access, notions of what is considered healthy or not, and whether people care about the health effect of foods. While all of these factors are important in the food choice process, the main influence in food choices is food preferences, discussed next.

Class, Taste, and Food Preferences

Food taste is influenced by a wide variety of factors, including biological and social influences. However, social class influences the formation of eating habits early in life. These habits and food preferences are built as part of a person's upbringing and the environment where they live – variables which are affected on income and social standing. This includes the foods and drinks individuals are exposed to as infants and children, which then influence or set a base to their subsequent taste (Drewnowski 1997).

Aside from differences in economic and socioeconomic asset ownership, classes distinguish themselves through different tastes reflected in different consumption patterns, which are influenced by their purchasing power. When discussing class and taste, an important contribution to the topic is the work of Pierre Bourdieu (1930–2002) in *La Distinction*. In this landmark work, Bourdieu studied taste and preferences across different classes in French society. Among his findings, the taste of the higher classes often dominates the taste of the whole society, defining what is tasteless, tacky, or undesirable. Members of different social classes distinguish one another based on different things they own and acquire. Since members of the high class dictate the preferred taste, those in lower classes will aspire to emulate the taste of those in the high class (Bourdieu 1986).

The differences in classes invariably express themselves in food choices and preferences, as well as eating and dietary patterns. Historically, classes and tastes have been shifting. Before, higher classes were better off when they could acquire higher quantities of food. Then, there were shifts in the qualities of the food consumed. This included an increased taste for foreign, ethnic foods, not readily afforded or accessible by

lower classes. These historical shifts in food show how classes distinguish among themselves, with higher classes wanting to distinguish from lower classes, and lower classes wanting to imitate higher classes. Lower classes tend to emulate the taste of those in higher social classes, who at the same time change their consumption patterns to ensure a distinction from the lower social classes.

In the beginning those in higher classes could be distinguished from those in lower classes based on the quantity of foods consumed, with their status allowing them to eat more foods than those in lower classes. As lower classes started to improve their living conditions and were able to access greater quantities of foods and those in higher classes reached a limit on how much they could eat, class distinction then came in the types of foods consumed. Animal source product consumption, as less accessible, became more associated with higher classes. As nutrition patterns continued to evolve, and food becomes industrialized, higher social classes started favoring the new modern industrialized packaged products. For example, with the advent of the microwave, higher classes were able to consume pre-prepared foods, such as “TV dinners,” as a sign that they could afford the new technology (microwaves) and these boxed items.

Higher classes distinguish themselves through the consumption of luxury items. A “luxury food” is defined as a food whose demand is associated to a perception of higher refinement or a qualitative improvement on a basic food. It serves as a tool for class distinction, as its consumption, while highly desired, is not widely attained (Berry 1994). Accordingly, luxury foods are not constant or specific, as they are dependent of specific time and place, where a given food is conceived as extravagant and not a basic necessity or food (van der Veen 2003). Following this, perceptions of luxury change through time. An example of such changes is found in the history of lobster consumption in the United States. Before the nineteenth century, lobsters were in great supply and considered a food for the poor. They were used as land fertilizers and mostly fed to prisoners and

servants. Over time, as the supply of lobster diminished, the demand increased and, therefore, its price (Henderson 2005). Nowadays, the lobster is associated with a high price and often considered an example of a luxury food.

The lobster is an example of how changes in supply of a given food affect the social perceptions of the food's status. Aside from changes in the given food supply, the status of a food can also change with new culinary trends. Two examples of "poor people's foods" increasingly appearing in high class, expensive restaurants are offal meat and polenta. The consumption of offal meat was associated with poverty, as individuals were consuming animal parts often considered inedible or the animal by-products. In the early modern period, offal meat starts to appear in cookbooks targeted to the elites, broadening their range of culinary taste (Lloyd 2012). Similarly, polenta, as a cornmeal porridge, was traditionally used as a satiating side dish found not only in Italy but in other countries where corn was a diet staple. For example, it is also known as "funche" in the Spanish Caribbean. Nowadays, polenta is served as a side dish in expensive Italian restaurants.

Aside from the changing status of individual foods, social perceptions on cuisines can also change, often, but not always, on par with the cultures associated with such cuisines. For example, in this ever increasingly globalized world, chefs in higher-end restaurants are experimenting with cuisines from developing or resource-poor countries and offering transformed versions of foods often regarded as street, cheap foods in their restaurants. Examples include traditional street foods, such as tacos, arepas, and various fritters, served as "fancy" appetizers in many new modern restaurants.

The notions of rich and poor people food are cultural dependent. In context as the United States, lower classes are associated with the consumption of highly processed snack food, fast foods, and an unhealthy diet in general. The rich distinguish themselves intended consumption of fresh, organic local foods, or more exotic food preparation, for example, the new gastronomy techniques such as the food foams and other new preparation techniques.

In poor countries, diets tend to be more monotonous, composed of basic staple foods. The ability of

being able to afford processed, prepackaged foods is seen as a sign of status, as well as fast foods. Consuming wild, local greens is a sign of poverty. Contrasting this notion, wild, foraged foods are gaining popularity in developed countries, partly tied to the local food movement. In such contexts, higher-class individuals tend to distinguish themselves by selecting more modern foods, such as foreign, imported foods, while those in lower classes tend to adhere more to traditional foods. These foods, at the same time, have different nutritional values, as traditional foods, such as wild, local greens, tend to be healthier than new, modern foods, such as prepackaged processed foods.

Issues Associated to Food and Class Discussions

Food and Social Interactions

Aside from the need for nourishment, food fulfills and is tied to many human social needs. Food sharing is important in many cultures, and the act of eating is a primary way of interacting with others. In modern society, food sharing might take different forms, from sharing a meal at a restaurant, cooing for friends in the home, to having "pot luck" gatherings where those invited bring their foods. How individuals interact with one another through food is affected by their social standing. Those in the higher classes may consume more meals outside of the home, at more expensive establishments. The middle class may still enjoy eating out, but may also engage in more home cooking and having family or friends gathering in the homes. In terms of food, those in the low social classes are less able to use food as mean to socialize, as they may not have the resources to take part in different social interactions around food. Poverty, or belonging to lower social classes, carries with it an intrinsic component of deprivation, where those in lower classes cannot take advantage of different social gatherings.

Poverty, Food Deprivation, and Food Preferences

Individuals in low socioeconomic classes have a greater vulnerability to food insecurity and

food deprivation. Research has shown that past food deprivation is associated with preference for foods high in energy and fat, given their satiating and “comforting” effect. The importance of food as a source of happiness and comfort is important across all classes, but even more so in situations where the family’s few resources do not allow for fulfilling other nonfoods rewards – for example, while a mother might not be able to afford the latest videogame for her son, when the son ask for a fast-food meal, she will give in, even if she knows other food options are better. Because of the link between food and physiological well-being, the experiences of poverty and food deprivation make the understanding and following of current nutrition advise harder.

Social Class and Diet Quality

There is an inverse relationship between income and the proportion of such income spent in food. Individuals in low classes spend a big percentage of their budget in food, along with other basic necessities (housing, utilities). Given the relatively higher cost of healthy food options, such lack of economic access to food is associated with decreased diet quality. High quality, or nutrient-rich, low energy density diets are associated with higher socioeconomic status, while low quality, more energy-dense and less varied diets are associated with low socioeconomic status. This is seen in the consumption of foods considered part of a healthy diet, including whole grains, lean meats, fish, fresh fruits and vegetables, and low-fat dairy products (Darmon and Drewnowski 2008).

Food Deserts

The relationship between food and class is mediated by differential access to healthy, fresh foods. Discussions around class and eating touch upon food access inequities and local food deserts found in many low income areas, where supermarkets and fresh food markets are not available, and the poor are dependent on small, “corner” stores selling mostly unhealthy foods along with alcohol and cigarettes. In the United States, for example, research has shown that in low income areas, families spend more time traveling to a grocery store, compared to the national average. While access is expectedly

different in urban and rural areas, the issue is most concerning in urban areas with high levels of income inequality and racial segregation. Families in these low income neighborhoods have less access to supermarkets, greatly influencing the types of foods they have access to. This is reflected in purchasing patterns, where lower-class families who are not able to shop at supermarkets buy less fresh fruits and vegetables (Ven Ploeg et al. 2009). This lack of access to healthier, fresh food options partly explains the socioeconomic differences in diet quality, as presented above. Several community interventions are in place to address this issue, including the establishment of farmer’s markets, local food production (urban agriculture), and education programs to promote family resource management for healthier eating patterns (Ven Ploeg et al. 2009).

Obesity Among the Poor and the Fat Prejudice

Disparities in food access and diet quality result in different physical and health outcomes. Obesity used to be a sign of affluence and being taken care of in earlier days, when food was scarce, as seen, for example, in historical women portraits, where fuller figures were represented. Being thin was a sign of illness and poverty. Nowadays, social prejudices along body shape have changed. There is a social preference for thinness and a negative stereotype concerning fatness. These stereotypes include negative perceptions of overweight individuals as “not having will power,” among other negative adjectives (Crandall and Schiffhauer 1998). At the same time, fatness is associated with lower socioeconomic classes. Lower income and social standing, as mentioned above, are associated with less access to healthy food options. At the same time, low income areas present fewer opportunities for daily physical activity in so-called “obesogenic” environments, where the lack of healthy food choices combined with perceived lack of neighborhood safety, lack of outdoor space (playgrounds, parks), and poor infrastructure and transportation options increases the individuals’ vulnerabilities to becoming overweight or obese. A second issue at play is the psychological consequences of poverty, which increase stress levels and, at the same

time, vulnerability for excessive weight gains and other health conditions, such as hypertension and heart disease. Conversely, obesity is also linked to social class, by influencing social opportunities through existing social prejudices (stigmatization and discrimination), limiting an individual's ability to improve his/her socioeconomic situation (Sobal 1991).

Summary

The topic of food and class is an important one across many disciplines. Food is much more than nourishment – it serves as a way to mark status in society, a vehicle for socialization, and a way to increase mental well-being, among other things. While food fulfills many different social and psychological needs, it is also closely linked to overall health. As social classes distinguish themselves through different tastes and food preferences, these differences are associated with health disparities and other issues, such as disparities in housing and neighborhood location and social stigma related to obesity, as a consequence of poverty and different eating patterns.

Cross-References

- Culinary Cosmopolitanism
- Eating and Nutrition
- Ethics and Food Taste
- Food and Choice
- Food Security
- Food Security in Systemic Context
- Obesity and Consumer Choice
- Taste, Distaste, and Food

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Food and Health Policy

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Synonyms

Actions; Goals; Legislation related to food and health

Introduction to Food and Health Policy

What is food policy? Miller and Deutsch (2009) discuss what constitutes food studies; they say

that food studies are not really the study of food itself but the study of the relationship between food, the human experience, and food (Brillat-Savarin 1976; also see ► Brillat-Savarin and Food). Miller and Deutsch (2009) outline areas of study such as food science, agricultural science, culinary arts, public health nutrition, and agro-economics, to name but a few areas which they see as incorporating food studies. Food policy incorporates all of the areas but is more than even the study of the relationship between food and the human experience. Food policy is more than health and more than just agricultural policies or even nutrition policy as individual strands; it is the interconnectedness and sometimes even the disconnect between these various areas.

Food policy, as an academic subject, is the study of the relationship between all these areas of study and how policies are formed or not developed despite the weight of the evidence (Lang et al. 2009). For a long time, transport policies were not considered as having much to do with food policy; however, now they are seen as integral in terms of how food is transported from where it is grown to where it is consumed. Food policy can also be defined by the absence of a written policy or even benign neglect of an area. The failure to relate food production to oil and oil prices was for a long time a major commission in food policy; the food system relies on oil, oil to produce fertilizers for food, oil to power the machines to harvest it, oil to process it, and oil to distribute it. There is an argument that food policy should not become a distinct area of endeavor seeking instead to become part of and embedded in other policies. Like the concept of health in all policies, food should be in all policies. This in reality is difficult to achieve, and the fallback position is to develop a separate food policy. This usually takes the form of a nutrition-based policy (Milo and Hesling 1998; Caraher and Coveney 2004).

It becomes clear that healthy food-related policies can have an impact on other issues such as environment, considering the example of campaigns to increase fruit consumption in the global north. Fruit consumption has increased significantly since the mid-1970s; this has been largely

accounted for by the very sharp rise in purchases of fruit juice which does not provide equivalent nutrition to its fresh counterpart. This fruit juice consumption, however, is often of juices from long-distant fruit, notably oranges from Brazil. A study by the Wuppertal Institute in Germany calculated that 80 % of Brazilian orange production is consumed in Europe. Annual German consumption occupied 370,000 acres of Brazilian productive land, three times the land devoted to fruit production in Germany. If this level of German orange juice consumption was replicated worldwide, 32 million acres would be needed just for orange production. The increasing expectation that fruit juices should be available throughout the year also contributes to this rise in consumption. If countries in the global north substituted orange juice for what they can grow and produce regionally, then this would contribute to a reduction in the environmental impacts. Of course what is occurring is a social phenomena in that orange juice is seen as something more luxurious and is imbued with concepts of sun and health. So health policy can have impacts on trade and environment, but equally areas not immediately related to food can have an impact on food and nutrition; this can be trade policies or even transport policy (Kranendonk and Bringezaau 1994). This helps make the case for food policy which is wider than just nutrition or even production but which incorporates elements of trade and global equity (see also “► Free Trade and Protectionism in Food and Agriculture”; “► Environmental Ethics”; “► Environmental Justice and Food”).

Most of the existing food policies that exist are divided into two groups; the first are those that have nutritional health as their focus and the second group are agricultural/processing policies (Bronner 1997; Milo and Hesling 1998). The dangers inherent in both approaches are that there is no sense of joined-up policy. This is despite calls for the development of joint food and nutrition policies by the World Health Organization, following the 1992 International Conference on Nutrition. Egger and Swinburn (2010) make the link between the nutrition implications and the planetary ones in the subtitle of their book

How We're Eating Ourselves and the Planet to Death. There is of course a danger in assuming that nutrition equals food policy and occupies the moral high ground. Lang et al. (2009) set out a typology of “three nutritions.”

Life Science Nutrition: food cannot be seen only as a totality of its micro and macro components that influence health, the biomedical approach (see also “► [You are What You Eat](#)”; “► [Eating, Feeding and the Human Life Cycle](#)”).

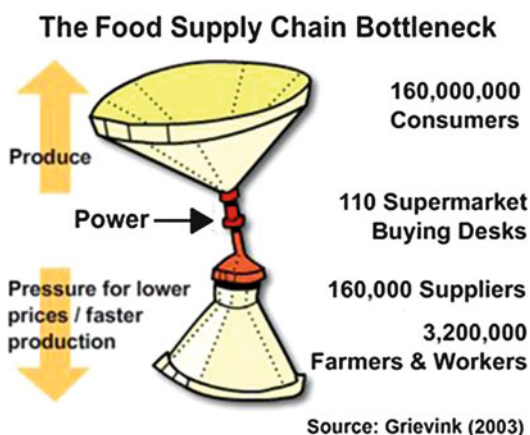
Social Nutrition: food can also be seen as a mean of socialization, linked to cultures and other social contexts.

Eco-Nutrition: food is now seen as an integral environmental component that affects and is being affected by the environment and hence needs to be produced and distributed in an ecological way. This is an attempt to relate nutrition to sustainable growing and processing.

These concepts are broadened below in the section on ways of conceiving food policy. In the sections that follow, the following are set out food and public health policy with the tensions between health and production policies set out, the new malnutrition and the shift from hunger to hunger and obesity in the nutrition transition, and issues about taxation and subvention in food and health policy including taxation as a means of changing behavior. These are dealt with under the four headings of globalization power and control in the food chains, ways of conceiving healthy food policy, food inequality and the nutrition transition, and finally interventions in public health and obesity prevention from tax to subsidy.

Globalization Power and Control in the Food Chains

Figure 1 highlights the concentration of power for the majority of foods grown and processed in Europe. The power and control are located at the bottleneck with the 110 buying desks who determine the type and price of goods that eventually appear on the supermarket shelves.



Food and Health Policy, Fig. 1 The supply chain funnel in Europe from farmers/producers to consumer

This has implications for growers and the consumer with what is called the funnel effect, with this process of concentrating power being repeated globally with respect to most commodities. It results in a concentration of buying power, with fewer buying desks and fewer outlets and less power in the hands of the grower (Monteiro and Cannon 2012). The buying desks of the large transnational corporations (TNCs), whether retail or fast food, do not want to be dealing with a large number of small producers. This leads to concentrations in the growing and production of food. There have been changes over time in who controlled the food system in the early 1900s farming was dominant with the manufacturing sector assuming dominance in the middle of the century; this changed in the 1960/1970s to manufacturers and wholesalers with retailers emerging as dominant in the last 20 years of the twentieth century and in this century. This dominance by the retailers is being challenged by the food service sector (fast food, takeaway, and restaurants). Globally power is concentrated in a small number of TNCs; it is estimated that 20 major companies control up to 80 % of global food trade (Lang et al. 2009). Key impacts of globalization of the food system include:

- Development of large multinational companies who control what is grown, where it is grown, and prices
- Loss of biodiversity

Homogenization of culture

Less emphasis on public health

(See also “► [Community-Supported Agriculture](#)”; “► [Food Deserts](#)”; “► [Food Security](#)”; “► [Trade and Development in the Food and Agricultural Sectors](#).”)

Public health concerns are subservient to those of business and trade. As was seen above, with orange juice, there are also problems when nutrition policy ignores or neglects to account for wider impacts such as those on the environment.

The concentration of power can be further represented by a north/south divide with the major international companies being based or originating in the rich north. The funnel or wine glass model represented in Fig. 1 is replicated across the globe within and between countries in terms of food power, trade, and control of the food chain. A small number of transnational corporations have power at the stem of the wine glass, controlling those who produce food and controlling the choices of those who consume (the industry calls this choice editing). This has implications for growers and the consumer with what is called the funnel effect, with this process of concentrating power being repeated globally with respect to most commodities. It results in a concentration of buying power, with fewer buying desks and fewer outlets. All this leads to concentrations in the growing and production of food.

An example of the global power of the food industry and the economic impact on nation states comes coffee growing. Globally, five major roasters are Procter and Gamble, Nestlé, Sara Lee, and Philip Morris with 40 % of world trade. The key driver is price for the major roasters. So they go where the coffee is cheapest; in recent years this has been the Far East (Vietnam) where World Bank policies have resulted in a glut of coffee resulting in lower prices for growers globally. So the basic grade coffee bean, for instant coffee (which accounts for about 80 % of the total coffee market), can travel across the globe for processing. In 1990 the world coffee trade was worth US \$30billion, of which producing countries received US \$12billion by 2004 global revenues were in the order of

US \$55billion but only US \$7billion went or stayed in exporting nations. The cost for consumers stays the same or increases slightly; the main beneficiaries are the roasters and retailers.

So the point is that the old-fashioned notion of food policy as being simply related to health no longer holds true, if indeed it ever did. The danger is that food and health policy can be seen as merely a way to pick up the pieces after the event. So ill-health is the consequence of unbridled and unregulated food chains (Egger and Swinburn 2010). If food policy is to be successful, it needs to engage with the food chain in its entirety. This leads to the idea of conceptualizing the food chain and food policy's relationship to it.

Ways of Conceiving Healthy Food Policy

Lang and Heasman (2004) set out three paradigms of the food system (see Fig. 2 below which is based on these paradigms). These are:

1. A productionist approach
2. The life sciences approach to health
3. An ecologically integrated approach to health and environment

These are similar to the three “nutritions” mentioned earlier (Lang et al. 2009). The middle one is highly technical and based on technology and modern advances in nutritional knowledge. It offers hope for improvements in health and nutrition through technology and modern advances in nutritional knowledge (Gibney 2012). This will be delivered through novel foods, new technology, and changes in health-care screening. There remain two problems with such an approach: the first is concerned with the availability of such initiatives introducing a growing inequality between the countries of the north and the south; the second is the danger of it widening inequalities within countries. It remains questionable if such an approach can be seen as a population approach. There are two approaches in public health nutrition, the universalist and the selectivist. The former targets the whole population on the basis that small changes across the whole population are preferable to big ones in a small subsection of the population.



Food and Health Policy, Fig. 2 The models of the productionist paradigm of food production (*top*) and the ecological paradigm (*bottom*) (Lang and Heasman 2004)

The productionist paradigm sees human health best served by an efficient and productive food chain built on a model of more and greater efficiency. The second agricultural revolution following WWII in the shape of better and more efficient production, delivery, and retail is now being

promoted through the development of genetically modified foods and other advances in technology. The drive is profit and the growth of corporations. The proponents of this model also claim it will address food security, although this is only in terms of the production of the total amount of

food produced, and these claims do not address issues of access or rights to that food (Sen 1981 and 1997).

The ecological paradigm works from a different set of values where the drivers are human and environmental health, and the system works to deliver on these values. Much as it would be nice to believe that this is the desired outcome for all players in the food system, there are many tensions inherent in this models and many vested interests at play; the neoliberal economic model of free trade and the removal of barrier including public health ones to trade are paramount (see examples of this in “► [Fair Trade in Food and Agricultural Products](#)”; “► [Public Institutional Foodservice](#)”).

As noted above, the majority of food policies are developed from a health perspective; this is as much about historical antecedents as about the logic of the process (Ostry 2006; Caraher and Coveney 2004). Over time, health policy makers became aware that the development of health policy could not happen in the absence of working with agricultural, business, and economic interests. As the food chain became more global and power became concentrated in a number of global companies, nation states became less involved in policy making, leaving this to the private sector and global governance institutions such as the World Bank, the World Trade Organization (WTO), and regional trade bodies such the European Community/Union and North American Free Trade Agreement (NAFTA). The politics of food became more complex, and the influences shifted (Schanbacher 2010).

The 2009 report “A Future for Food” from the Public Health Association of Australia raises many of these issues and calls for a “national integrated food policy” for Australia, which would involve all the food sectors including the food industry. The report highlights a number of dilemmas for Australia which include questions about:

- The appropriateness of setting limits to the amount of food to be eaten and foods to avoid which are less sustainable, e.g., meat consumption

- The balance between land to grow feed for animals and land to feed humans directly
- The role Australia should play in addressing concerns re world food security, i.e., plans for Australia to produce sufficient food to feed the emerging economies of Southeast Asia

These are all challenges both to the current food system and the food choices individuals make every day. Irz et al. (2003) have estimated that to bring food production into line with WHO/FAO healthy eating guidelines (i.e., an integrated food policy), production of the following would need to be decreased:

- Pig meat by 5 %.
- Butter by 13 %.
- Cream by 18 %.
- Animal fat by 31 %.
- Soybean oil by 14 %.
- Rapeseed oil by 30–35 %.

And production of the following would need to be increased:

- Fruit production UP by 100 %
- Vegetables UP by 100 %
- Cereals production UP
- Nut production UP
- Fish catch and production UP (Irz et al. 2003)

Despite the calls for joined-up policy and even for the development of national food and nutrition policies, this has not resulted in many such joined-up policies. The reality is that agricultural, trade, and financial interests gain the upper hand. Another way of addressing the problem is to ensure that all policies are food “proofed.” So a set of criteria are developed against which all policies are measured against. Key among these criteria should be the issue of preventing further inequalities and pulling back existing ones – the topic which is addressed next.

Food Inequality and the Nutrition Transition

At a global level, inequalities are stark with the rich-developed nations enjoying choice and food safety at a time when the Millennium Goal to reduce hunger is not being met. In fact, the numbers at risk have increased (George 2010).

These divides are sometimes stark and obvious as a section of the population engages in conspicuous food practices and consumption, while others suffer “want.” While these global divides are often apparent and somewhat visible, food insecurity within developing and developed economies is seen as something of a myth and often viewed as being self-inflicted and due to inadequate food knowledge and skills on behalf of the individuals or families concerned. In the light of the recent global economic crises, countries in the global north are seeing an increase in poverty and a consequent rise in food poverty. This is evidenced by the number seeking food aid from charitable and state institutions (Poppendieck 1999, 2010).

As the background to the changing nature of food poverty and insecurity, the world is experiencing a “nutrition transition” (Caballero and Popkin 2002) with diseases, such as obesity and type II or late-onset diabetes, previously associated with affluence, middle age, and lifestyle factors, now skipping a generation and occurring among younger members of society and in low-income and marginalized groups. This has in the past been preceded by changes in the makeup of population demographics and generally better health status due to infectious diseases being controlled and improvements in nutrition, housing, maternal health, and health care. The “nutrition transition” model helps explain some of these effects with overabundance and want existing in the same societies. The nutrition transition is also occurring in the developing world with diseases of undernutrition existing side by side with non-communicable diet-related diseases. While hunger is still evident in developed economies, 47 million Americans will go hungry today. This is counterposed with the obesity epidemic. The paradox is that the want and abundance in terms of overconsumption exist in the same cohorts (Pena and Bacallao 2000). So this group goes hungry at times and overconsumes at others – often with the intake of inappropriate foods. This paradox can be seen in the work of Popkin, and his work is worth reading to untangle these complexities. There is always the danger that in seeking explanations and solutions, the focus is on individual behavior.

The choices that people are making in the name of what might be called the new concerns with ecological health mirror the facts of life of those who live with “want” – that is, restricted choice and diets. The distinction is, of course, that of choice – if I chose to eat less meat and consume less or eat a locally based diet, then that is different than if this consumption is a matter of necessity and lack of choice (see Kingsolver 2007; Pollan 2009 for examples of this new austerity as lifestyle choice). At the same time as these changes in food security/poverty, we are also witnessing a growth in new ways of dealing with food and which has been labeled the “new austerity” movement (Caraher 2011).

A short example may help illustrate some of the above contentions. With the demise of the Soviet Union, the Russian population experienced shortages of foodstuffs. Rooftop gardening emerged as one way of addressing urban food shortages and adding to the diet. In one district in St. Petersburg, 2000+ tons of vegetables are grown. This arose out of the need to meet food shortages and food insecurity (World Health Organization 1999). On a similar climatic level in Michigan but a few degrees south in latitude, there is a group of food consumer “activists” – those committed to “eating locally” in Michigan. The group have adopted the name *Edible WOW* (WOW takes its name from three densely populated counties in southeast Michigan: Washtenaw, Oakland, and Wayne). These are part of Edible Communities’ network of local food publications (see www.ediblecommunities.com). The reasons for the actions in Michigan are very different from those in St. Petersburg; the WOW group is focused on eating locally, methods of production, and the origins of food, all admirable aims. But here, are two groups doing similar things but for different reasons, one because they had to, the other because they chose to. Developments such as WOW have also been critiqued for being “middle class” and niche in their operations. They can be critiqued for the level of social skills and social capitals needed to adopt an alternative lifestyle. The irony is that some of the rich chose to live in ways that the poor or peasant societies lived; they can do this as they have the resource and capabilities. The poor,

now, have less choice and power to do this as their foodscapes are controlled by TNCs and the power of availability and advertising. Contemporary calls in the United States to address “food deserts” focus on deprived areas having a supermarket or large grocery store which sells a range of fruit and vegetables (United States Department of Agriculture 2009). This is a reflection of the dominant market system. Michelle Obama, the US first lady, announced a US \$400 million effort to eradicate food deserts within seven years; this entailed working with key retailers to ensure all communities have a supermarket to shop from; key partners include Wal-Mart. All this at a time when the alternative movement is growing, but for the poor and disenfranchised, there it appears no “alternative” but the mainstream. So it may be that future development of alternative food systems and networks contributes to a further sense of alienation and creates a further gap in the social divide (see examples of this in ► [Public Institutional Foodservice](#); ► [Slow Food](#)).

At a time when well-off consumers are moving away from the dominant system, the dominant system is being brought closer to the poor. This development of a modern day “Walden” (Thoreau 1854/2004) or return to an ideal of bucolic living, which is more easily accessible and available to those with capital assets and resources. So some, with self denial and lifestyle choice as part of the “new austerity” such as 100 mile or 100 km diets or locavore-based diets, are expressing a form of social capital which has its roots in the protestant ethic of denial and the greater good (Belasco. 2007; Poole 2012). As Gopnik (2012, 93) asks “*who is likelier to eat the today the diet of the American farmer or the Russian peasant of the Old Country-brown bread and freshly grown local vegetables, free-range chicken and raw milk cheese- the farmers’ great-grandchildren, or the professor of comparative literature at the nearby liberal arts college?*” But, ironically, this may not be an option for those on low incomes or disenfranchised in other ways (see as an example of this new genre Kingsolver 2007).

At the same time as the nutrition transition, the face of food poverty is changing with undernutrition and micronutrient deficiencies now exiting

Food and Health Policy, Table 1 The “old” and “new” forms of food poverty and (in)security

	“Old” food poverty	“New” food poverty
<i>Availability</i>	Lack of food	Overabundance of processed foods
<i>Nutrition problem</i>	Undernutrition	High calorie intake and overall lack of balance and possible micronutrient deficiency
<i>Specific groups</i>	The urban poor, the “indigent,” and those who are unemployed	The same but with the addition of the working poor
<i>Nutrient profile</i>	Nutrient light	Energy/calorie dense
<i>Nutrition problem</i>	Undernutrition	Lack of balance
<i>Meal occasions</i>	Few	Continual “grazing”
<i>Food expenditure</i>	High % of household spending	Low % of household spending
<i>Price implications</i>	Absolute cost of food	Relative cost of food
<i>Social implication</i>	Removal from the norm	Social and cultural isolation
<i>Work</i>	Manual	Sedentary
<i>Easiest mode of access</i>	Walk or bike	Car
<i>Fuel</i>	Food	Fossil fuel
<i>Drink</i>	Water	Carbonated drinks
<i>Price pressures</i>	Cost of food	Cost of food relative to other demands, e.g., transport and housing
<i>Appearance</i>	Thinness	Obesity
<i>Fantasy role model</i>	Plump/fat royalty	Thin celebrities
<i>Disease patterns</i>	Diseases of “want” characterized by undernutrition	Diseases of “want” and affluence occur side by side

Adapted from Lang et al. (2009) (see also ► [Food and Class](#))

alongside the problems of overnutrition. This is important to note as the changing nature of food supply and consumption is leading to a need to revisit and reconceptualize our ideas of food poverty; see Table 1 for how the new or modern food (in)security can be conceived. Food inequality needs to be key to any food policy development;

in fact, it can be argued that the key function of any food policy or food in other policies should measure the impact of any increase in food inequality or access. The key point is not that all forms of alternative food create inequality but that some do and should be monitored to ensure they do not increase inequalities of access and provision to food. Eating seasonally was once the preserve of the poor now with the development of what Gopnik (2012) calls the modern “*moral taste*”; seasonality and eating locally are fast becoming the terrain of those with resources. The price of food poverty or insecurity in the past was seasonal eating; now the rich pay money to eat seasonal and local food.

The changes in any society are complex and subject to local food culture and customs. However, they tend to follow a pattern whereby in the first stages of development, the rich adopt the food habits of the rich first-world countries. This can take the form of consumption of takeaway and processed foods, all of which can contribute to chronic diseases such as heart disease and cancers (Popkin 1998). The reasons for this are twofold – these lifestyle choices are culturally aspirational but also expensive and too often only the well-off can afford them.

The second stage of the changes are rooted in the food system becoming more industrial and concentrated so that processed foods and fast food become more affordable to all. Fast food is “fast,” thanks to modern technology and suits modern lifestyles and in many instances a viable option for those on low incomes (the Big Mac index is an indicator of how much time you have to work to afford a Big Mac, see <http://www.bigmacindex.org/>). In fact, the use of takeaway and fast food (or street food) often becomes an important money and labor-saving mechanism for many who are engaged in piecemeal work.

At the latter stage of the transition, the rich classes return to eating more basic foods due to the health implications (see ► [Population Growth](#); ► [Slow Food](#)). The dietary impacts of such moves, for the poor, are an increase in the fat, salt, and sugar content of these foods with possible long-term consequences for health burdens. Food or nutrition policy that focuses on one aspect is bound to be only partial in its scope and

effectiveness. Obesity and coronary heart disease (CHD) have, until relatively recently, been viewed as diseases of affluence/food choice and less of a problem in developing countries than in rich, industrialized ones. This is no longer true (see Caballero and Popkin 2002; Egger and Swinburn 2010). CHD and some food-related cancers (e.g., bowel) are on the increase in developing countries, where the more affluent social groups are tending towards a more “western” lifestyle – eating different foods, taking less exercise, and not just aspiring to, but achieving, western patterns of consumption. In developing countries, obesity now exists alongside more traditional problems of undernutrition.

The modern globalization process means that many of these changes are now occurring in the space of single years as opposed to decades (see ► [Population Growth](#)). The consequence is that the chronic and acute diseases and problems associated with food occur side by side as opposed to occurring temporally or sequentially. So the behaviors associated with poverty are played out by a section of the population, while another section indulges.

Allied to this is the concept of relative poverty, where the shifts reflect both changing lifestyle practices and cultural norms and not simply the amount of food. Food poverty is relative, in that it is dependant on the standards in a society, and people define their cultural needs relative to the population standard; in many developed countries not being able to afford meat or being able to eat out are now considered part of the measures of food insecurity/poverty. The term “socially acceptable ways” is often included in definitions of food poverty/security; this could, for example, be taken to mean that even if an individual would get their nutrient requirement from a source such as a food charity that it is unacceptable if the majority of their contemporaries are able to afford a healthy diet and shop at supermarkets. A definition of food security is “Access to enough food for an active, healthy life; at minimum, includes the ready availability of nutritionally adequate and safe foods and an ensured ability to acquire acceptable foods in socially acceptable ways” (included in Troy et al. 2011). The recent US Institute of Medicine report provides definitions of food security, high

food security, low food security, food insufficiency, and hunger. Troy et al. (2011, pp. 2–3) define very low food security as:

A range of food insecurity in which households report multiple indications of food access problems, but typically report few, if any, indications of reduced food intake on the USDA survey. Households reduced the quality, variety, and desirability of their diets, but the quantity of food intake and normal eating patterns were not substantially disrupted.

This illustrates the changing nature of food insecurity/poverty. The Feeding America campaign (see <http://feedingamerica.org/>, accessed 22nd Apr 2014) reports that 37 million Americans regularly go hungry. This is alongside the problems associated with overconsumption such as obesity and related chronic diseases such as diabetes. Indeed, many of the same groups who overconsume may at different stages go hungry.

Hunger still exists in many communities, and the changing global economic crises are exacerbating this, often in new ways and groups such as migrants and the working poor. For example, migrants, in many nation states, have ambiguous status and entitlement to welfare and security benefits. The working poor are in danger as they may not be entitled to welfare and food benefits but are forced to squeeze their available income, and what is known is that spending on food is the elastic item in the budget that you can cut back on. Riches (2002) has reported similar trends in Canada.

This is equally true of the life sciences approach mentioned earlier, where the benefits will be available to those who can afford them, and they may even widen existing inequality gaps. Advances in treatment, novel foods, biotechnology, the human genome project, and epigenetics are less likely to be available to those with the most need but the least resources; this is true at both country and individual levels.

Interventions in Public Health and Obesity Prevention from Tax to Subsidy

There are clearly benefits from a globalized world. In this respect, it is important to make one crucial

distinction; the association of free-market liberalization and economies based on this principle with liberal societies is at one level misleading as it is not with a straightforward relationship (Hertz 2001). Many development reports identify the Scandinavian countries among the best places to live, and many of these have barriers to food trade based on public health principles (e.g., sales tax on unhealthy foods, Sweden and its banning of advertising to children, Denmark with its ban on trans fat. Other countries such as the United Kingdom, the United States, and Australia advocate protection systems based on voluntary agreements with the food industry (Panjwani and Caraher 2014).

A report from bankers USB Warburg (2002) pointed out that health issues such as obesity are better controlled in well-regulated societies. The old public health was concerned with infrastructure and the provision of health food to people. The neoliberal economic agenda has shifted this from an emphasis on state provision to one of consumer choice. Essentially reflecting a move from the rights of citizens to one where the consumer has to exercise caution as in “caveat emptor” or buyer beware.

Caraher and Cowburn (2005) point out that interventions need to focus not just on taxation or removal of certain foods but to look to a comprehensive approach so that taxation of food high in fat, salt, and sugar is matched with subsidies on healthy options. However, given the antagonism that and the general public and the food industry express over taxation may require a selectivist approach to its introduction. For example, focusing on children or vulnerable groups in the first instance helps win over public and political opinion. The debate should not be about whether food taxes disadvantage the poor or restrict choice but what is the part that food taxes play in any overall program of intervention. As opposed to being seen as barriers to health and growth, such interventions can be seen as contributions to long-term health and even the GDP of a country (Caraher and Carr-Hill 2007).

Food programs such as the World Food Program organized by the Food and Agricultural

Organization (FAO) are moving from models of delivering food that rely on global trade to models that encourage local food production and sustainable development (Food and Agricultural Organization 1999). The new policy of enabling development fits well with Keynes' maxim in *National Self-Sufficiency* that ideas, art, and culture should circulate freely across borders but that capital and goods should remain national. For example, in many sub-Saharan areas, the staple diet is based on the production of maize. The problem is that maize is a cash poor crop, and currently the focus is on raising the incomes of farmers by encouraging them to grow high-value crops. The tension here for food security is that such a policy leads to food becoming rivalrous in both the domains of consumption and production. Cash crops for farmers result in more money for the producer but are more expensive and possibly less nutritious and less energy dense foods (e.g., it requires 440 g of potatoes to provide the same kcal as 100 g of maize). The recirculation of money may also only occur within a select elite group and have a trickle down or diverse impact. The idea is that such goods could command a cash price locally or internationally, resulting in the flow of money to buy maize on the international market. While farmers would benefit, the community in general may suffer if the international commodities market results in the price of potatoes dropping or the price of maize rising. Such a policy based on changing local food habits also runs the danger of having to overcome cultural barriers towards food.

Such policies, outlined above, as well as being based on crops for cash (and export) are often accompanied by the removal of subsidies and support for farmers and crops. The use of subsidies and its influence on global trade can be gauged from the fact that in 1999 (Lang and Heasman 2004):

- In the UK, £76 billion was provided in support to farmers in Europe – this accounted for 49 % of income per full-time farmer, which was estimated to be £11,221 per farmer.
- In New Zealand, which operates a similar scheme to Australia, the extent of support to

farmers was £60 million, and this accounted for 2 % of income or £660 per full-time farmer.

- In contrast, the situation in Poland was that the total subsidy was £2 billion, and this accounted for 25 % of total farm income but only £660 per full-time farmer (see Lang and Heasman 2004 for a discussion of this).

Farmers sometimes change their mix of crops in response to the removal of subsidies or because of low prices for one crop, but frequently they do not or cannot. The behavior of Ethiopian farmers, decreasing the cropland they plant following a year of prices disastrously below their costs of production, is different from farmers in the United States, Canada, or Australia who are able to withstand a season or two of low prices. In return, the subsidies given to farmers in the developed world in areas such as the European Union and America result in the subsidization of cheap exports to the developed world and the undermining of local food systems.

The relationship between the level of subsidies in the European Union Common Agricultural Subsidy Program and rises in exports is clear – the subsidization of high-cost agricultural systems such as that in the European Union allows foodstuffs to be dumped on the world market and particularly the developing world (Lang and Heasman 2004). Subsidized agriculture in the developed world is often criticized as a form of protectionism. And has influences on food security both in the country of origin and the global market where it can be argued it allows unfair trade by competing with local produce. It both externalizes the cost of “cheap” food and even exports the negative health consequences. Here can be seen the negative impacts of subsidies – increasing food prices for the consumer and more especially for the poor. In addition, subsidies may lead to increases in intensive agriculture with a subsequent impact on natural capital in terms of increased pollution.

The same argument can be made with respect to the reduction or removal of subsidies – this forces farmers to resort to more intensive farming methods with subsequent impacts on the natural environment and the health of local farming

communities as well as the physical and financial infrastructures. On the other hand, there can be benefits, depending on how subsidy policies are set out and conceived. Currently, there are few food policies which focus on using subsidies as means of producing more healthy food in line with nutrition guidelines.

The current restructuring of the Common Agricultural Programme (CAP) in Europe heralds a return to the social roots of the European Common Market (Garzon 2006). Its origins lie in equalizing the income differential between rural and urban areas with the additional purpose of keeping farmers and communities on the land and encourage environmental stewardship and livelihoods. In addition within current developments, there is an attempt to divert subsidies from large landowners and companies to smaller units. Such an approach recognizes the importance of agriculture to society and in helping create urban/rural links, harking back to the original intentions of the Treaty of Rome in 1957 (Garzon 2006).

In the United Kingdom/Europe and the United States, the subsidy program leads to support for the growing and production of unhealthy foodstuffs, the surplus of which often finds its way onto the global market and contributes to the nutrition transition. This often results in an increase in fat and processed food in the developing world.

The consequences of these moves are that those who produce cheap local food are themselves trapped in a cycle of food insecurity. This policy of encouraging development through growth appears to offer the benefits of creating less dependency and of encouraging both money and goods to circulate locally. This is in contrast to traditional models of food aid which were vertically based, relying on food being bought on the world market and then brought across national borders and distributed to local distribution points. Yet both come with their problems.

Unbridled choice as noted in the previous section is not good for health as individuals tend to revert to choosing what they like a lot and if left to their devices feast every day. This is especially true for young people where habits are set early and become the templates for food behavior in later life.

Discussion

Why is all this important? It is important because the lessons of the past are not being addressed, and this new generation of food problems are presented as if they were something new, whereas in fact they are part of a longer tradition originating in the first nation states and trade as was seen in the Columbian Exchange following the discovery of the Americas by Columbus. The west gained the potato/tomatoes/maize, new colonies for food production, and in turn the Americas got communicable diseases which in some instances decimated populations. Now chronic diseases such as heart disease and cancer are crossing boundaries in following the food trade. Albritton (2009) argues that capitalism creates hunger and obesity and that these dialectics of the new poverty are the result of control of the food system by a small number of global companies right through the food chain. This is among the reasons why many embrace alternative food networks and supply systems as an attempt to escape such control by outside factors; a lack of trust in the conventional food system drives people towards a sense of localism (Morgan et al. 2006). This move away from direct action can also be seen as a failure of food policy, a failure to engage and to understand the dynamics of modern food policy and capitalism. While the new generation of nongovernment organizations (such as Greenpeace and Friends of the Earth) are developing sophisticated ways of dealing with the new global order, other activists are becoming disenchanted and seeking ways of direct action or, more increasingly, indirect action by opting out of the system. Those protestors, who through their violence gain media attention, may be less concerned with the issues of reform of the system than with its overthrow. They may, in fact, be diverting attention from the problems of poverty and access. The individual protest is devoid of meaning beyond the community in which it happens (Caraher 2003).

Belasco (2007) noted that the instigators of the “new austerity” movement the alternative food networks often had their roots in “oppositional” politics and this can be harnessed to develop what Thompson (1993) termed the moral economy of

the mob – that is, a concern with higher level elements beyond the individual. However, there is the concomitant danger of extending this model of self-help. Encouraging people to act and then ‘blaming’ them when their material and financial circumstances work against them making such changes. Or blaming them when their individual changes do not add up to a mass change (Caraher 2003).

This new protest movement may involve others in simply getting on with growing and supplying food to themselves, their families, and neighborhoods. Some of this can happen at a structural level, whether at state or regional points. Toronto stands out as an example of a citywide food policy, which in recent times has sought to influence its own food supply hinterland and foodshed (Straessle 2007; Lister 2007). The difference between the Toronto experience and that of other alternative food movements is that food policy is embedded in the systems of the state. This of course brings with it its own disadvantages but does include the possibility of more structural and lasting changes in terms of what it can influence. Also the Toronto experience is one of linking the ecological aspects of food production with reductions in food poverty.

The current focus on food as a green issue hides the poverty of many who are not able to access or afford food and may also misunderstand the cultural aspects of food and its social significance (Caraher and Reynolds 2009). The challenge for these new networks is to broaden their scope by adopting a broader approach to include lobbying, campaigning beyond members’ individual interests and include a specific approach to addressing inequality and inclusiveness.

With the popularity of the new austerity movement (see ► [Slow Food](#)), there is a danger in taking the words of the American philosopher Aldo Leopold (1996) at face value when he said there are spiritual dangers in not owning a farm; the first is to suppose that “breakfast comes from the grocery store” and the second that “heat comes from the furnace.” The thrust of this argument is alluring but worrying as it runs the risk of victim blaming and of allowing the behaviors to

be closely associated with values that assume self-help is the answer. All of the above point to a need for food policy which integrates the issues of food growing, production, processing, and consumption of food. While we may want to define and measure the problem this should not blind us to the necessity for action to tackle the problem, justice needs to be seen to be done. As Amartya Sen (2009) argues in his book ‘The Idea of Justice’ we need to make the world less unjust by actions and not simply seek to articulate a grand theory of justice. Therefore we need research which shows us the way forward in tackling problems and not just describe them.

Summary

The thrust of the Aldo Leopold argument is alluring but worrying as it runs the risk of victim blaming and of allowing the behaviors to be closely associated with moral values and of locating food policy as simply about facilitating individual decisions to behave morally. These, while useful, do not fundamentally change the conditions or circumstances in which people live, and for those who are food insecure or living in food poverty, they will in most cases introduce an extra burden. The Via Campesina movement from the developing world provides one model where the welfare of food is linked to the green issues of sustainability and concern for the environment (see <http://viacampesina.org/en/>), but the roots of this movement are in oppositional politics and of providing a voice for the poor and disenfranchised. Any food policy needs to incorporate all these elements and of creating supportive environments to health and the environment through regulation and education.

The tension for food policies is to find a space between the issue of protecting the environment and contributing to health while providing a just and fair food system for citizens. Often this means finding solutions to the current dominant vertical global food supply system by looking at domestic production with more than an economic lens. More and more, this perspective is finding a voice in the growing food sovereignty

movement (see Wittman et al. 2011 for a perspective on this and also ► [Food and Agricultural Trade and National Sovereignty](#)).

Cross-References

- [Brillat-Savarin and Food](#)
- [Community-Supported Agriculture](#)
- [Eating, Feeding and the Human Life Cycle](#)
- [Environmental Ethics](#)
- [Environmental Justice and Food](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Food and Class](#)
- [Food Deserts](#)
- [Food Security](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [Population Growth](#)
- [Public Institutional Foodservice](#)
- [Slow Food](#)
- [Trade and Development in the Food and Agricultural Sectors](#)
- [You are What You Eat](#)

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Food and Life Chances

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Synonyms

Capabilities; Citizen; Consumer; Food security;
Life chances; Social justice; Space and place;
Vulnerability

Introduction

Life chances refer to the opportunities each individual has to improve upon his or her quality of life and are generally correlated to the individual's social situation. Traditionally, life chances has been related to lifestyle choices and the distribution of rewards, however has more recently been used within a social justice perspective informing the question of capabilities and inequalities between social categories (Manuel 2006).

The world is now a place where opulence and destitution are the lived realities of certain groups. Sen argues that this opulence is unprecedented, to the extent that it would have been challenging to imagine a century or two ago. Simultaneously, there is “deprivation, destitution and oppression” (Sen 2001, p. xi). Brown and von Braun state that roughly 80 % of the world's 1.2 billion poor are dependent on agriculture for their survival (Brown and von Braun 2003, p. 1040). The chance of belonging to this group of 1.2 billion people is pervasively determined by “the

chance event of being born in one nation rather than another” (Nussbaum 2006, p. 224). Resolving this inequality is not a simple task. Hobbs argues that “global inequity is the essential challenge facing the planet today” (Hobbs 2006, p. 165).

Historical and contemporary ethical perspectives on food production, distribution, and consumption do not always adequately address the issue of vulnerability and limited life chances. This entry uses recent historical approaches to the ethics of food systems as a lens to explore the complexities of addressing the limited life chances of certain groups of men, women, and children in a globalized world. The entry will use a case study to highlight the intersections and divergences between dialogue concerning the ethics of food production, distribution, and consumption and the ethics of addressing limited life chances for vulnerable groups.

Food production systems have been defined as the combined elements of land, labor, capital, technology, the market, and the institutions that govern their allocation (Brown and von Braun 2003, p. 1040). The application of the definition of “consumption” to food can be undertaken narrowly, i.e., “to eat or drink,” or can be applied more broadly to include definitions such as “wasteful,” “squander,” “absorb,” or “to use up” or “expend” (Collins English Dictionary 2003).

This entry will use the case of the cocoa bean to discuss ethical perspectives and the adequate consideration of the limited life chances of vulnerable groups. The entry will provide a brief background on the history of food ethics in order to situate the ethical concerns raised regarding the food supply chain of chocolate. This example will then be used as a case study to discuss the complexities of a number of ethical perspectives and to argue for systemic ethical perspectives in order to address vulnerability and limited life chances.

Illbery's Place, Process, and Product

The distancing of people from sites of food production began prior to and throughout the

Industrial Revolution (1750–1900) when, in most of Europe, the countryside was depopulated through the urbanization of the new working classes (see Goodman 2009, p. 10; Campbell 2006, p. 119). This irreversibly altered human relations with food (Campbell 2006, p. 119) and since that time, food production systems have become increasingly globalized, creating complex “farm to table” linkages (Brown and von Braun 2003, p. 1040).

In the late 1980s to the mid-2000s, a wide range of microbiological, contaminants, and animal disease-related food scares were reported throughout the European Union (Knowles et al. 2007), inciting a “crisis of trust” among consumers concerning large-scale agriculture and nameless and faceless food (Goodman 2009, p. 3). The food scares corresponded with reports regarding the use of child slave labor in West Africa’s cocoa farms and the distance between the “farm and table” in mainstream food provisioning became a source of concern for the “moral” consumer.

Vulnerability and the Chocolate Supply Chain

In the late 1990s and early 2000s, numerous reports and newspaper articles tracing the use of child slave labor to chocolate products in the international market confronted consumers in the West. In 1999 the United States Department of State report cited an Ivorian newspaper reporting the widespread practice of importing migrant child laborers from Mali to work on plantations (USDOS 1999). This was followed by a 2001 International Labor Organization report that the trafficking of children is widespread in West Africa. By 2002 these findings were quantified in a joint report by the ILO and the International Institute of Tropical Agriculture stating that an estimated 284,000 children in cocoa farms in West Africa were “either involved in hazardous work, unprotected or unfree, or have been trafficked” (IITA 2002).

During this time, the news spread quickly through the international media, and

commentators did not miss the paradoxical nature of the West's sweet pleasure, being produced on the backs of children in slave-like conditions.

An English newspaper *The Express* reported on a documentary produced by award-winning Brian Woods and Kate Blewett, stating that "Chocolate, it seems, carries modern-day slavery into our homes" (Wolfe and Holdstock 2005). Woods was quoted in UK's *The Guardian* on September 28, 2000 as saying "We wanted a way of bringing it home to people in the West and not letting it be something people could watch and go 'Isn't it terrible what people in far-off lands do to other people in far-off lands'" (Wolfe and Holdstock 2005). In the United States *Knight Ridder Newspapers* profiled children who were cocoa farm slaves and reported on a farmer who had been prosecuted in Cote d'Ivoire for mistreating 19 migrant child workers (*Knight Ridder/Tribune Business News* 2001).

Shifts in Ethical Considerations Concerning Food Systems

A fundamental shift in the approach to ethics in food systems followed. Korthals argues (25) that for a long time, the ethics of food was predominantly concerned with food security, focusing on the ethics of distribution and misdistribution and on what might be considered as fair distribution. Though the problematic use of child labor in food production had been established for almost a century, with the 1917 US National Child Labor Committee producing the "Children in Food Production" report, the fundamental shift in ethical perspectives relating to food did not take place for about 60 years. The fundamental shift in the approach to ethics in food systems was representative of "...momentous shifts across the global and national landscapes" (Sassen 2000).

During the late 1980s and 1990s, with the collapse of Soviet-style communism in Eastern Europe, the concentration of power elites in the global North and with the rapid expansion of global flows of trade, "globalization" as both

a process and a political ideology rapidly became "decontested in public discourse" (Steger 2005, p. 14). By the mid-1990s the whole proportions of the global population, within both the global North and the global South, had accepted and internalized ideologies supporting the deregulation of markets, the liberalization of trade, and the privatization of the state (Steger 2005, p. 14).

Simultaneously, momentous legislative shifts were taking place. The 1917 US National Child Labor Committee Report established the link between the ethics of food production and child labor, formulating suggestions for the control and supervision of children in work, in order to safeguard American children from loss of education, overwork, or neglect (National Child Labor Committee 1917, p. 3). This was followed by international legal treaties, similarly attempting to protect children from the worst forms of child labor, including the 1919 Minimum Age (Industry) Convention No 5, which established 14 years as the minimum age for children to be employed in industry and was ratified by 72 countries. In 1966 the International Covenant on Economic, Social, and Cultural Rights enjoined state parties to protect young people from economic exploitation and from employment in work harmful to morals, health, or life. The 1973 International Labor Organization's Minimum Age Convention No. 138 obliged member states to pursue a national policy to ensure the effective abolition of child labor and establish that no child can be employed in any economic sector below the age designated for the completion of compulsory schooling. However, it was only the 1989 Convention on the Rights of the Child that recognized the *right* of children to be protected from work that threatens their health, education, or development (Article 32). Prior to the Convention on the Rights of the Child, child laborers were objects of charity or humanitarian concern; they were not considered to have legal rights (United Nation's Children's Fund 1997, p. 17). Consumers and civil society in the United States and Europe responded to this new knowledge with demands for action (World Vision 2011, p. 5).

The Rise of the “Worried Well”

The 1970s and 1980s saw the introduction of ethical considerations regarding consumption. At inception, consumption ethics primarily focused on environmental campaigns to promote considerations of personal responsibilities within everyday lives (Martens and Spaargaren 2005). However, born out of this new politic of consumption, a shift from production politics to consumption politics leads to the emergence of new social movements, informed by reflexive modernization (Campbell 2006, p. 126). Launched by three leading European sociologists, Giddens, Beck, and Lash published “Reflexive Modernization, Politics, Tradition and Aesthetics in the Modern Social Order” in 1994 (Beck et al. 1994), directing attention to the process of modernity itself. Reflexive Modernization called for a reevaluation of the resource base that is already in existence, rather than the use of science and technology to expand the resource base.

This leads to a renewed emphasis on social justice in food production and consumption and a focus on “short food supply chains.” Localized organic quality food networks were integral in the strategy to restructure the productivist model of the post WWII agricultural settlement (Goodman 2009). Critical social analysis on alternative food pathways renewed the emphasis on social justice in food production and consumption practices. Drawing on the work of Foucault, Beck, Giddens, and Harvey, the alternative model suggested that Western societies had moved from a state of government to governance (Campbell 2006, p. 118), marking the move of individuals from citizens to consumers. This shift is observable in one of the first reports on the genetic modification of food products, the 1994 Polkinghorne report. Within the report food is framed as “politically and ideologically neutral” (Korthals).

The only ethical issue widely considered concerning food previously was the misdistribution of food, not issues of production and consumption. Raising conflicting perspectives regarding the sovereignty of the consumer, alternative, short, and slow food pathways were demanded by the “ethical consumer.”

The Ethical Consumer and the Chocolate Supply Chain

Within West Africa, multinational cocoa-processing and chocolate-producing companies blamed West African governments for the use of child slave labor in the chocolate supply chain, stating that the primary responsibility for enforcing human rights was with governments, charging them to “investigate and eradicate any criminal child labor activity” (see Schrage and Ewing (2005), p. 105). Blame was returned to the multinationals by the West African governments (particularly the Ivory Coast and Ghana as the largest cocoa producers), accusing the industry of earning billions off the labor of children (World Vision 2011, p. 5).

Industry giants initially denied knowledge of child labor in their supply chains and then argued that the task of guaranteeing working practices on every farm was too complex (Schrage and Ewing 2005, p. 104). Cocoa brands were only spurred to action in response to media attention detrimental to their branding (Schrage and Ewing 2005, p. 104) and the serious consideration given to regulating “child-labor-free” cocoa labeling by US politicians (World Vision 2011, p. 8). In order to avoid regulation yet respond to calls for action by consumers, an agreement for cocoa processors and the chocolate industry to collaborate voluntarily became appealing to industry giants. The Cocoa Industry Protocol (often cited as the Harkin-Engel Protocol) laid out a series of date-specific action to work towards eliminating the worst forms of child labor (WFCL) from supply chains and was agreed to by major cocoa and chocolate companies, the US government, and West African governments in late 2001 (World Vision 2011, p. 8).

Notably, the Cocoa Industry Protocol referenced major international legislative frameworks including the International Labor Convention No. 182 and the International Labor Organization Convention No. 29, collectively prohibiting the Worst forms of child labor and forced or compulsory labor (Schrage and Ewing 2005, p. 106).

Confidence in the Harkin-Engel Protocol began to diminish in 2008 as the process failed to deliver on the Protocol's core objective of creating and implementing a public standard and certification process to provide consumers with a "guarantee" on "cocoa free of the worst forms of child labor" (World Vision 2011, pp. 5–6). Agreement on a public standard was never reached, and rather than providing absolute certification, a continuous improvement system was produced.

In February 2008 Fortune reported that many aid groups share the opinion that the provisions of the Cocoa Protocol have still not been met, with the situation worsening in the Ivory Coast between 2002 and 2004 when civil war gripped the country and "blood chocolate" was said to be resourcing armed groups (Parenti 2008). Even the Executive Director of the International Cocoa Initiative admitted "We've not yet had a significant effect, but it's a journey" (Parenti 2008).

During this period, "fair trade" expanded from an organized social movement to a market-based approach, aiming to assist producers in developing countries to establish better trading conditions and aiming to promote sustainability. The initiative/s advocated higher export prices and higher social and environmental standards. In 1988 the first Fairtrade label was launched under a Dutch development agency initiative and in the late 1980s and early 1990s the initiative was replicated in other markets in Europe and North America. The first Fairtrade certified product was Green and Black's Maya Gold Chocolate and was made with cocoa from Belize, in 1994, just a few years prior to the news of child labor, slavery, and human trafficking in West Africa's cocoa plantations. In 1997 the Fairtrade Labeling Organizations International was established in order to incorporate all labeling initiatives into one worldwide standard and certification. By 1999, the Fairtrade labeling system was positioned perfectly to respond to the reports regarding the chocolate industry's supply chain. By 2001 the retail value of annual Fairtrade sales reached 30 million pounds and 290 million pounds by 2006 and 500 million pounds by

2007 (Fairtrade UK). In the 2007 annual report, Fairtrade Labeling Organizations International estimated that over 7.5 million producers and their families benefited from fair trade funded infrastructure, technical assistance, and community development projects (Fairtrade Labeling Organizations International 2007).

The Worried Well

From the early 1980s, food has become increasingly political, whereby the "worried well" pursue alternative food pathways and have revitalized regional gastronomic interest in order to fulfill the moral obligation of personal responsibilities within everyday lives. Along with the politicization of food became the morality of food, leading to the performance of food (Goodman et al. 2010).

Simplistic dichotomies of food categories were constructed, including "...fast and slow, reflexive and compulsive, fat and thin, and, hence, good and bad" (Guthman 2002). Fast food was bad, reflexive food good, and fat food best avoided in order to fulfill the role of the ethical consumer. However, predominantly the categorization of the "ethical consumer" has been typically filled by the white middle classed, "worried well," rich in both economic and cultural capital (Goodman 2009, p. 2). Higher-income consumers with the means have been afforded the luxury to opt out from mainstream food networks, in a move away from "placeless and faceless" foods (Goodman 2009, p. 3). The class and gender dimensions of slow and local food production highlight an ethical perspective reliant on the gendered division of labor, simplistic portrayals of the "good" and the "bad," and a return to cooperating with the "old enemies" of supermarkets and multinationals.

The risk being that when food is categorized into binary forms of "good" and "bad," power asymmetries between actors in the food production and consumption network becomes obscured from view. Guthman outlines the complicated ethical considerations not only in conventional food but also in ethical alternatives.

The tremendous amount of unpaid feminized labor involved in slow food and the service the fast food industry provides to women who work outside the home remain problematic and unresolved ethical considerations (Guthman 2002, pp. 55–56). Within the alternative model, consumers emerge as private and passive rather than being “eminently social, relational and active” (Goodman 2009, p. 17).

The crisis of confidence in mass-produced “placeless and faceless” foods provided a site of resistance against the mainstream food system; however, Goodman argues that alternative food networks have become commodified. These sites of resistance became mainstreamed, and in 2009 the UK multinationals held a 75 % share of sales of organic products (Goodman 2009, p. 22).

Advocating for further analysis into power asymmetries between actors in the value chain, Goodman argues that though short food pathways might expose the processes of production, they fail to expose the *social relations* underpinning processes of production (Goodman 2009, p. 22).

Summary

The distancing of people from sites of food production began prior to and throughout the Industrial Revolution and has irreversibly altered human relations with food. Ethical perspectives that have resulted in alternative food pathways fail to address the “unprecedented opulence” and the “remarkable deprivation, destitution, and oppression” in the modern world brought about through globalization. Alternative food pathways rely on voluntary personal moral performances that address consumption only in the narrow terms, rather than the broad sense of “wastefulness,” “squandering,” “absorbing,” or “using up or “expending.” Shorter “farm to table” food supply chains brought about through the performance of morality by the ethical consumer do not sufficiently address the economic vulnerabilities of the working class and the gendered division of labor assumed through slow food preparation or ease the burden of the double day for the world’s working women.

Essentially, current approaches to food ethics raise serious concerns about the extent to which voluntary ethical consumption approaches can confront the extreme socioeconomic and development inequalities that are “. . .the essential challenge facing the planet today” (Hobbs 2006, p. 165). Organized social movements, such as “fair trade” labeling, have moved to market-based approaches that, while promoting sustainability, do not interrogate the power asymmetries that have taken hold in the globalized era. These power asymmetries function within networks of global flows, rather than as linear chains of sequenced events (following Appadurai 1996).

Goodman et al. argue that the idea of an “ethical foodscape” can be added to the “ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes” that Appadurai argues make up global cultural flows. Conceptualizing food ethics within this network of flows provides a more systemic way of engaging critically with the “. . .processes, politics, spaces, and places of the praxis of ethical relationship embedded and produced in and through the provisioning of food” (Goodman et al. 2010).

Food ethics must address the economic, political, environmental, and physical vulnerabilities that result in limited life chances.

Cross-References

- [Corporate Social Responsibility and Food](#)
- [Food and Class](#)
- [Food Security and Rural Education](#)
- [Local and Regional Food Systems](#)
- [Systemic Ethics to Support Wellbeing](#)

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Food and Place

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Synonyms

Foodscapes; Landscape; Scape; Space

Introduction

Food and place are linked at a basic level, for food must be produced somewhere, and consumed in the same place, or circulated for consumption elsewhere. However, this basic process becomes entangled in judgments about whether it was produced in the appropriate location and manner, if it is being consumed in a culturally sanctioned way, and whether the “right” inhabitants of a place are consuming it. Furthermore, the contemporary world is organized around nation-states, which has given rise to national eating cultures. These national practices coexist with more global eating phenomena, be they long standing such as the widespread consumption of sugar or more recent fast food phenomena like McDonaldization.

The concept of space spans many disciplines and goes beyond a reference to a physical location. Space can be physical, subjective, or affective; it can refer to a geographical location or be a way to speak of mental and emotional landscapes. Economic systems change the way spaces

look and are used by humans. Abstract anonymous space can become a place, imbued with meaning for the user. Henri Lefebvre, one of the leading theorists of space, argues that every society or culture is generative of spatial practices, but that the practices themselves are generative of space. Space is both a launching pad for action and a framework in which to act. Scholars of space have argued that if reality consists of time and space, too much attention has gone to thinking about time. The main framing device to understand the world has been processual – what happened when, how it was affected by earlier events, and how it might impact the future. On the other hand, how human experience is spatialized and the ways in which spatial arrangements both enable and constrain people's lives have received comparatively less attention.

Space is an analytical category to think about the ways in which people organize, produce, and make sense of the foods around them. Space is an entry point to think about how flavors and regions come together, how people evaluate those connections, who benefits and who loses from the spatial arrangements under which foods are produced, and how capitalist practices generate spatial arrangements and their resulting inequities. Space is a lens with which to analyze a wide range of phenomena involving food and to think of the ways in which power operates through food networks. In particular, the spatialization of power and its effects opens up ways of thinking about ethics, justice, and food.

This entry touches on four aspects of space and its relationship to food. First is a discussion of national cuisines, which is followed by a consideration of political economy and how capitalism intersects with food and space. Third is the concept of *terroir*, which is used as an expression of how taste and place come together in a product. Finally, the entry ends with an analysis of food smells and how they encode places.

National Cuisines

The idea of a national cuisine is one way in which place and taste become entwined and projected

onto a geographical location. Scholars have debated whether national cuisines exist, if they are useful categories of analysis and how they come about. One of the key considerations in thinking about national cuisines is not only what they consist of but also what they leave out. The modern system of nation-states is predicated upon what Benedict Anderson called “Imagined Communities.” These are groups of people that, through various means, feel part of a larger whole that is deemed a country. A similar act of imagination is required to frame food practices as a national cuisine, and this process runs the risk of obscuring or neglecting the multiple foodways that already exist in a country. This privileging can be part of a process where one group, be it ethnic, class based, or otherwise, asserts control of the nation. Scholars need to carefully analyze the power differentials at play in the growth of national cuisines and how these are mapped onto the geographical space of the nation.

There are several works that trace how national cuisines come into being. Katarzyna Cwiertka (2006) looked at the case of Japan and shows that two big moments in the country's political history affected the growth of a national repertoire of food. Japan broke in the nineteenth century several centuries of relative seclusion from the rest of the world and embraced western foods. In particular, the state encouraged the consumption of beef and dairy in greater quantities because it was believed that Western bodies grew strong because of them. Military catering and World War II also had an impact on the national diet; prior to militarization, people mostly ate regional specialties, but the army brought people from all parts of the country together and supplied them with the same food. The distribution networks, as well as the tastes for certain foods that ensued, helped to solidify national eating practices that continued after the war ended. The case of Japan shows that what are considered national eating practices can go hand in hand with major historical developments such as militarism.

The nation-state can be involved in more subtle attempts at creating dispositions toward certain foods among its citizenry. The French

government, for example, has sponsored tastings designed to teach adults and children to appreciate the work of French food artisans, such as wines or chocolates, in contrast to the mass-produced goods that circulate in the global economy (Terrio 2000).

Scholars of globalization call attention to how national cuisines emerge in the space between global and local. Richard Wilk's (2006) work on Belize argues that pitting globalization against local eating practices is a misguided approach. Rather, eating practices are both local and global at the same time; it is in the space between an abstract globalized food culture and local practices that national eating cultures emerge. Watson's (2006) edited volume on how McDonald's is viewed across East Asia makes a similar point and argues that globalized foodways do not automatically displace local eating cultures. Rather, they are folded into local understandings about food, albeit this does not mean that there are no power differentials in how the encounter occurs.

One way in which national cuisines are codified is through cookbooks, and Arjun Appadurai's (1988) work on cookbooks in India illustrates some of the dynamics at play. Appadurai argues that the spread of cookbooks presupposes the existence of print media and a common language within the nation. In India, English acted as a lingua franca whereby cookbooks acted figuratively to present women of one group to another across ethnic lines and facilitated the exchange of flavor combinations and eating practices that contributed to an emerging sense of Indian cuisine.

Sidney Mintz (1997), on the other hand, has argued that a national cuisine is an artifice. It is constructed out of the foodways of people who live inside a country, but that these are regional and not national practices. Regional cuisines are the flavors not of a country, but of a place. The borders are not politically drawn, but are rather social borders of inclusion and exclusion. Mintz distinguishes between cuisines that are eaten regularly by the members of a group, and "haute cuisine," which he argues, is tied to the elites and can more easily be called upon to signify

a national practice. Nonetheless, a cuisine for him is something that people eat on a regular basis and are familiar with, and these practices are best understood as regional and not national.

Research in this area points to the many ways in which national eating cultures emerge and change over time. They are affected by globalizing forces dating back sometimes hundreds of years and involve a negotiation of class and ethnic lines. A central question is how the image of the nation can be mobilized so that people eat and come to like certain products and how foods can be used as markers of inside and outside status. Space, eating, and national cuisines can be sources of identity formation but conversely can place people outside the boundaries of the group. National spaces are a defining feature of the contemporary world, but that does not mean that national cuisines fit neatly into each political entity. Scholars who research these processes pay special attention to the power-laden processes that lead to food practices to be labeled as national, but keep in mind that these are contingent processes that need to be treated as such and not as natural categories of analysis.

Political Economy

In order to study how politico-economic arrangements are spatialized, scholars often look at commodity chains. The study of commodity chains highlights the ethical questions that emerge from processes of capitalist expansion and the food products carried with them. Sidney Mintz's (1985) work on the globalization of sugar is a classic study of how power and capitalism act through commodity chains. Mintz argues that humans have a biological craving for sweetness, but this alone does not explain why sugar became the sweetener of choice in the British colonial empire. If people simply like sweet, then any number of sweeteners could have emerged, but to explain the ascendancy of sugar, one needs to pay attention to the historical and power-laden processes that led to its prominence. He traces how sugar went from being a luxurious and rare spice enjoyed by the British upper classes to an

everyday item in the British diet, a proletarian hunger killer that powered the workers of the industrial revolution. However, the ascendancy of sugar in the British diet cannot be separated from how the Caribbean agricultural sector was remade into an export platform for Britain and the use of slave labor to power it. Widespread sugar consumption resulted in spatial arrangements that moved slave labor to the Caribbean and then sugar to Europe. It is in these movements that the workings of power become spatialized and ethical questions emerge of whether the spatial networks through which food is produced and moved are just and how they can be made more fair.

While there is much debate about what constitutes a national cuisine and its projection onto a territory, the modern state exerts a powerful influence in regulating the flow of food products in and out of its borders. The ways in which trade and food safety rules are set have powerful implications for the livelihoods of food producers around the world. The 1994 Uruguay round of trade talks that are now covered under the World Trade Organization put agricultural liberalization on the table. Nonetheless, subsidies and protection of domestic markets continue, especially among rich countries. These market distortions have had difficult implications for Southern farmers, who compete with subsidized production in the North and sometimes face restrictions for their own exports. For example, the trade in coffee beans from South to North favors the export of raw beans, which face few tariffs, but discourages the value-added step of roasting in the producing country by charging considerably higher tariffs. There is considerable debate among scholars and policy-makers whether further liberalization is a means to greater prosperity or if the flow of agricultural trade is best handled in other ways. Critics of liberalization charge that powerful multinational companies are the biggest beneficiaries of freer markets and that freer markets can result in the loss of local farmers. One alternative is the concept of food sovereignty, which argues that peoples have a right to define their own food systems in ways that are culturally and ecologically appropriate. They assert that

people, and not corporations, must come first in designing food policy, even if that means curtailing freer trade.

The growth of capitalism and the trade networks associated with it are powerful ways in which politico-economic relations are spatialized. This raises ethical questions about the fairness of these networks and how they can be made more just. Scholars of space argue that capitalism creates particular kinds of places that are amenable to capitalist accumulation. For example, large-scale monocultures are places where agricultural land is turned into a space where the first objective is accumulation. The point of producing and moving food is to accumulate capital. Meeting the needs of people to eat is a corollary to accumulation. Proponents of this system argue that this provides the incentive to grow food in more efficient ways. Critics, however, would like to see food production change so that people and their needs, not capital accumulation, are at the core of the system. This would entail a shift in how commodity chains are spatialized and who would stand to benefit and lose from those arrangements. The intersection of capitalist forces and food commodity chains provides fertile ground to examine how capitalist relations result in spatial practices and how just they are.

Terroir

One of the key concepts scholars have examined to understand the connection between food and place is *terroir*. The concept comes from the French, and it roughly translates as the taste of place. *Terroir* encapsulates the idea that products such as wine, cheese, meats, vegetables, and others are inextricably linked to the places where they were produced. For example, a wine tastes the way it does because it was grown on a specific location that has unique environmental qualities, and it was exposed to weather patterns and agricultural practices that only occurred during that season. The wine is reflective of the unique set of circumstances that came together in its production and therefore reflects the taste of place.

There are many terroirs that are considered unique and provide a distinct experience or that are historically associated with a product. The Napa Valley in the United States is recognized as one of the premier wine-growing regions of North America, and some products like Roquefort cheese can only be produced in geographically delimited regions. The connection between taste and place can provide a financial premium, and many terroirs are administered by law under Protected Designations of Origin (PDOs). These laws regulate naming rights and the provenance of the source ingredients. For instance, the technique to make sparkling wine has traveled far and wide, but for a wine to be called champagne, it must be made with champagne-grown grapes and produced in that region of France. Likewise, to call a cheese Parmigiano-Reggiano, the milk must be sourced from specific pastures, and the cheese must be produced according to strictly defined procedures.

Scholars such as Amy Trubek (2008) have contrasted the French model of terroir-based foods with an American emphasis on industrialization. She argues that food in the United States is produced primarily to be consistent and cheap, but not to be sensual and reminiscent of the place where it came from. She concludes that food localism and the “taste of place” must be further developed in the United States to counteract industrial food practices and shows an emerging sense of terroir in the Wisconsin cheese industry and Vermont maple syrup production.

Scholars argue about the political potential of connecting taste and place together. People supportive of these endeavors, like Elizabeth Barham (2002), argue that bringing taste and place together for the consumer may result in more enlightened eating practices. They criticize contemporary industrialized eating practices because they erase the connection between taste and place for the product. As commodity chains grow larger and more complicated, consumers only see the end product and have no access to the location and labor that went into making it. The commodity ends up being assessed and valued on its own terms, detached from its provenance. This state of affairs, they argue, is

detrimental for it often fosters industrialization, homogenization, and a moral distancing between consumers and producers. The corrective to this state of affairs is to allow place to shine through in the commodity, which allows consumers and producers to come closer together. If this connection is reestablished, the hope is that consumers will choose commodities that allow for moral economies to emerge that place greater emphasis on the livelihoods of producers and that celebrate diversity in taste. The taste of place is not a question of taste alone; taste and place become enmeshed in questions of social justice and morality.

The turn toward a moral food economy has sparked wide interest in agro-food studies, and Karl Polanyi has become a central interlocutor. Karl Polanyi argued that before the “great transformation,” economic activity was but one of many spheres that regulated the flow of social life; the economy, its rules and logics, was embedded in social relations, and economic activity was under a larger umbrella of moral codes that held society in place. For Polanyi, the great transformation signifies a shift where the economy seeks to detach from the other spheres of life and takes a life of its own – the economy disembeds from society. The logic of the economy is no longer to satisfy society’s needs, but rather to accumulate capital. Fulfilling human needs becomes a medium through which capitalist accumulation takes place, but it is not the *raison d’être* of economic activity. The changes brought about by this great transformation were both disconcerting and worrying to Polanyi, who argued that as the economy moves farther and farther away from the other spheres of social life, society will resist this tendency and attempt to re-embed it in social relations. Polanyi called this dynamic tension the “double movement.”

Scholars in agro-food studies have used the work of Polanyi to analyze the ways in which moral economies may emerge. One argument is that labels such as protected designations of origin (the legal framing of *terroir*) are examples of a double movement. The labels are examples of political activity that counteract market forces. Elizabeth Barham (2002) calls these labels

“values-based labels” and argues that they return a sense of process to food commodities, connect producers and consumers, and re-embed the economy in social relations. Other scholars have looked at fair trade networks and argued that they are a new kind of commodity chain where moral economies can emerge. The fair trade label brings consumer and producer together in an alternative economy that opposes the logics of capitalist food production with its emphasis on profits and lowering costs. The taste of a fair-traded product, be it coffee, bananas, etc., becomes inextricably linked to the moral economy in which it circulates. The hope is that consumers and producers will come together around a non-alienated food commodity that is also a force of change and sustainable development. In order to achieve that, they propose to keep the connection between food and its provenance, be that its unique *terroir* or the labor conditions under which it was produced, alive throughout the commodity’s cycle up to the consumer.

Critics of this approach, like Julie Guthman (2007), question whether it is wise to resolve these moral issues in the marketplace. To hope that consumers purchase the right kinds of products shifts responsibility away from government to those with money to spend. Instead of casting voluntary food standards as the seeds of political transformation, they argue that these labels and movements are best understood as market mechanisms. The labels are simply one more form of market differentiation and hardly pose a challenge to the overall structure of the neoliberal economy. The hope that these movements are an expression of a re-embedding of economic forces in social relations is misguided and could be politically debilitating in social policy is transferred to individual consumers in the hopes that they will make moral choices with their wallets. Instead, scholars working in this tradition would like to see a stronger role for states in implementing laws that allow these moral and fairer exchanges to take place. This is not to say that food and place should not be connected, but that this connection in and out if itself is not enough to resolve moral questions about the way food is produced, distributed, and framed for the consumer.

Questions of Smell

Food is appreciated in a multisensory way. Human taste buds are capable of detecting essential flavors like sweet, salty, or bitter, but a lot of the more nuanced sensations come from the interaction between the senses. Food is a tactile, visual, olfactory, auditory, and gustatory experience. Smell in particular plays a big role in the experience. Food aromas tie communities together and also evoke memories. Theorists of smell, such as David Howes, argue that there is a strong relationship between smell and memory, for smells are often linked to the moments when they were first perceived and can act as triggers for those memories later on. There are several studies of immigrant communities and how familiar food smells serve as a source of nostalgia. These studies examine how people experience the evocative power of food smells and how they use them strategically to create slices of home in their new surroundings. Lisa Law (2001) looked at Filipino domestic workers in Hong Kong. On Sundays they often congregated in open plazas and appropriated them with familiar cooking smells. These aromas encoded the space around them in ways that were explicitly different from the sensory expectations they faced throughout the week when working in the homes of local Hong Kongese.

Other work in this area has looked at how food smells can be a marker for class and race. Sometimes immigrant communities have found themselves on the receiving end of discrimination based on what are perceived as “offensive” smells by the host country. One study found that realtors in New York City advised Asian immigrants to scrub their houses before potential buyers arrived, by which they meant the erasure of smells such as shrimp paste or kimchi. In contrast, the realtors suggested that they bake apple pie or bread before showing the house to encode it with smells more typically associated with home in the United States. Associations between food smells and home are not just sentimental, but are also enmeshed in racial and class politics. The smell

of foods, and its associations to place, can be an entry point with which study questions of power, discrimination, and justice. Space as an analytical category looks at emotional or mental landscapes, and food smells are one way to study how these affective relations to food are spatialized. The evocative powers of smell allow it to encode places as familiar or foreign, to trigger nostalgia, and for people to deploy food smells strategically to mark the places around them.

Future Directions

Space is an emerging field in food studies. One of the key questions is how moral economies can emerge, and one suggestion has been to link food to its provenance in a tighter way. Thus, localized food practices, resurgence of farmers' markets, connecting consumers, and producers across boundaries through labels have been examined to see if they can contribute to a moral economy. Future directions on space research need to tackle the extent to which place can be an answer to the emergence of more just eating practices.

Summary

Place is a lens with which to think about how food production and consumption is spatialized, how those spatial arrangements come to be, and who benefits and loses from them. This entry looks at national cuisines, commodity chains, terroir, and sensorial markers as ways in which food and place become intertwined and the ethical questions that arise out of it.

Cross-References

- [Culinary Tourism](#)
- [Ethnicity, Ethnic Identity, and Food](#)
- [Geographical Indications, Food, and Culture](#)

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Food and Poverty in High Income Countries

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Synonyms

Food poverty; Taste of necessity; Food insecurity

Introduction

Household income is the most important factor influencing the food that individuals and families eat. Income has both *direct* and *indirect* effects on the food people eat. Income affects eating

practices directly either by putting economic limits on what a household can afford to eat or by allowing the ease and freedom to eat whatever is desired. It affects eating practices indirectly because of its influence on our tastes, preferences, and desires, which appear to be individual but are shaped by class positions shared with others. This entry considers the impact of income, and especially inadequate income, on food practices in rich, developed countries and the particular case of food insecurity, where financial resources are inadequate for a safe, healthy diet that meets personal, cultural, and religious preferences. The entry also introduces key theoretical concepts from Pierre Bourdieu to help explain the “logic” of everyday food practices and to assist in reflexive practice in scholarship, health promotion, and public policy making.

The Impact of Household Income on Food Practices

For households that live in poverty, with not enough money for food, food is a constant source of stress and anxiety. Not having enough money for food, or worrying about not having enough, can alter the quality and quantity of food that household members are able to consume. In many English-speaking wealthy countries, such as the United States, Canada, Australia, and New Zealand, this condition is known as individual and household food insecurity. In the United Kingdom, it is also called food poverty. In the most severe cases of food insecurity, individuals may skip meals entirely, resulting in outright hunger. Food insecurity is a significant public health concern, associated with a higher risk of nutrient deficiencies and a range of health problems, including depression, diabetes, and heart disease. It is also in direct contravention of the basic human right to food for all, which is protected in several international agreements, including the *International Declaration of Human Rights* (1948); the *International Covenant on Economic, Social and Cultural Rights* (1966); and the *International Convention on the Rights of the Child* (1989). In wealthy countries,

the right to food is predicated on having sufficient income to purchase food in the marketplace, the usual way of obtaining food in these countries. Consequently, the right to food means that state governments have a responsibility to ensure income security policies, including adequate wages and a social safety net, that allow households to purchase adequate, safe, culturally appropriate, and nutritious food to meet daily needs.

Along with important direct effects on what people eat, income also has indirect effects, mediated through social class (Beagan et al. 2014). Indirect effects of income on food practices operate through preferences shaped by class position, that is, through income, education, and the movement between class positions. For example, a desire to experiment and try new cuisines, foods, and recipes is associated with those who have higher levels of education and sufficient income to be able to do so. Those living on low incomes cannot afford to experiment with new foods or recipes; there is no room in the budget for any food to go to waste. Moreover, there may be little desire to try novel foods or cuisines, on the basis that such experimentation is “not for the likes of us,” or not something that “people like us” do. This can be a process of “making a virtue of necessity,” where conditions of material scarcity create a personal disposition that values what is necessary, such as frugality or the loyalty of sticking with the tried-and-true. For example, low-income households may buy only branded products, favoring more expensive products over similar “no-name” ones. This may be derived from a condition of necessity, because the branded product has a known and consistent taste that family members will be sure to eat, rather than the uncertain and unpredictable taste of a comparable “no-name” product. Consumption of highly marketed branded food products may also be a source of pride, a means of displaying loyalty, and offering a small, symbolic way to belong in our consumer society and be “normal,” doing what others do. It may also be a treat, offering an opportunity to dissociate oneself momentarily from ever-present poverty and deprivation.

In other words, the food practices of those living in poverty do not conform to a purely economic logic, at the same time that financial constraints are central by limiting the scope of purchases within economic possibility and by shaping taste and preferences through class dispositions. This entry introduces some key concepts from sociologist Pierre Bourdieu, whose book, *Distinction*, is one of the most important sociological texts of the twentieth century and is especially useful in understanding the relationship between income, class, and food practices. Sociological theory can be especially helpful in understanding the interaction of social or collective factors and individual factors influencing what people eat. In other words, it helps develop an understanding of why people located within particular social positions (defined, e.g., by class, class trajectory, gender, and racialization) eat the way they do.

Bourdieu's key theoretical concepts include *habitus*, *practice*, *forms of capital*, *the logic of practice*, and *distance from necessity*. Understanding that all practice, including food and eating practices, has a logic that is based in the habitus and derived from a particular social position, has ethical implications for those who study, wish to understand, and perhaps change the eating practices of those in (especially lower) class positions that are different than their own. The implications of this will be drawn out in the conclusion.

Theorizing Food Practices with Bourdieu

In his study of taste in France, *Distinction: A Social Critique of the Judgement of Taste*, Bourdieu (1984) found distinct patterns of lifestyle, manifested in tastes in art, music, food, clothing, furniture, and so on. While the particulars of Bourdieu's analysis of 1960s France are not generalizable, many researchers have found his conceptual tools can be usefully applied to their particular empirical contexts to help us understand food practices and why people eat what they do, especially in relation to class (Beagan et al. 2014). In Bourdieu's

conceptualization, class has two main dimensions: economic capital (i.e., income and wealth) and cultural capital (such as level of education as well as other forms of knowledge). So, for example, the self-made successful business person, with large amounts of economic capital but less cultural capital, occupies a different social space and tends to have different tastes and lifestyle than, for example, a humanities professor, who has comparatively less economic capital but considerably more cultural capital. A schoolteacher may have similar economic capital as a tradesperson, but they will tend to have different tastes and lifestyles because of dissimilar amounts of cultural capital.

A third dimension of class, which also affects taste, is the trajectory through social space (i.e., upward or downward social mobility or a stable social position). Thus, someone moving (or with ambitions to move) from a lower to higher social space may leave behind the tastes of the lower class and take on those of the higher class. Those moving downward in social space tend to be conservative and traditional in their tastes. Bourdieu found these associations between social trajectory and taste in whole groups, such as small business owners and farmers, who were slowly losing their historical status in French society.

Habitus

Why do people who occupy similar positions in social space tend to have similar tastes and thus similar lifestyles and practices? Bourdieu developed a theoretical concept, the *habitus*, to explain why. Bourdieu used the concept of the habitus to overcome dichotomies that haunt social theory, such as structure/agency and freedom/necessity. The habitus is the "sedimentation" or embodiment of social structures such as class, gender, and ethnicity within the individual. It is a set of *dispositions*, internal to the individual, which reflects external social structures and shapes how the individual perceives the world and acts in it. Although the social structures embodied in the habitus do not *determine* behavior, individuals are *predisposed* to act in accordance with the social structures that have shaped them, because,

in effect, they carry those social structures within them. The habitus also shapes one's expectations of the future. Once learned, the dispositions of the habitus become "second nature," difficult to bring to consciousness and not easily changed. This is especially true of aspects of the habitus learned in childhood, such as gender identity.

Forms of Capital, Practice, and Class

Habitus has an important influence on practice, or our everyday activities, but it is not the only one. Practice is also influenced by the interaction between the habitus and different forms of capital. Bourdieu identifies four primary forms of capital: economic (money and wealth), cultural (formal and informal education), social (relationships), and symbolic (honor, prestige, or recognition). He understands economic capital as the most important form but shows how these different forms of capital can be exchanged. Social class, in Bourdieu's terms, reflects the total volume of capital as well as the composition of the capital (particularly economic and cultural), and social class trajectory (i.e., upward or downward movement between different classes).

Logic of Practice and Distance from Necessity

As Bourdieu (1984) explains, all practice has a logic, even practice that appears to others to be "illogical." The logic of practice comes from social location, including class, habitus, class trajectory, and the different types and amounts of capital available. In his study of taste in France, Bourdieu found fine distinctions in the tastes of those in different social spaces; however, he also found two main opposing dispositions toward consumption, distinguished by "distance from necessity." The consumption patterns of the working class and the poor are characterized by the "tastes of necessity," while the consumption patterns of the middle and upper classes are characterized by the "tastes of luxury (or freedom)." The taste of necessity is a "forced choice" of being resigned to what is inevitable, produced by material conditions of low income

that rule out other options. In contrast, the taste of luxury is so bound up in freedom of choice that it is difficult to imagine that others are much more constrained in their choices. The taste of luxury is derived not just from income, but also the cultural dispositions that come from being in the social space that higher levels of income allow. Thus, for example, those who have lived in poverty who move into significantly better economic circumstances may carry with them the cultural dispositions that incline them toward the taste of necessity and continue their frugal lifestyle despite their improved finances.

In Bourdieu's study in France, the taste of necessity in food (for those with little economic or cultural capital) generally led to the consumption of salty, fatty, heavy, strong, simmered, cheap, and nourishing food. Those with significant economic and cultural capital had food tastes in opposition to the taste of necessity, tending toward the light, refined, and delicate. Bourdieu also found differences between those who had relatively different amounts of cultural and economic capital and those who had relatively more cultural capital (i.e., education) tending toward healthier and more exotic food, especially low-cost exotic food such as that found at "hole in the wall" family-owned restaurants serving "ethnic" food. Cooking practices also differed among those with different amounts of capital and different relative amounts of economic and cultural capital.

Taste in food also depended on how different classes value the body and the effects of food on the body. While the working classes were more interested in bodily strength and thus tend to eat food that was cheap and filling, the professions were more interested in the aesthetic aspects of the body and thus tend to eat food that was healthy, light, and not fattening. Bourdieu found that the working class meal was characterized by abundance, particularly of "elastic" and inexpensive dishes and foods, such as soups, pasta, or potatoes. The "impression of abundance" was especially true for special occasions. The rituals of the meal (preparation, serving, eating, cleaning up) were marked by strong differences of social status, based on age and gender. Strict sequencing

of the meal was ignored, and a freedom, which from a bourgeois perspective would be seen as disorder or slovenliness, prevailed. This freedom arose from a sense that eating is a form of compensation for the rest of life, where controls, constraints, restrictions, and necessity prevail, and that these should not be imposed on food and eating, the heart of domestic life. In contrast, the meals of the bourgeoisie, or middle class, were conducted as a social ceremony, concerned with form and a strict observance of sequence. Rigorous rules surround the meal, as with all other aspects of everyday life, an expression of a habitus of order and propriety.

Bourdieu maintains that this basic opposition between substance (food as material reality, sustaining the body and giving strength) and form (food as self-discipline to an aesthetic ideal) represents two antagonistic worldviews, divided by distance from necessity, which, as a function of the habitus, affect all aspects of taste. Bourdieu argues that the distance from necessity divides us all, with no neutral point of view. What appears to be messy, undisciplined, and careless to some is straightforward, down-to-earth, and unpretentious to others. And what is refined and orderly to some is frivolous and pretentious, “not for the likes of us” to others.

Bourdieu’s work demonstrates that there is a “logic” to everyday practices, such as eating, which goes far beyond the practice or behavior itself but is instead embedded in a habitus which systematically reflects a set of social structures, not least of which is class. Everyday practices are generated from a system of perception and appreciation and form a particular lifestyle that is meaningful in relation to the social and material conditions in which the habitus was formed. Everyday practices follow a logic which is largely outside our consciousness and therefore difficult to describe in words. What people do in their everyday lives has more significance than they know or can say.

Food Practices in the Context of Food Insecurity

As household income declines, financial considerations become more and more important in the

decisions regarding which foods are purchased and consumed, with the emphasis moving toward low-cost, filling foods that will stave off hunger. These decisions and choices are always weighed with other considerations, including personal preferences and tastes, health and nutrition, food quality and freshness, cultural and religious imperatives, convenience, cooking skills, transportation, and available storage and cooking equipment. However, as food insecurity grows, the cost of the food becomes the driving force in decision-making (Dachner et al. 2010; Power 2005). The person most responsible for food work makes most of these decisions and choices. Despite some overall progress in engaging men in housework, women are still primarily responsible for food work, especially the invisible aspects, such as menu planning and shopping lists, which involve the weighing of the sorts of considerations described above (Beagan et al. 2014; DeVault 1991).

For food-insecure households, the stress of living in poverty and not having enough money for food can be overwhelming, especially if there are children involved. There is little-to-no relief in managing inadequate food and financial resources. The relentless nature of trying to “make do” and “make ends meet” requires significant amounts of time, work, and energy. It is not surprising that food insecurity is associated with much higher rates of depression than for the food secure population. With the exception of households on food stamps in the United States, who have some money (in the form of food stamps) that can only be spent on food, most low-income households can use money allocated for the food budget for other priorities, such as when emergencies arise or for months when there are unusually high expenses, such as when heating or cooling costs are higher than normal. In terms of budgeting, the first priority is keeping a roof over one’s head, by paying the mortgage or the rent. This is usually a fixed expense and a bill that must be paid on a regular basis. In food-insecure households, after housing costs are paid, there is usually little-to-no money left over. Money for other services and items, such as food, utilities, phone, childcare, clothing, and

transportation, is juggled in a complex strategy to maximize benefit and avoid losing access to necessary services. Part of the elasticity of the food budget derives from the multiplicity of strategies that can be used to attain food and stretch food resources, or the last-ditch strategy of going hungry (Power 2005).

Food insecurity is a managed process, experienced on a continuum, from mild or marginal to moderate to severe. In households where there is marginal food insecurity, the person responsible for food provisioning (usually a woman in heterosexual households or in households with children) worries about being able to buy adequate amounts of food. In moderately food-insecure households, there are changes in the quality and quantities of food eaten, for example, substituting cheap and filling food for the food that would be normally eaten. Finally, in severely food-insecure households, household members literally go hungry, skipping meals or going for a day or more without food (Tarasuk et al. 2013).

In households with children, the most severe form of food insecurity is characterized by children going hungry. Mothers will do almost anything to keep their children from being hungry, including going hungry themselves, sending their kids to relatives, shoplifting, prostitution, or “doing favors” for the landlord in exchange for rent reductions or groceries. In other words, not all household members experience food insecurity in the same way; the woman in the household normally bears the brunt of the strategic management of food insecurity. In households where there is intimate partner violence against women, food may act as a trigger. The woman will then prioritize the food wishes of her partner or husband, in the hope of avoiding violence. This may adversely affect her own food security and possibly her children’s. Intimate partner violence may also include financial abuse, with the man controlling all household finances and leaving the woman unable to protect herself or her children from food insecurity and hunger. Abusive partners may also use food to bribe their way back into relationships.

As food insecurity deepens, households change the type and the number of strategies

used to feed themselves. Some strategies involve freeing up money for food or increasing the supply of money. These include working, perhaps in “under-the-table” jobs; giving up services, such as cable TV; selling possessions; delaying bill payments; or borrowing money from family or friends. Some strategies can only be used infrequently (e.g., a possession can only be sold once) or have a limited lifespan (e.g., one quickly runs out of friends unless loans are repaid). Strategies to acquire food include purchasing food on credit; borrowing food from friends or relatives; eating at relatives’ homes or sending the kids there to eat; sending kids to school meal programs; and obtaining food from nonconventional sources, such as food banks, dumpsters, soup kitchens, and other community food programs.

Another set of strategies revolves around the food itself, during the planning, shopping, and cooking stages. These strategies include careful planning, looking at flyers, clipping coupons, making lists, budgeting, making food from scratch, planning to buy only what is essential or most filling, buying grocery store gift cards to save the money to buy groceries at a later date, and shopping only at discount grocery stores or greengrocers. During shopping trips, women also use multiple strategies to conserve money. These may include transportation considerations, such as coordinating a trip with someone with a car, walking one or both ways, or only buying foods that can be transported easily. Other strategies include not taking the kids on the shopping trip, sticking to a shopping list, adding up the cost as one shops, only buying foods and brands that are known and liked by the family, buying foods that provide the most value for money, buying foods on sale, buying cheaper cuts of meat, and buying in bulk when appropriate or buying small quantities to avoid waste. And finally when cooking, women will alter food preparation to “stretch” a meal (e.g., adding extra rice or potatoes to soup or stew); cook low-cost and filling meals of minimal ingredients; use canned foods; serve the higher-quality foods for the man or the children and eat less expensive foods herself; and cut portion sizes or skip a meal while others in the household eat. Most of this extra work to avoid

hunger in the household is borne by women. Much of it is invisible, requiring creativity, energy, and skill. For low-income households with no access to a vehicle, there is additional physical labor to acquire food, adding to the physical, mental, and emotional stress and exhaustion.

In the context of food insecurity, one strategy that some households use is to turn to food charity, particularly food banks or food pantries. These charitable organizations offer limited amounts of food to those who qualify for their services, usually for a limited number of times a year. While food banks and food pantries allow some families to be somewhat less hungry, they have significant limitations. These include an insufficient supply of food to meet the demand; inability to meet the food preferences, religious restrictions, or health needs of clients; the nutritional inadequacy of food packets; the instability and irregularity of volunteer labor and donations of food and money; inaccessibility of food banks and their services; the inefficiencies associated with connecting hungry people with donated food and volunteer labor; and lastly, but perhaps most importantly, the indignity of charity (Poppendieck 1998). Despite the best intentions of staff and volunteers, most people find that receiving charity is demeaning and dehumanizing, provoking feelings of shame and humiliation. Food charity is a blunt reminder to those who use the service that they are not part of mainstream society, contributing to a pervasive sense of marginalization. For these reasons, and perhaps others, most food-insecure households do not use food banks (Power 2014).

Ethical Considerations

Food insecurity raises two different ethical issues. The first is related to social justice and the ethical implications of hunger, poverty, and food insecurity in rich, industrialized countries. The second is a reflexive one and the ethical issues of researchers, academics, and students studying and trying to understand the “logic of practice” of groups of people who may occupy

quite different social positions. Related to this are the ethical issues of health practitioners who want to change the eating habits of low-income people and public policy makers who are responsible for creating public policy to promote the health of all citizens.

Food insecurity has become a significant public health concern in many rich, industrialized countries. In the United States in 2011, almost 15 % of households experienced some level of food insecurity, while over 12 % of Canadian households were affected (Tarasuk et al. 2013). Both countries use the same questionnaire to assess household food security status, but the US approach is more restrictive in categorizing households as food insecure. This means that many more US households would be food insecure using the Canadian approach and amounts to millions and millions of people in two of the richest countries in the world who suffer food insecurity as a result of poverty and the subsequent health consequences.

This situation is incongruent with principles of social justice and with the obligations and commitments set out under international agreements, including the *Universal Declaration of Human Rights (UDHR)* (1948); the *International Covenant on Economic, Social and Cultural Rights (ICESCR)* (1966); and the *International Convention on the Rights of the Child (ICRC)* (1989). Notably, the United States has refused to sign the ICESCR and the ICRC. But it has signed the UDHR, which specifies:

Everyone has the right to a standard of living adequate for the health and well, being of himself [sic] and his [sic] family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his [sic] control. (United Nations 1948)

While not legally binding, the UDHR sets out a set of principles to which nations, at their best, aspire. Recently, the United Nations Special Rapporteur on the Right to Food has highlighted the growing number of national governments around the world that have implemented frameworks to progressively realize the right to food as a legal entitlement, not a charitable handout

(De Schutter 2013). In wealthy countries, this means the assurance of an adequate income, derived from either employment or social supports, so that everyone can participate in normal channels of food acquisition (De Schutter 2013). Given the unprecedented wealth of the world's richest countries, growing income inequality, and the structural conditions that create the poverty that leads to food insecurity, it is time to reconsider our obligations to each other and to ensure the conditions in which all can thrive and contribute their best.

The other key ethical implication of understanding the impact of income on food practices is a reflexive one. In other words, those interested in the food and eating practices of those living on low incomes – whether student, researcher, health promoter, or policy maker – must understand that if they are occupying a different class position, the “logic” of their food practices will be different than the logic of low-income food practices. This is not simply a matter of available economic resources. For example, while postsecondary students may be “poor” based on their income, the logic of their food practices will also be impacted by the habitus made possible by higher education, the sense of possibility that enabled them to get to a higher education institution and that unfolds with the achievement of a postsecondary diploma, and the sense of inclusion and doing something “normal” and valuable by being a student. For health promoters, the ethical responsibility is to understand that the food practices of low-income households are unlikely to change significantly without additional financial resources and to advocate on behalf of low-income clients for additional resources (see, e.g., Ontario College of Family Physicians 2013). The ethical responsibility of researchers is to research enough about participants to understand the logic of their practices and then to represent the research results in ways that are true to that understanding, allowing the reader to come to a similar conclusion.

Summary

Household income affects the logic of food practices in both direct and indirect ways, through the

habitus and the resources available for purchasing food. In conditions of food insecurity, when income is inadequate to meet dietary needs and preferences, the cost of food becomes increasingly important in decision-making, overshadowing other important considerations, particularly health. Those in food-insecure households who are primarily responsible for food work try to manage food insecurity with numerous strategies that take considerable time, energy, skills, and creativity. Their creativeness and skill cannot dispel the anxiety and stress that accompanies food insecurity. The challenges they face demand understanding and respect. The existence of millions of food-insecure households in the richest countries of the world is incongruent with international standards and principles of social justice.

Cross-References

- ▶ [Child Nutrition Guidelines and Gender](#)
- ▶ [Eating and Nutrition](#)
- ▶ [Eating, Feeding and the Human Life Cycle](#)
- ▶ [Emergency Food System: Soup Kitchens and Food Pantries](#)
- ▶ [Ethics of Dietitians](#)
- ▶ [Feeding Children](#)
- ▶ [Food and Choice](#)
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- ▶ [Food, Class Identity, and Gender](#)
- ▶ [Human Rights and Food](#)
- ▶ [Poverty and Basic Needs](#)
- ▶ [Right to Food in International Law](#)

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Food and the Avant-Garde

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Synonyms

Food and art; Food and performance art; Futurism and food; Historical avant-garde and ideology; Modernist art; Modernist cuisine

Introduction

Defining the avant-garde is an ongoing process in art and literary criticism and changes depending on the particular historical period and cultural sphere discussed. For the sake of this entry, the term refers to a collection of modernist artists and artistic movements who explore new frontiers,

react against previous conventions and traditions, and engage in experimental work. The work of avant-garde artists and writers often responds to existing social, political, or aesthetic practices, making it particularly relevant to a study of ethics. In the Theory of the Avant-Garde, Peter Bürger argued that the term was originally used to describe a combination of artistic goals and a sociopolitical agenda (Bürger 1984). More specifically, some of the ideas associated with the avant-garde that apply to a study of food include a wish to reintegrate art into the practice of everyday life, an interest and a prioritizing of the senses beyond sight and sound, a valuing process over product and nonrepresentational art over a fixed subject, and a fascination with language, the body, and consumption.

The historical avant-garde's power for social reform derived largely from its anti-institutional stance and its ability to reexamine and call into question products and forms that were taken for granted and have become routine. But as these artists were accepted into the art institution themselves (shown in museums and studied in academia), their work was stripped of that power. This particular critic of the historical avant-garde is significant in the context of food work, since the ephemeral nature of most of this artwork serves to protect it to a certain extent against institutionalization.

This entry refers to two types of interaction between food and the avant-garde: artists who use food as a medium and employ it as way of interrogating traditional art practices and institutions as well as other social and cultural questions and chefs who create culinary work that can qualify as art, stretching our understanding of what is art and expanding the culinary field into new realms of interaction between chef and audience (essentially creating avant-garde work in the culinary field).

The entry begins with several examples of artists who can be directly linked to avant-garde related movements in some way. These artists share some of the central tenets of the historical avant-garde: the wish to step outside the art establishment, call into question traditional practices and institutions, promote art that is integrated into

everyday life and materials, and promote an ideological agenda, questioning social or cultural tropes. The examples progress in a rough chronological order and focus on artists who engage food and food practices directly, as a medium, not only as a subject for visual art or poetry. The final section of the entry expands on this focus and presents the work of several modernist chefs. Exploring their work in the context of avant-garde art and as an extension of the artwork described below offers new insights into some of the problems associated with the historical avant-garde.

The Futurists

Futurism, an art movement of the historical avant-garde, produced perhaps the most well-known, influential, and food-centered work. In the second wave of the movement (from 1930), the Futurists devoted serious attention to culinary events, opened the Holy Palate restaurant in Turin (1931), and published *The Futurist Cookbook* (1932). Filippo Tommaso Marinetti published the first Futurist Manifesto in 1909 and strove, with his fellow Italian Futurists, to “liberate language, art and life from tradition and convention” (Chamberlain 1989, p. 8). The Futurists saw art and everyday life as inseparable, and so everyday materials, like food and recipes, were a natural progression for their work. Using culinary devices and materials allowed the Futurists to engage and comment on traditional Western art practices and values, such as questioning the traditional hierarchy of the senses that prioritizes sight and sound, the concept of an art object as everlasting, and the injunction that art must never be utilitarian and must be confined to the museum and gallery space.

The Futurist Cookbook encourages Italians to abandon traditional culinary practices (pasta in particular) in favor of a new and “modern” culinary practice. It includes descriptions of several futurist banquets, theoretical thoughts on futurist perception of cooking and eating, and numerous recipes (called “formulas”) contributed by different Futurist artists. It provides a documentation of

several performative and experimental dinners, but it is also an art object in itself. By taking a familiar everyday object such as a cookbook and appropriating it to deliver the futurist artistic message, Marinetti is combining several of the futurist ideals: not only the interest in everyday life as material for art but also the hybridization of different genres, the importance of the chemical senses (taste and smell), the body as a present and participant in the artwork, and the interest in technology, scientific discovery, and innovation—all of which play a part in the recipes and banquets the Futurists staged.

The Futurists had a very strong, unabashed, and political and ideological message, and *The Futurist Cookbook* expresses some fascist ideals, mostly exemplifying strong nationalist tendencies and a chauvinistic approach, advocating Italian patriotism and condemning bourgeois habits and lifestyle. The book is a poetic text that expresses both an artistic agenda and an ethical one: the Futurists wished to change the Italian persona, influencing and reshaping both Italians’ minds and their bodies. However, the cookbook remains first and foremost an artistic creation, its irony mostly apparent in the selection of clearly inedible dishes scattered through the text, like *The Excited Pig*: “A whole salami, skinned, is served upright on a dish containing some very hot black coffee mixed with a good deal of eau de Cologne” (Fillia, in Marinetti 1989, p. 144). This and other inedible recipes serve as reminders that this “cookbook” is in fact an art object and not a kitchen manual. They force the reader to pause and consider each recipe, not take them for granted. They call into question the very nature of recipes and instructions and emphasize the need for vigilance and independent thinking (for more on the Futurist banquets see Delville, 2008).

Fluxus

This multidisciplinary, international movement originated in the 1950s in Europe and the United States and continues to some degree to this day. One of the most influential forces at its inception in the United States was experimental musician

John Cage, whose class on musical composition in New York in the late 1950s inspired some of the central techniques later used by Fluxus artists, like George Brecht's Event Score, chance-generated poems by Jackson Mac Low, and Allen Kaprow's Happenings, describing his multimedia theatrical events (Higgins 2002, pp. 46–48). Two central elements in Fluxus artists' work were the performance event and the Flux kit. Both were based on simple, everyday actions and objects and highlight the notion of experience. Rejecting representational art and focusing on primary experience, Fluxus's work defies fixed definitions; its central ideology is the rejection of any assigned, permanent meaning (Higgins 2002, pp. 58–59). Thus food, as a temporal medium that offers a wide range of opportunities for social interaction and immediate experience, appears often in Fluxus artists' work. These artists include Alison Knowles (Make a Salad, 1962; Make a Soup, 1962; and Identical Lunch, 1967–1973), George Maciunas (Flux banquets, 1967–1978; One Year, 1973), Ben Vautier (Flux Mystery Food, 1963 and 1966–1967), and Daniel Spoerri (Twenty-nine Variations on a Meal, 1964), among others.

Daniel Spoerri's early Trap Paintings literally captured remains of meals, gluing to the table's surface, empty dishes, cutlery, and leftovers and then flipping the surface to hang vertically. These projects, created from 1960 and on, were based on an individual meal, a collaboration with other artists, or the result of banquets and dinners Spoerri staged at his Spoerri Restaurant (1968), the Eat Art Gallery (1970), and other venues around the world (Novero 2010). The Trap Paintings were essentially collages created by chance actions during a meal. Preserving and displaying these remains reflect Spoerri's interest in everyday materials and in their perishable nature, reflecting similar interests of earlier avant-garde artists. Spoerri's themed banquets and the idea of creating a working restaurant that, in addition to serving traditional German fare, also hosted guest artists as chefs were very much in the spirit of the Futurists, bringing his edible work into a real-world context. Some of Spoerri's themed meals revolved around

regional/national dishes no longer common and recognized as such in different countries, problematizing the clear definitions of a national, centralized cuisine. In this, he diverges from the Futurists and their strong nationalist agenda, questioning rather than trying to influence a national diet.

This approach to political ideology is characteristic of many more recent avant-garde artists, who prefer to call into question or problematize existing sociopolitical ideologies, rather than a prescribe one.

Some Fluxus artists' work involved a reframing of everyday acts of the artists themselves as art events, like **Ben Vautier's** Flux Mystery Food, which entailed purchasing unlabeled cans of identical size and eating whatever was inside them (1963). A later variation included replacing the labels with ones that read Flux Mystery Food (1967). Another example is **Alison Knowles's** Identical Lunch (1967–1973), in which the artist consumed the exact same lunch every day, over a period of several years, at the same time and at the same place: tuna sandwich on whole-wheat bread with soup or buttermilk at Riss restaurant in Chelsea (Higgins 2002; Novero 2010).

Even though Fluxus artists are obviously interested in taste and smell, many of these works focus on a shared, communal experience, on language and representation, and on classification and organization rather than on gastronomy (Novero 2010). Unlike the Futurists' interest in creating innovative work on the plate, most Fluxus artists explore eating rituals and mine food for its ability to call into question the Western hierarchy of the senses and present art as a total experience, free of fixed definitions. It highlights these artists' interest in creating multisensory experiences that frame "pieces" of everyday life and draw our attention to them, allowing that everything is material for art. This inversion of accepted Western cultural hierarchies and questioning of common perceptions extends beyond the art world into other social and cultural realms of experience. Subverting the art institution implies the suspect nature of other institutions. By calling into question

common perceptions regarding the value system and hierarchies within the art system, these artists encourage the audience to question the status of Western culture, the division of gender roles, or other sociopolitical classifications.

Carolee Schneemann was connected with several Fluxus artists and events, and her work in live performance was very influential on a variety of artists (most notably feminist work). Schneemann created *Meat Joy* in 1964 as “a celebration of flesh as material” (<http://www.caroleeschneemann.com/meatjoy.html>, viewed December 27, 2012). The performance included raw fish, chicken, and sausages, among other materials, and centered on the movement of the performers’ naked bodies in space and the improvised interactions among them and with the materials surrounding them. Schneemann’s work explores ideas regarding sexual expression, the body, feminism, and traditional art practices and history. Her work is significant in relation to historical avant-garde work that was a distinctly white, male provenance, using women’s bodies as a vehicle, but excluding them (as well as non-Western artists) from art making. Following Schneemann, several female artists employed food and cooking as a way to introduce women’s voices into avant-garde art practice.

Martha Rosler’s early work with video (like *Semiotics of the Kitchen*, 1974) and mail art (*A Budding Gourmet* and *Tijuana Maid* – both “novels” – were originally sent out in installments on postcards and included recipes in addition to text) continues the avant-garde’s interest in new and undervalued forms, art in everyday life and materials, and strong ideological context. Rosler’s early work had a strong feminist message and explored labor rights and socioeconomic hierarchies.

Karen Finley is another well-known artist who explores topics at the intersection of language, the body and female sexuality, and everyday life. She used food and food imagery in her work on numerous occasions, perhaps most notoriously by smearing her upper body with chocolate (standing in for excrement) in her piece *We Keep Our Victims Ready* (1988). Finley, who was influenced by artists like Schneemann, uses

similar techniques of taking food out of its traditional context (“wearing” it rather than eating it), as one of the devices to deliver a strong political and ideological message. Like other artists mentioned here, Finley chose to perform her art in nontraditional and undervalued venues (nightclubs instead of art galleries) and used everyday materials in her work to emphasize her anti-art establishment attitude and to call into question traditional hierarchies in both the art world and the real world.

Food as material for art allows artists to follow in the footsteps of the avant-garde commenting both on earlier art movements and art institutions and on social-cultural practices. **Jana Sterbak’s** *Vanitas: Flesh Dress for an Albino Anorectic* (1987), in which a model wears the 50 lbs dress made out of raw steak (which later was preserved and dried), comments on earlier feminist work (like Schneemann’s) while also rethinking current social and cultural norms and practices, reflecting on both the meat industry and the fashion industry. **Janine Antoni** created her sculptures *Chocolate Gnaw* (1992) and *Lard Gnaw* (1992) by using her mouth as a carving tool. She displayed both the enormous, gnawed blocks and the leftover, chewed pieces she removed from them and shaped into lipsticks and chocolate hearts (Trippi 1998, pp. 142–144). In these pieces, Antoni explores the idea of a traditional carved sculpture, replacing both the material and the tools, and comments on minimalist artwork, while also investigating the idea of consumption in modern society.

An example of an artist-driven restaurant, very different in feel from the Futurist Holy Palate, is **Gordon Matta-Clark’s** *FOOD*, which opened in SoHo, New York in 1971. The restaurant was a group enterprise, designed to offer artists living in the area at the time an affordable place to eat, a place to work, and a space to display their art. It was in-line with Matta-Clark’s other food-related work at the time, mostly concerned with experimenting with cooking tools and techniques like his *Fried Photographs* and *Incendiary Wafers* (1970–1971). The restaurant was created by Matta-Clark with Caroline Goodden, Tina Girouard, Suzanne Harris, and Rachel Lew with

an original investment by Goodden. FOOD can be seen as a “political, economic and artistic project” evolving as a critic of the art world in the early 1970s (Morris 1999, p. 21). In addition to the regular, eclectic menu, the restaurant hosted special artist-cooked, themed dinners, like Matta-Clark’s Bone Meal, which included “a variety of bone-based dishes” like aspic and oxtail soup. At the end of the meal, the bones were washed, drilled through, and strung as necklaces for the diners to wear (Morris 1999, p. 29). Several other projects were created at the restaurant or were inspired by it, like artist **Robert Kushner’s** fashion show performance “Robert Kushner and Friends Eat Their Clothes” (1973). Kushner, who worked at Food at the time, acquired much of the raw materials for the “cloths” the performers wore through the restaurant. Goodden reflected that the restaurant, and much of the food work created there, was inspired by an atmosphere of new and experimental changes in the art world at the time and the search for new modes of expression, different types of spaces, and new materials (Morris 1999).

Rirkrit Tiravanija surprised visitors to a show’s opening by serving a Thai curry instead of displaying artwork. He was concerned with institutional critique and his *Untitled (Free)* in 1992 was a way to use a new medium to take this critique further and combine it with his unique set of interests. Tiravanija did not only subvert the gallery experience by serving a strong smelling, yellow curry instead of displaying art, he also did so in the entryway to the gallery, a kind of “nonspace.” Tiravanija explores the social interaction around the consumption of food. He says “. . . it’s really not so much about coming to see things, but to be in it. [. . .] you’re in it and the meaning is made through you. I think it’s a different way of experiencing art in that sense. It’s not art as life, it’s different” (Trippi 1998, p. 156). Tiravanija locates himself as both continuing the work of earlier avant-garde artists, exploring the relationship between art and life, and questioning it. The experience, the interaction between the diners in the space using food as a frame, is the focal point of his work.

Mimi Oka and **Doug Fitch** chose the term Orphic to describe their artistic work. They refer to themselves as “sustenance artists, making works of art in edible media” (<http://orph.us> viewed 2012). Orphism was an avant-garde art movement that focused on abstract painting, highlighting the notion of painting for its own sake, not as a representation of anything else, and on the artist’s ability to create a sensuous experience. Fitch and Oka perceived their work with food in the same terms, exploring food as a medium for its own sake and creating edible objects and later culinary events inspired to a degree by the Futurist Cookbook, like *A Night of Seating and Eating Color* (Tokyo, 1996), *Edible Still Life in Clay* (Tokyo, 1998 and NY, 1999), or *Ile Flottante* (France, 2000). In *Good Taste in Art* (1999 and 2000), the artists created handmade, colorful pasta that was then composed into framed pictures. The painting were displayed in a gallery where the audience could purchase them and then choose whether they would rather take their new acquisition home or take it next door, where chef Daniel Boulud would cook and sauce it for them to consume on the spot. In this project, Oka and Fitch involved their audience in the work directly, forcing them to make decisions that highlight their culpability in the process of consumption.

Composer **Fast Forward’s** musical pieces using kitchen sounds are directly inspired by John Cage’s work with found sound. Forward created musical compositions from a variety of found sound, incorporating chance elements into his work. In recent years, he has devoted more attention to work centered on sounds derived from cooking and the kitchen environment, like *Feeding Frenzy* (1999 and on) and *Musique a-la-Mode* (2008, 2009), where the sound can be directly linked to the perceived action of the performers (Kirshenblatt-Gimblett 2007, p. 83).

Finally, to mention just one of a younger generation of artists, *Meat Poem #6 (Man Becoming Machine Chew to the Future)* by Bradley Chriss (2010) can be seen as a direct descendent of the Futurists in both its interest in machines and technology and in its shock value: in this live performance and video work, Chriss stuffed raw, ground meat into his mouth, chewed it several times, and

spit it into a sausage skin. The sound of his breathing and chewing was amplified to provide the score. Chriss's work highlights both the ongoing relevance of the Futurists work and the constant evolution and reexamination of the interaction between artists, audience, and food and consumption.

Avant-Garde Culinary Practice

Historically, culinary creations could not qualify as artistic creations since in order to qualify as Art required the creation have no utilitarian value and that it would have a lasting presence allowing its study and appreciation for years to come. Culinary creations would obviously be excluded from such a definition. However, modern art forced a change in what we perceive to be a work of art. From Dada's ready-mades to performance work, a new definition of art was required to encompass these new modes of expression.

John Dewey's theory of aesthetic experience asserts that an aesthetic experience is based on interaction and that ordinary experiences in everyday life could be appreciated as aesthetic experiences, insisting that traditional classifications of "art" hinder our appreciation and understanding of new forms (Dewey in Kuehn 2005). This is particularly relevant as we think of the experience-centered work of Fluxus and much of the other work described above. It is also helpful as we think through the understanding of certain culinary creations as art.

Chef Ferran Adria's work has been publicly marked as art by his inclusion in the 2006 Documenta art fair in Germany. After considering several options of how to present his "art," Adria and his team decided that a true experience of elBulli art is dinner at elBulli. During the 100 days of Documenta, two visitors a day came and dined at elBulli. Rather than justify Adria's work as art (that has already been established by the fact of the invitation to participate), he would show "that cooking is cooking," that he is not a sculptor or a performer. Adria's Documenta team asserts that cooking is a unique medium governed by its own strict set of rules (Hamilton and Todoli 2009). Central among these rules is that the food needs to be delicious (a restriction

that does not apply to artists working in this medium as many of the Futurist "formulas" demonstrate). Furthermore, cooking is multisensory and dishes must engage all five senses. It is also tied to a particular location and the dining experience is a total one, including all aspects of the restaurant. Finally, it is important to note that a restaurant is a business; unlike other artists, chefs need to run a sustainable business. Following these rules, this branch of the arts has its own avant-garde movement, one that tests the boundaries of traditional culinary practice and breaks new ground with experimental, innovative work.

Adria and his team examine the concept of avant-garde cuisine, defining it as a cuisine that is "most modern" at the time, "one which opens up new horizons," but find other concepts more useful to describe their work, like "technique-concept cuisine" in 2004: "a type of creative cuisine in which the chef aims not only to make a new recipe, but also to create a new concept or invent a new technique that will open up new horizons for his own style and for cooking in general" (Adria et al 2005, pp. 176–177). In 2008, Adria preferred the label "techno-emotional cuisine" (Myhrvold 2011). Significantly, Adria and his team think through these terms and engage in an ongoing process to classify and frame their work, relying on tools from both the sciences and the arts. Nathan Myhrvold makes a case for defining Adria's cooking as the first true Modernist Cuisine, claiming the key to the Modernist project in the arts is in the dialog between artist and audience, a dialog that Adria creates with the diner at elBulli. Myhrvold demonstrates that among Adria's goals are the impact of questions like "did the food make people think?" Did it engage them emotionally? (Myhrvold 2011, pp. 17–18).

Carolyn Korsmeyer argues that the most significant element in appreciating food as an aesthetic category lays in its "meaning-bearing qualities that give food its cognitive significance," positioning the subjective pleasure we derive from food as secondary (Korsmeyer 2008). A significant element in the work of Adria, as well as several other new or Modernist chefs, is that they are conscious of these "meaning-bearing" properties and employ them

deliberately in their creations to give the diner pause and make her think.

Heston Blumenthal writes in *The Fat Duck Cookbook* "...a multi-sensory approach to food [i]f it's done sensitively, it's not about turning the restaurant into a lab and the diners into guinea pigs. It's about creating a framework and canvas upon which each person paints their own images, memories and emotions" (Blumenthal 2008, p. 212). Adria in particular has systematically examined, documented, and analyzed his work over the years at *elBulli*. In a reflection on deconstruction he says: "This deconstructed dish will keep its essence and will still be linked to a culinary tradition, but its appearance will be radically different from the original. For this game to be successful, it is essential that the diner has a gastronomic memory, since the absence of references turns the concept of deconstruction into new 'construction' based on nothing" (Adria et al in Myhrvold 2011). In this, Adria is like the artists described above; his work has meaning in the context of previous work in the field. He reacts against it or pays homage to it, but in order to fully understand his creation, the diner must have a prior knowledge and "read" the work as part of a historical development.

Chefs like Heston Blumenthal and Grant Achatz, among others, share with Adria not only the sophisticated methods of preparation and necessary technology – these are but the tools they employ in creating their dishes – but also a way of thinking about their dishes conceptually. They are not only looking for new and pleasing flavor combinations and textures but also for ways to provoke an emotional and/or intellectual response in the diner, as seen in a poster on the kitchen wall at Achatz's *Alinea*: "capture spring. What is it? New, Fresh, Ice. Sprouts, delicate, gradual" (Max 2008). Other examples include Adria's *Thaw* (2004) reflecting on a natural phenomenon, Blumenthal's *Sound of the Sea* (2007), presented with a small listening device inside a shell with a specially recorded soundtrack, and Achatz's *Tomato* (2008), which makes the diner pause and rethink that particular product.

Most significantly, these chefs are constantly trying to innovate and surprise their diners.

Much like the artists discussed above, Modernist chefs control and shape the total dining experience, engage all the senses, and create work that surprises and even shocks. They react against previous traditions and strive to make the diner pause and think and to reexamine things they may have taken for granted or disregarded.

Summary

The changes in the food world in recent years have made an impact on the way artists employ food in their work today. As the chef becomes more like an artist and the restaurant becomes a site for unexpected surprises and multisensory experiences, artists turn to food with new insights and interests. Since one of the hallmarks of the avant-garde is the strong presence of an ideological agenda, it seems a relevant question to end within the context of this entry. Like many avant-garde artists, it seems the strongest ideology common to these chefs is the search for innovation, the suspicion and reexamination of all previous rules and traditions, and the openness to inspiration from a variety of cultural and disciplinary sources. This ideology has powerful implications beyond the restaurant or the gallery. The growing importance of non-Western cultures and traditions and the questioning of habitual hierarchies and institutions, particularly when experienced experientially – literally ingested, can be a very effective tool for change. It remains to be seen if the kitchen will follow in the steps of the art world to include more diverse voices beyond those of white men, as part of its deconstruction of tradition.

Cross-References

- [Aesthetic Value, Art, and Food](#)
- [Food-Body Relationship](#)
- [Molecular Gastronomy](#)

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Food Animal Production, Ethics, and Quality Assurance

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Synonyms

Agriculture; Animal welfare; Quality; Safety; Social responsibility; Values

Introduction

As the need increases for sustainable methods of feeding the growing world population, questions have emerged about the quality and safety of foods currently being produced in affluent, developed nations. Various studies indicate that with increasing affluence, consumers tend to shift their focus from food accessibility to food safety, quality, and ethical and social dimensions that are of importance to them (FAO 2009; Viaene and Gellynck 1997; Botonaki et al. 2006). Consumers with continuous access to food expect the products they purchase to be safe, nutritious, inexpensive, and high in quality and consistency (Beekman 2008), and substantial portions can afford to scrutinize the methods by which food is produced.

A number of reasons beyond relative affluence underlie such changes in consumer interest. Aside from the increasingly global nature of food production and trade and decreases in consumers' sense of connection to their food and their understanding of how it is produced, food safety scares, while relatively infrequent, are still a major source of concern. For example, high numbers of people still become ill from foodborne pathogens such as *Salmonella*, *Campylobacter*, and *E. coli* O 157 (Rocourt et al. 2003), and food recalls due to safety and quality issues are regularly reported. In addition to occasional food safety scares, recent UK discoveries of beef products tainted with horsemeat and animal abuse scandals occurring in the USA and abroad have raised concerns about the quality of care and treatment of agricultural animals used for food production routinely received. Further, conflicting information on the human health implications of the use of antibiotics and other technologies used in food animal production (Rollin 1995; Thompson 2008) as well as various reports of resource depletion and other negative environmental impacts of food animal production have helped to undermine consumer trust in the safety and quality of foods of animal origin (Ilea 2009; Wright and Middendorf 2008; Scruton 2004). The basis, therefore, for demands for food quality assurance is multifactorial and

reflects both ethical and scientific concerns about modern food animal production and its societal impacts.

Ethical Dimensions of Food Quality

Food “quality” can be somewhat difficult to characterize as it refers to subjective as well objective characteristics upon which consumers have varying ideas and priorities. Positive perceptions of food quality generally pertain to those features consumers find desirable. As such, food safety is inextricably linked to quality, since presumably consumers find safety in foods to be a desirable attribute. However, beliefs about food quality are increasingly tied to “credence attributes” or qualities of a product that are invisible to the consumer both before and after the purchase (Grunert 2005) such as the standard of care provided to animals used for food or the sustainability of the production method used. Because qualities such as these cannot be verified at the point of purchase (and it is often difficult to do so afterward), the capacity to meet and verify public expectations in these dimensions becomes a challenge.

Nonetheless, the ethical dimensions of food quality assurance (e.g., distributive justice concern such as the ways in which animals and people are treated, fair trade, or the broader environmental impacts of food production) appear to be of particular interest currently to consumers in western developed nations and elsewhere. Over the past decade, shifts in public interest toward “ethically responsible” food and “food activism” have become evident. Such interests are reflected in the growth of locavores, animal protectionists, environmentalists, and members of the human health community opposed to conventional, industrialized animal agriculture, which has become the predominant model of animal production in developed western nations. Singer and Mason (2006) describe this movement as “ethical consumerism,” wherein people actively seek out food production systems that align with their values. This type of consumer behavior is focused on procuring foods that do minimal harm to society and to the environment.

Consumers with such interests tend to favor extensive production systems and are more inclined to seek labels with implied credence attributes such as “traditional,” “organic,” and “natural,” (Harper and Makatouni 2002) because they believe them to be of higher quality and safety and perhaps perceive them to be more socially responsible (Croney et al. 2012). Studies indicate, for instance, that some consumers may associate organic production with positive attributes such as “chemical-free,” “healthier and more nutritious,” “earth-friendly,” and “fresh” (Raab and Grobe 2005). Consumers may also use animal welfare as an indicator of food quality and safety and in fact have been reported to buy organic food for these reasons (Harper and Makatouni 2002).

Clearly, the desire to seek out products with credence attribute labels is indicative of interest in discerning conventionally produced foods from alternatives that are perceived to be superior both in terms of quality and social responsibility. In regard to the latter point, large-scale, intensive food animal production has become highly contentious in recent years. Recurrent issues of concern relative to intensive animal production range from the safety to healthfulness of foods produced using technologies such as genetically modified organisms (GMOs) and antibiotics, to implications for human health, animal well-being, and environmental integrity (Verdurme and Viaene 2003). Claims that foods, especially animal products derived from industrialized, intensive production may be unhealthful and of poorer quality than those produced by other means are ubiquitous. Much of the concern about the quality and safety of foods of animal origin relates to the industrialization and intensification of animal agriculture. In particular, large-scale confinement production is often viewed as problematic. Such systems facilitate optimization of certain production efficiencies and have resulted in an abundance of food made available at reasonably low costs, which permits most consumers to spend only a small percentage of their disposable incomes on food (Thompson 2013). However, intensification, which amounts to getting as much economic value possible, heightens

concerns that animal care and well-being may be sacrificed for economic expediency. The “high technology” typical of industrialization has facilitated mechanization and cost cutting in labor, housing, feeding, and processing advancements in farm animal production and has allowed the respective industries to confine large numbers of animals in highly capitalized facilities known as CAFOs or concentrated animal feed operations. These production systems are emblematic of large-scale swine and poultry facilities in many parts of the world, such as the USA.

CAFOs have been met with mixed reviews despite their success in meeting consumer demands for safe, consistent, and relatively inexpensive foods and although they offer some welfare benefits to animals, such as advancements in feed composition and delivery, and benefits derived from indoor housing, such as protection from predators, parasites, and inclement weather. A major concern raised by critics is that technological innovations have paved the way for animal producers to alter the environments in which agricultural animals are raised and housed and that this may result in impaired animal well-being (see also Fraser et al. 1997). For example, billions of commercially produced chickens and pigs are kept in vast numbers in environments which are more congenial to increased productivity rather than to their ethological or evolutionary histories (e.g., battery cages for laying hens and gestational crates for pregnant sows). Farmed animals maintained in husbandry situations described by Rollin (1995) as akin to putting “round pegs in to square holes” may lack the requisite adaptations to cope with their circumstances, thus jeopardizing their well-being. Given this, technologies such as antibiotics and vaccines are often employed to mitigate production diseases in contemporary large-scale production operations. However, such interventions do not address the behavioral impingements on the animals, necessitating further technological investment in housing and management strategies that more broadly support animal well-being in industrialized production.

Consequently, there appears to be growing concern not just about the types of technologies

being utilized in food animal production but about the rearing conditions that necessitate their use in the first place. Numerous studies have shown that consumers have a positive willingness to pay for various animal welfare attributes, including opportunities for the animals to exhibit normal behavior or exercise and to have comfortable bedding and access to the outdoors (Norwood and Lusk 2011).

In addition to concern about the humaneness of on-farm practices, other environmental justice issues associated with industrial food animal production have also been highlighted as needing serious attention. These include the plight of farm workers vis-a-vis their health and safety, just wages, and various forms of discrimination (Wright and Middendorf 2008; Thompson 2007). For example, undocumented immigrants who have little to no protections themselves are at risk of being exploited by being poorly paid, offered little or nothing in the way of worker training or health care, and having limited protection under the law due to their status. Given these circumstances, it is not inconceivable that they might have little incentive to be proactive about performing rigorous animal care duties since they themselves may not be well cared for.

Environmental justice concerns also include how animal agriculture impacts water, air, biodiversity, species interaction and integrity, and land use. The whereabouts of CAFOs near rural communities, for example, raise distributive justice issues when the potential harms to community members (e.g., in terms of assaults to their health and quality of life) can put them at a gross disadvantage (Donham et al. 2007) relative to others who may derive benefits from CAFOs (e.g., access to affordable animal products) without being so immediately and adversely impacted.

Not surprisingly, given these concerns, assurance of the socio-ethical quality attributes of foods of animal origin has become a high priority for many consumers. For a number, it is a matter of ethical urgency related to substantive ethical issues such as consumer autonomy and procedural ethics issues like governance and trust in the global “foodscape.” Consequently many companies, organizations, and nations have

developed quality assurance schemes as much to assuage public concerns as to ensure food safety and quality and lend potential marketing advantages to those utilizing them (Grunert 2002).

Quality Assurance in Regard to Animal Welfare

Various schemes have been designed to assure consumers of the safety and, thus indirectly, the quality of foods. As noted previously, although quality and safety often go hand in hand, quality is not an absolute characteristic and neither attributes (safety or quality) can be directly observed (Holleran et al. 1999). Given this, food quality assurance programs are generally aimed at guaranteeing that certain specifications or requirements have been met during production. One commonly accepted way of ensuring food safety is by the application of Hazard Analysis and Critical Control Points (HACCP) principles which have been designed and implemented to facilitate food safety. Noting HACCP application implies that the food will not cause harm as the principles help identify hazards, set control points and limits, establish monitoring procedures, and outline corrective measures (Wood et al. 1998). In theory, similar principles should be able to be applied to ensure other aspects of food quality of importance to consumers. Attributes that do not necessarily affect the safety or intrinsic qualities of the product, but which consumers might find of interest, include animal welfare or environmental preservation.

Why the Impetus to Incorporate the Well-Being of Agricultural Animals into Food Quality Assurance?

Protecting the well-being of agricultural animals is clearly becoming a global priority (Fraser 2008). The World Organization for Animal Health (OIE) guidelines are indicative of the increasing global level of concern for the welfare of farmed animals (<http://www.oie.int/animal-welfare/animal-welfare-key-themes/>) (OIE 2005). Treaties in Amsterdam and Lisbon (Article 13) (<http://ec.europa.eu/food/animal/welfare/>

[policy/index_en.htm](http://ec.europa.eu/food/animal/welfare/policy/index_en.htm)) have clearly expressed protection and welfare provisions for “sentient” animals, and EU directives that have implications for national and trade policies mark more clearly guidelines for international land and sea transport as well as for euthanasia and humane slaughter. Recent developments also include national strategies like Australian’s Animal Welfare Strategy, which outlines obligations to animals in our mixed communities. Countries like Canada and the USA have put forward documents that reinforce best practices (note AG Guide and NFACC Code of Practice http://www.agr.gc.ca/cb/index_e.php?s1=n&s2=2010&page=n100430c). A new animal welfare legislation in Scotland in 2012 that replaces the Welfare of Animals (Slaughter or Killing) Regulations of 1995 also reflects a growing desire for national standards and uniformity (<http://www.food.gov.uk/scotland/news-updates/news/2012/dec/animal-welfare-scot#.UTvgdqUQgUU>).

Animal welfare has an “evaluative-normative component” that is linked to the quality of life of the animals and from a production standpoint has correlates with other normative components such as food safety and quality, worker safety, and environmental quality (Fraser 1999). The conception of farm animal welfare is rooted in public concern for how animals are treated and raised in CAFOs (Harrison 1964) and today integrates the interests and concerns of different stakeholders, including producers, governments, NGOs, and animals.

Trade policies, national regulations, voluntary industry programs, citizen and consumer initiatives, advocacy group initiatives, and media coverage are different ways in which protection for (farm) animals’ welfare is gaining attention globally. Some recent prominent drivers for change behind concern for animal welfare include consumer awareness of on-farm practices and social acceptability of standard practices; animal abuse scandals; changing relationships and image of food animals (they no longer are “creatures outside of society”); the prominence of animal welfare science and cognitive ethology and revelations regarding the capacities, behavior, and needs of animals; citizen pushback due to

relatively little legislative protection for farm animals in many countries and the lack of a national animal welfare code or standard in some; ballot initiatives and legislative activities like California's Proposition Two; influence from the European Farm Animal Protection policies on global trade partners; and pressure by special interest groups for industries to develop welfare guidelines and standards (Mench 2003; Croney and Millman 2007).

To that end, food quality assurance systems that at least partly address animal welfare and other latent ethical attributes of food production can take various forms. Regardless as to the nature of the quality assurance program, there must be documentation of the practices and procedures used, and verification and certification of these must occur (Holleran et al. 1999). For these reasons, most quality assurance schemes typically include the following components: traceability, certification, and auditing.

Traceability refers to the ability to track a food product all the way back through the supply chain (e.g., from a supermarket back to the producer). Traceability not only facilitates increased transparency in the supply chain but also provides an essential tool in the ability to identify and recall products that pose food safety or other consumer risks. Traceability can also be used to enhance certification programs. Certification programs, which are typically voluntary, involve meeting the requirements of an established standard for the production of food so that this can be conveyed to potential customers and other interested parties. In cases where certification is required for a producer or other entity to have their animals or products purchased by a customer or specially labeled and marketed, participating in a certification program may be only somewhat voluntary as the producer has little choice in complying if they hope to retain market access. For certification to be meaningful and credible, however, it is necessary to verify that the production standards have been met. Verification may be achieved through auditing or assessment. Third party auditing, wherein an entity with no vested interest in the outcome does the assessment, is considered the "gold standard" in verification and thus, facilitating consumer trust.

Assurance programs vary in regard to their scope and source of origin. For example, voluntary programs can include international quality assurance standards, such as ISO 9000, national farm-level programs, such as the USDA's National Organic Program, the UK's Farm Assured British Pigs, and private standards or certification programs developed and employed by major retail organizations, such as the National Council of Chain Restaurants (NCCR), the Food Marketing Institute (FMI), McDonald's, Burger King, Marks and Spencer, European Retail Good Agricultural Practices (EUREPGAP), and British Retail Consortium (Mench 2003; Mench et al. 2008; Trienekens and Zuurbier 2008). Recently, voluntary assurance standards that emphasize agricultural animal well-being have become a major source of contention as well as change for food animal production standards and thus will be the focus of the discussion. For a more comprehensive review of different types of quality assurance schemes in the UK and USA, refer to Bredahl et al. (2001) and Trienekens and Zuurbier (2008).

In the USA and other western developed nations, the impetus to address the animal welfare component of food animal product quality assurance has been market driven, involving niche marketing of "humanely raised" products (Mench 2003; Croney and Millman 2007). Thus, the last decade of food animal production has been marked by food processors and retailers establishing quality assurance via development of science-based guidelines/standards with an emphasis on animal care and welfare. Such standards usually include common areas related to meeting the animals' physical needs, and thus, basic for needs provision of food, water, shelter (including ventilation, lighting, and the thermal environment), and veterinary care will be outlined. Depending on the goals of the assurance scheme, for instance, for those attempting to better address animals' behavioral and psychological needs, attention may also be given to the type of housing that is permitted (e.g., the use of gestation stalls or battery cages), the amount of space allocated to animals whether they are kept singly or in groups, and whether or not enrichment is

required. In addition, the quality of animal handling and some aspects of management may be specified, including practices that are forbidden (e.g., tail docking, nontherapeutic use of antibiotics) or required (e.g., analgesia for painful practices, such as dehorning of cattle). Further, some programs will specify the types of euthanasia that are considered acceptable and who may perform them and how often animals must be monitored.

Such assurance programs serve dual purposes. First, they provide a means by which to document that a specific farm animal product indeed possesses the attributes of interest (e.g., higher animal care and welfare or environmental impact standards), which is particularly important when it is difficult or impossible for consumers themselves to verify that the respective conditions have been met. Second, when the on-farm management of animals is tied to other aspects of production, such as their transport and processing, a “Total Quality Assurance” program can potentially create greater assurance and coordination of the standards under which the animals have been reared. By doing so, consumers potentially have some reassurance that animals have been properly cared for from “farm to fork.” Likewise, when production is integrated as is the case for US pork production, linking existing quality assurance programs such as those related to on-farm management of pigs (Pork Quality Assurance) to the transport of the animals (Transport Quality Assurance) can create multiple integrated points of reassurance and verification for consumers. In other words, they may facilitate coordination of the supply chain in industries which involve different sectors that are not necessarily controlled by one entity (e.g., a retailer), but still potentially impact the credibility of the claims associated with a particular quality assurance scheme.

Ethical Considerations Relative to Ensuring Animal Well-Being in Food Quality Assurance Programs

Those involved in animal production may view quality assurance via any of the available strategies – certification, traceability, or specialty labeling as a means not just of garnering

consumer trust in an era of skepticism and concern about modern production but as a way of gaining some type of market advantage. Of course, gaining an advantage is contingent on consumer knowledge about and receptivity toward such programs (Bottonaki et al. 2006). Further, creating challenges is the apparent incongruence between what consumers state they want and what they appear to support via their purchasing behavior (Olynk et al. 2010). These differences have been suggested to occur via a phenomenon wherein people act as citizens in articulating their preferences, but act differently as consumers at the point of purchase. It is still unclear though to what extent consumers, especially those in the USA, are motivated to purchase based on their awareness of product attributes such as better animal welfare practices on the farm. The economics literature, for example, suggests that the emphasis on the USA *consuming* public is misplaced. Concerns regarding animals really seem to be an outcome of voting rather than consumer choices as such. This data suggests that in the USA, the debate about food animal welfare seems to be occurring less at grocery stores and more in media forums and at ballot boxes (see Tonsor et al 2010). Some studies have shown that animal welfare is a key consideration for the European Union consumers in the broader context of environmental responsibility in food production. As discussed previously, these consumers look for labels associated with animal products perceived to convey higher ethical standards and rely on locally produced foods or those marketed as organic or “free-range” (Nilsson et al. 2004). However, consumer willingness to pay for welfare improvements is uncertain due to limited research and is not uniform (Norwood and Lusk 2011), especially in the USA. Moreover, the actual link between ethical values such as protecting animal welfare and organic food production methods may be weak and require verification.

Further, voluntary proprietary quality assurance in such a manner can be challenging. For example, these programs rely on shared economic interests between suppliers and retailers and can be patchy. Also, although scientists are

often instrumental in developing many of the retail schemes and standards (Mench et al 2008), it is sometimes unclear if the scientific information was critically balanced with insights from other stakeholders, including producers who are directly impacted. In some cases, it is unclear whether the standards are based on scientific justification. In others, political and economic factors may overwhelm scientific ones and conventional practices may prevail despite scientific consensus that might dictate otherwise. Arguably, in the case of animal welfare, an inherently philosophical area of public concern, science alone is not enough to inform our view on our ethical obligations toward animals. Science alone cannot show that certain technologies are in fact “bad” for animals’ welfare, since what is “bad” or “good” will be influenced by one’s value commitment about what makes a life go better or worse (Heleski and Anthony 2012). In the absence of universal standards, latent value systems will likely influence how standards are formed, interpreted, and employed (Mench et al. 2011).

Additionally, this sort of “market approach” has limited outreach since the initiative targets only a small percentage of the consuming public as a way to drive change in animal welfare. It may not be the approach for all countries, especially if local consumers are not well informed about animal welfare issues or do not have the means to pay more for “added-value” products. Moreover, companies based in developing nations may be at a disadvantage as they may not be able to meet all of the safety and quality assurance demands imposed by consumers in developed nations pushed by Western markets. They may lack the means to fully control and trace all aspects of production and distribution that are critical to meeting quality assurance goals while remaining globally competitive (Trienekens and Zuurbier 2008). Consequently, an issue that is likely to emerge as ethically problematic is the establishment by globally operated corporations of disparate standards (for animal care, workers, environmental impacts) for different parts of the world. While it is essential that such companies consider the cultural norms and logistical

constraints of establishing universal standards for attributes such as animal welfare, having different standards operating simultaneously under one brand creates many challenges, including the potential to reflect inconsistent levels of corporate social responsibility within the brand. Increasingly, corporate responsibility is viewed as more broadly encompassing than just business ethics; thus, there is a growing trend to hold corporations morally and socially accountable for their various impacts on communities, the environment, and even on human rights by diverse stakeholders (Maloni and Brown 2006). It is therefore likely that in the future, quality assurance programs may be scrutinized and potentially used as indicators of global corporate social responsibility.

Summary

Quality assurance in food animal production has become a necessity, and the factors that influence perceptions of “quality” are rapidly expanding. Ensuring animal welfare is an increasingly essential component of sustainable, socially responsible production for those operating in developed nations and will presumably become so for those that are still developing.

In regard to animal welfare, quality assurance programs involving standards aimed at addressing animal care and well-being will need to address questions related to what is a good quality of life or baseline standard for morally acceptable animal welfare. Even voluntary standards programs should have teeth and be non-ambiguous and scientifically informed by advisory groups that are represented by independent experts (scientific and nonscientific, e.g., ethicists and economists), animal advocacy groups, members of the industry, and the public. They should be validated, balanced (i.e., consider the impacts on animals, environment, and people), consistent, effective for addressing animal welfare concerns, practical for producers and animal caretakers to adopt and execute, and sustainable (Croney et al. 2012). Public trust in and social acceptability of these standards is important, and thus, the

viability of these programs should not be a function of the viability of the sponsoring body nor merely tied to their philosophy or funding at the time.

Perceptions of agricultural animal food quality involve consideration about which animal production systems are supported in our local and global communities and have inherent social, ethical, and environmental justice implications. A central ethical challenge will be to promote equitable distribution of benefits and burdens for all those impacted by the animal agricultural policies and production systems that are adopted. Consequently, future development and refinement of food quality assurance programs may facilitate deliberation about (1) the nature and impact of vertical integration of different production systems, like swine and poultry; (2) the scale and effects of different farm sized on the behavior (including social) of animals, on local communities, workers' health and safety, public health, efficient use of land and water, energy policy, and food security; and (3) the relationship between science, ethics, and values in promoting and ensuring humane standards for animal agriculture.

Cross-References

- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Bioethics at Purdue University](#)
- [Centre for Animal Welfare and Ethics](#)
- [Corporate Farms](#)
- [Corporate Social Responsibility and Food](#)
- [Environmental Ethics](#)
- [Environmental Justice and Food](#)

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Food Assistance and International Trade

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Synonyms

Food aid

Introduction

The donation and delivery of food assistance is widely viewed as a purely humanitarian endeavor; however, the historical motivations for donor-countries' food assistance policies are often self-serving. Also, food assistance can generate negative commercial and humanitarian effects in recipient-country markets. Such complications have led to the entanglement of international commercial trade policies and governing architectures with the humanitarian domain of food assistance. Several decades of debate and analysis of these issues have been productive, however, and food assistance policies have evolved to better serve those most in need.

It is worth making a clarification on terminology before proceeding. “Food aid” has traditionally been used to describe “the international sourcing of concessional resources in the form of or for the provision of food” (Barrett and Maxwell 2005). Recent innovations in the way that these resources are provided have led to the use of “food assistance” as a more general descriptor that includes cash-based donations and food vouchers, in addition to traditional in-kind food shipments. This entry uses food assistance as a general descriptor and specifies otherwise when referring to in-kind commodity shipments or other forms (cash, vouchers) of assistance.

Donors

The overlap of food assistance and international trade dates back to the first national programs of the 1950s. Canadian and US domestic farm support programs generated surplus production, and national governments sought markets into which these commodities could be disposed without triggering negative price effects in home markets. US food assistance programs, in particular, were entangled with US exports because most assistance shipments were made under the authority of the United States Department of Agriculture (USDA) instead of the United States Agency for International Development. Farm support programs that were paid for by the USDA generated large public stocks of cereal grains that had to be either stored at public expense or disposed of in external markets where US exports would not normally compete. Public Law 480 was established to govern US food assistance policies, and Title I of this program was the largest outlet for US commodities for several years. Food assistance through Title I served two policy objectives: to dispose of public stocks and to develop prospective markets for future US commercial exports. Policymakers believed that providing free, or discounted, cereal grains to consumers in developing countries could condition local tastes for US-produced cereal commodities and create future export markets for US producers.

The ethics of attempting to change traditional tastes through such means are unclear, but there is no convincing evidence that this strategy was successful (Barrett et al. 1999). The market development objective of US food assistance has subsided in recent years, and most US assistance is now channeled through Title II (commodities that are provided to meet humanitarian needs). A large share of US food assistance was historically sold on concessional terms instead of provided in grant form. Such concessions often took the form of export credit guarantees that offered favorable financing terms to buyers. This practice has been abandoned, and all US shipments have been in grant form in recent years (World Food Programme 2012).

Other major donor countries also used their food assistance programs to unload domestic agricultural surpluses. The European Union’s (EU) Common Agricultural Policy (CAP) provided generous support to producers and generated large domestic surpluses. A large share of European Commission (EC) food assistance was drawn from these government-held stocks in the early years of EC programs.

Japanese food assistance programs are closely linked to international trade policies because of the country’s obligations under the World Trade Organization (WTO) Agreements. Japan agreed to allow a minimum volume of rice imports after the implementation of the Uruguay Round Agreement on Agriculture (URAA) in 1995. This commitment was quickly followed by a jump in in-kind donations of rice from zero to an average of 185,000 mt per year (World Food Programme, n.d.) thereafter. Japan appears to be using its in-kind food assistance shipments as an outlet for some of the rice that it has agreed to import under its WTO agreement obligations, instead of allowing the imported rice to enter the Japanese market.

Canadian food assistance was traditionally not linked to international trade policy objectives, but procurement policies were captured by domestic agricultural interests. The Canadian Treasury Board (responsible for funding official Canadian food assistance programs) tied procurement of

donated commodities to the Canadian Wheat Board. The Canadian International Development Agency (responsible for allocating Canada's official food assistance budget) estimates that they paid substantially more to the Canadian Wheat Board than would have been the case if commodities were purchased on international markets (Canadian International Development Agency 1998). The fallout of this tying program was fewer, and smaller, donations from Canada.

Food assistance policies that tie commodity procurement to donor-country agricultural interests amount to implicit subsidies to domestic producers and processors. The result of such policies is that a portion of governments' international development budgets are used to support domestic agricultural interests. The ethics of such practices are questionable, and the debate over these policies has led to important changes in food assistance policies in most donor countries. Most donors have weakened the links between international food assistance policies and domestic agricultural interests. Canada completely untied its food assistance procurement, and almost all food that is purchased with Canadian funds is now purchased in local or regional markets. The EC also provides almost all of its food assistance in cash to be spent in local and regional markets.

The USA is the important exception to this trend. Changes in domestic farm support programs have stemmed the acquisition of public stocks, but procurement remains closely tied to domestic sources. The value of US food assistance programs – approximately US\$1.7 billion in 2010 (Ho and Hanrahan 2010) – is not large enough to provide significant subsidies to US primary agricultural producers, but there remains an “iron triangle” (Barrett and Maxwell 2005) of interest groups that are motivated to preserve the current system. The first point on this triangle is a corps of US processing companies that submit proposals in response to government tenders for commodities. These requests are mostly limited to US-based firms and are generally uncompetitive. The Guardian (Provost and Lawrence 2012) reports that three firms provided 70 % of US food assistance commodities in 2010–2011.

The second point consists of US-based shipping companies who benefit from uncompetitive granting of transport contracts that are restricted to US-flagged vessels. Shipping costs on such contracts are high and are implicit subsidies to US shipping firms (Williams 2006). The third point on the triangle consists of NGOs that receive in-kind food assistance as a form of budgetary support from the US government. These NGOs sell the food (“monetize”) in developing-country markets and use the proceeds to support their activities. There is concern among these NGOs that reductions to in-kind donations would not be offset by higher cash donations; congressional leaders and lobby groups have stated that they would not support the continuation of current budgetary support levels for food assistance programs if the restrictive tying policies were relaxed. Smaller shipments from the USA would significantly affect global food assistance flows because the USA provides more than one-half of all commodities (by volume) in most years.

The transition from in-kind to cash-based food assistance has led to a remarkable shift in procurement patterns. The share of food assistance purchased either locally (in recipient countries) or regionally (in neither donor nor recipient countries) has jumped from approximately 10% to 70% over the past 20 years – this share is above 80 % if US shipments are excluded. Locally and regionally procured food assistance (LRP) provides flexibility to food assistance organizations and is often preferred to donor-country procurement for several reasons. First, locally procured food can typically be transported to recipient regions much faster than donor-sourced food. Second, it can be easier for donor organizations to meet their commitments to provide “culturally appropriate” food if commodities are purchased near recipients. This commitment is viewed by many implementation organizations as an ethical response to the historical use of food assistance as a tool to change local tastes in hopes of developing export markets. Finally, LRP commodities can be cheaper than food that is purchased through uncompetitive bids in donor countries.

Local and regional procurement has the potential to generate temporary demand surges in small markets. Such demand, though beneficial for traders and local producers, can increase local prices and reduce consumers' access to food. Most food assistance organizations are cognizant of this risk and make efforts to mitigate negative effects. Concerns about contract defaults and quality/safety standards have prevented food assistance agencies from buying from smallholders and local markets (Tschirley and del Castillo 2007); most LRP contracts are struck with commercial traders.

The movement to LRP has been paralleled by a shift in the categories of food assistance being delivered. Program food assistance is traditionally bilateral aid; this is donated to recipient-country governments and then sold in local markets; proceeds provide budget support to the recipient government. Project assistance is also sold in recipient markets (monetized), and proceeds are used to pay for development projects. The share of food assistance volume that is made up by program and project aid has fallen from approximately 85–25 % over the past 20 years (World Food Programme, n.d.). Emergency food assistance, which is delivered in periods of humanitarian crises, has become the primary type of food assistance and now accounts for almost three-quarters of shipments by volume (World Food Programme, n.d.). This transition is the result of evolving priorities in donors' food assistance policies. Program food assistance was historically the largest category and was used primarily as budget support for recipient-country governments. Such donations often reflected strategic political and diplomatic, instead of humanitarian, concerns. The most prominent example of this was the US donation of over three million metric tons (mt) of grain to Russia in 1993 and 1999 to encourage stability and strengthen ties with the new leadership. The increased use of emergency food assistance reveals the stronger emphasis that donors now place on the humanitarian objectives (i.e., reducing the incidence of acute hunger) of food assistance. Donor interests (such as export market development, strategic political concerns, and domestic agricultural

interests) in allocating food assistance are becoming relics of the past, with the notable exception of US procurement policies.

Recipients

The inflow of noncommercially imported food, as donated assistance, has the potential to disrupt local markets in recipient countries. Such disruption can take the form of lower domestic prices and reduced imports. Nobel Laureate Theodore Schultz (Schultz 1960) questioned the ethics of disposing of US agricultural surpluses without regard for potential negative developmental effects in recipient markets. He formalized the potential negative effects on domestic prices through the description of disincentive effects on local producers; local producers may respond to lower prices by scaling back domestic food production. Surges of food assistance commodities can also displace commercial imports, thereby affecting trade flows. The potential for displaced commercial trade has framed much of the discussion about food assistance disciplines in WTO negotiations. The concerns about such effects are theoretically sound: an inflow of food will necessarily affect local market prices if it is not wholly additional consumption (i.e., the increase in food supply is not matched by an equivalent increase in food consumption). Observed income elasticities of food demand are less than one, so food assistance commodities cannot be wholly additional (Barrett and Maxwell 2005), and there will necessarily be price effects.

The magnitude of price effects depends on several factors, some of which have been investigated in empirical studies. Barrett et al. (1999) find that aid shipments do not significantly affect recipient-country production, but have a J-curve effect (initial decline, followed by longer-term increase) on commercial imports across a panel of 18 recipient countries. Other studies find mixed results, including negative production (Gelan 2007) and negative price effects (Tadesse and Shively 2009) in Ethiopia, and no significant production effects in Swaziland

(Mabuza et al. 2009). Such results cannot be generalized, however, because the effects of assistance shipments depend on the peculiarities of each case. A few broad lessons can be deduced, though. First, there is the potential for unintended negative consequences of food assistance shipments. Second, this problem is more likely to occur when commodities are monetized. Third, better targeting to those most in need reduces negative market price effects because such consumption is likely to be more additional than if the food is distributed to relatively better-off consumers. Recent developments in most donors' policies have reduced the probability of significant negative side effects. Implementation organizations are better targeting those most in need, and most donors (the USA notwithstanding) no longer allow the monetization of their donations.

International Agreements

The first formal international mechanism linking food assistance and international trade was the Food and Agriculture Organization's Consultative Subcommittee on Surplus Disposal (CSSD). The CSSD was convened in 1954 to oversee donor-country practices in an effort to mitigate the displacement of commercial imports. Donors agreed to report donations to the CSSD and were encouraged to maintain "usual market requirements" in donor countries. Usual marketing requirements were operationalized by comparing current year commercial imports to a five-year historical average. If imports fell below this average, then UMRs were not met. The CSSD had a commercial trade agenda, not a humanitarian agenda, and it did not affect the links between domestic agricultural interests and food aid policies in donor countries. Also, its guidelines were not enforceable and reporting requirements suffered from low rates of compliance.

The Food Aid Convention (FAC) was negotiated alongside the Kennedy Round international trade negotiations in 1967. Donor countries (current members are Argentina, Australia, Canada, EC, Japan, Norway, Switzerland, and the USA)

committed to provide 4.5 million metric tons of grain each year to developing countries. The FAC contained lists of acceptable commodities and formulae for calculating the commitments in different commodities (e.g., maize, rice, and wheat). The FAC, like the obligations of the CSSD, had no enforcement mechanism, and some members did not meet their donation obligations in some years. But, unlike the CSSD, the FAC was motivated by humanitarian concerns. The FAC is fundamentally apolitical in that it does not set any guidelines for how recipients are to be determined; allocation decisions are left to donor countries. The FAC was renewed several times between 1967 and 2011.

A new FAC (now called the Food Assistance Convention) has been negotiated and is scheduled to take effect in 2013. Some commentators had advocated for a change in the measurement of commitments that would increase the incentives for donors to provide micronutrients. Also, the increased popularity of cash and voucher-based assistance programs led some to advocate for a new method of calculating donor obligations based on value instead of volume (e.g., commit donors to inflation-indexed value contributions instead of volume contributions). This suggested change was not incorporated, and the new FAC bears close resemblance to past versions.

Food assistance first entered the WTO set of agreements in the 1996 URAA. The URAA contains disciplines on a range of trade-related policies that are enforceable through the WTO's dispute settlement understanding (DSU), but references to food aid appear only as guidelines and are not enforceable through the DSU. These guidelines call for shipments to be untied from domestic procurement and defer to the CSSD reporting procedures. These guidelines did not affect food assistance policies in donor countries; in fact, the reduction in domestic support payments that followed the implementation of the URAA probably had more significant effects on food assistance. Large public stocks are no longer prominent features of domestic support programs, so the pressure for unloading surplus commodities has lessened. The URAA remains the

governing agreement between trading partners related to food and agricultural products.

The ongoing Doha Development Agenda (DDA) round of WTO negotiations has been framed by the increased assertiveness of developing countries, many of whom felt that they did not receive the developed-country market access promised to them in the URAA. Developing countries have pushed hard for special and differential treatment in the implementation of new disciplines and for increased flexibility to increase tariff barriers (Special Safeguard Mechanisms) in the face of import surges. Despite the title of “Development Agenda,” the WTO agreements that are being negotiated fundamentally remain trade agreements, and there remain lingering concerns among competing food exporters that food assistance can displace commercial trade.

The DDA negotiations over food assistance can be understood through the lens of the ongoing dispute between the EU and the USA over export competition policies. US negotiators are seeking binding and effective disciplines on the EU’s use of export subsidies in agricultural industries. WTO negotiations are reciprocal, and EU negotiators are, in turn, pushing for disciplines on export credit guarantees that the USDA provides to consumer nations. The USA has, until recently, provided some food assistance to recipients under favorable credit terms instead of in grant form. The DDA negotiations have settled on the construction of a “safe box” for food aid that would be exempt from export competition disciplines. The most recent draft modalities to emerge from the DDA negotiations (World Trade Organization 2008) define this safe box as containing food shipments that are provided in response to an emergency declaration by the recipient-country government, the United Nations, or a relevant humanitarian organization. Shipments that do not meet the safe box criteria, with a few exceptions, would be prohibited and subject to disciplines on export subsidies or export credit guarantees.

Observers have raised concerns about the ethics of constraining food assistance shipments with an international commercial trading

agreement. Negotiators at WTO meetings are cognizant of these concerns, and draft modalities defer to humanitarian organizations with expertise in food security to determine when food assistance is needed. Such concerns may be immaterial, however, because it is unlikely that food assistance shipments will be affected by international trade agreements in the near term. Doha Development Agenda negotiations are stalled and are unlikely to be completed anytime soon. This means that the URAA will remain the document of record. Also, it is difficult to envision a situation in which a formal WTO case would be pursued against a donor country (Cardwell 2008). Negotiating countries are aware of the scorn that would be directed towards them if they were to pursue trade retaliation against a donor country. Negotiators also recognize that a WTO panel could consider the opinions of other interested parties when ruling on whether a shipment satisfied safe box criteria – it would not be difficult to find an interested party that could provide justification for a shipment *ex post*.

Other Issues

The food crisis of 2008 led to anti-trade policies in net food-exporting developing countries that generated a new type of problem for food assistance agencies. Governments in several countries imposed export restrictions on food in attempts to constrain domestic food price inflation – these restrictions included border taxes and export bans. Aid organizations, including the World Food Programme (WFP), reported that such policies threatened their ability to source commodities from LRP markets. The risk of encountering such barriers has been more relevant in recent years because of most donors’ increased reliance on LRP commodities. World Trade Organization disciplines on export restrictions did not apply to the types of policies that were implemented over the past few years (Headey 2010), and DDA negotiations have not addressed this issue. Several developed countries have proposed an agreement between exporting countries (outside the

auspices of the WTO) that would exempt noncommercial, humanitarian food from future export restrictions. Most net food-exporting developing countries oppose such an agreement on the grounds that they have ethical responsibilities to prioritize the food security of their own residents. The reality is that food assistance purchases would typically be too small to affect domestic prices in source countries, but such decisions are inherently political and it is likely that anti-trade policies of this type will remain unchecked.

The allocation of food assistance across recipients has been controversial since the first national programs in the 1950s. The seemingly ethical method of allocating limited food assistance resources across recipients would be to deliver food to those recipients whose marginal benefit is largest; that is, target those most in need. Identifying “need” in this context is a complicated task, but there is evidence that recipient need has not been the only, or even the most important, determinant of food aid flows. Studies have identified non-humanitarian factors as being important drivers of donor allocation decisions; these include colonial ties between donor and recipient (Nunn and Qian 2010) and geographic proximity (Neumayer 2005). There have also been reports of the provision of food assistance being used as a bargaining chip in negotiations between the USA and North Korea about nuclear technology. Conditioning the delivery of food assistance on anything other than recipient needs presents serious ethical questions about the role of international assistance – should vulnerable populations be captive to international political considerations? Such questions are, however, becoming less relevant in food assistance allocation decisions. Multilateral assistance (i.e., delivered through the WFP) is more responsive to need than bilateral deliveries, and emergency assistance is more responsive to need than program and project assistance. The shares of food assistance that are multilateral and are emergency have been increasing for several years.

The emergence of genetically engineered (GE) crops has forced international trade

concerns into the humanitarian arena of food assistance. There have been instances in which shipments of GE commodities were turned away in recipient countries, for example, Zambia’s refusal of GE maize from the USA in 2002. There are several ethical considerations in such cases. The ethical standard set by the Codex Alimentarius (a joint effort between the World Health Organization and the Food and Agriculture Organization to provide and guide international food safety assessments) is that international food assistance shipments should meet the national safety regulations of the donor country (CODEX Alimentarius 2010). This requirement is satisfied in the case of GE maize, which is widely produced and consumed in the USA. Genetically engineered maize was rejected in Zambia, however, based on claims of health concerns for Zambian recipients. Certainly, it is the prerogative of recipients to decide on the suitability of food for their own consumption, but such concerns should be weighed against the ethics of turning away food (which has been deemed safe by international organizations and several countries) during periods of humanitarian crises.

There is also a strategic international trade concern that underlies the decision to accept or reject GE commodities as food assistance. The EU maintains a *de facto* ban on the importation of most GE food products, and developing countries have expressed concerns that GE food assistance may comingle with their domestic production. Such comingling could contaminate otherwise non-GE exports that are bound for EU countries and jeopardize future contracts. The potential loss of export markets in the EU could be damaging for local producers, and the implementation of segregated supply chains is not feasible in many developing countries. The concern about contamination can be addressed by milling grains prior to delivery (thereby ensuring that GE whole grains are not planted in recipient countries), but this adds costs and reduces shipment volumes, *ceteris paribus*.

The debate over GE commodities in food assistance shipments has generated a spate of

ethical accusations between donor countries and NGOs. Countries in the EU and some NGOs have accused the USA of pursuing markets for its GE products by donating food grown from GE seeds. The reality, however, is that the donation of GE products from the USA is a function of USA tying policies, not market development objectives. Approximately 90 % of US soybean and maize crops are grown from GE seeds (United States Department of Agriculture 2012), so countries that receive food assistance from the USA are likely to receive GE products. Segregation of GE from non-GE food in the USA before donating these commodities is not feasible, particularly in light of such products being approved for human consumption in the USA. Other commentators have accused EU member countries of unethically forcing their tastes for non-GE products on poor people in developing countries. Such criticism may be justified, but the real issue is the fear of lost commercial export markets. Widespread consumer rejection of GE products in EU countries is unlikely to change in the near term, and developing countries' decisions about accepting GE food may hinge on their assessments of the risk of lost export markets.

The importance of this issue in the future will depend on the adoption of GE technology in developing countries. Most donors, with the notable exception of the USA, have moved towards LRP for donated commodities, and GE adoption rates in many countries are below those in the USA (partly because existing GE technologies have been designed for use in temperate climates on crops that are commonly grown in the USA).

Summary

The provision of food assistance to those in need is viewed by many as an ethical responsibility for developed countries. Several developed countries have, to some degree, accepted this responsibility and agreed to provide commodities as part of their FAC obligations. The finer points of each country's food assistance policies begin to cloud

the ethics of food assistance deliveries, however. National food assistance programs began as reactions to donor-country agricultural industry interests, not as humanitarian endeavors. Other commercial interests (market development, displaced commercial trade) and political concerns (geopolitical considerations, colonial ties) became entangled with food assistance policies in the years that followed. This entanglement led to the presence of food assistance guidelines and disciplines in WTO commercial trade agreements.

There is good news, however. Most donors have significantly reformed their food assistance policies by untying procurement from domestic sources and by channeling more assistance through multilateral channels (i.e., the WFP). Food assistance serves the needs of the most vulnerable much better today than in decades past. The USA remains the main exception to this, which presents a dilemma for those advocating for change. The tying of US procurement to domestic sources reduces the effectiveness of the US food assistance budget, but financial support for these programs would fall if procurement were to be untied. The USA provides approximately one-half of global food assistance commodities, so such a loss would leave a large gap in the volume of resources available for humanitarian projects.

Cross-References

- ▶ [Biotechnology and Food Policy, Governance](#)
- ▶ [Food and Agricultural Trade and National Sovereignty](#)
- ▶ [Food Security](#)
- ▶ [Food Security and International Trade](#)
- ▶ [Food Security and Rural Education](#)
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- ▶ [Multilateral Trade Organizations, Food, and Agriculture](#)
- ▶ [Trade and Development in the Food and Agricultural Sectors](#)
- ▶ [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Food Boycotts

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Synonyms

Ethical consumerism; Political consumerism

Introduction

What do tuna, grapes, salt, and Starbucks coffee have in common? All of these foods have been subject to consumer boycotts. A boycott can be understood as a refusal to purchase goods or services with the intent of changing some aspect of the good or service. For example, when Rosa Parks refused to give up her seat to a white person on the bus and was subsequently arrested and jailed, the citizens of Montgomery boycotted the Montgomery bus system to challenge the laws and practice of the system. Boycotts are “an attempt by one or more parties to achieve certain objectives by urging individual consumers to refrain from making selected purchases in the marketplace” (Friedman 1985, p. 97).

This entry begins with the origin of the term *boycott* and the role of boycotts as a political strategy in contemporary society. Drawing from *Consumer Boycotts: Effecting Change Through the Marketplace and the Media* by Monroe Friedman (1999), one of the primary scholars of consumer boycotts, a taxonomy of boycotts is presented. Here various food boycotts are discussed in context of stages of boycott actions, functions of boycotts, the focus of boycotts, and boycott characterizations.

Role of Boycotts in Contemporary Life

The word “boycott” has its origins in food production. In 1880 in County Mayo, Ireland, a retired British army captain, Charles

Cunningham Boycott, sent his tenant farmers to work for a fraction of their pay. When the farmers refused, Boycott and his family attempted the work themselves but grew tired in a short time. Eventually, the farmers went back to work yet on rent day were served eviction papers from Boycott. The tenant farmers organized a “mass meeting at which they persuaded Boycott’s employees (his servants, drivers, and animal herders) to desert him and his family. Three days after this declaration of social and economic ostracism the term “boycott” was coined by [Father John] O’Malley” (Friedman 1999, p. 6).

As the Montgomery bus boycott was designed to target the practices and policies of the Montgomery Bus Line, many food boycotts are designed to influence one of the organizations or corporations that are involved in the production and/or distribution of food. In some cases, such as the Delano Grape Strike and the resulting boycott of table grapes, food boycotts are less about the food itself; instead, food becomes the symbol of the contested practice, policy, or ideology. As Friedman (1999) demonstrates, boycotts play an “important social justice role in American history” (p. 3). Recognizing the power of boycotts, Cesar Chavez explained, “boycotts are better than elections because the polls never close and you can vote more than once” (UFW Press Release).

The boycott and other consumption-oriented strategies are not without their criticisms. Bauman (2007) explained the rise in political disengagement as a “collateral causality” of rampant consumerism. (For more discussion, see Robert Putnam’s *Bowling Alone*.) Summarizing this research, Simon (2011) explained, “As forces of buying and selling spilled into every corner of American life, they narrowed . . . conceptions of citizenships. Politics, like consumption, became about me, about how something or some policy created immediate and material benefits, not about the larger community” (147). Brown (2003) argues, “The body politic ceases to be a body but is, rather, a group of individual entrepreneurs and consumers.”

Focusing on the potential power of a popular consumer pastime, Zukin (2004) suggests that

engaging in political and electoral debate in the public sphere has been replaced by shopping. Through both purchasing and refusing to purchase, consumers communicate their presence in the marketplace. Moreover, their participation in the marketplace, and the particular flavor of that participation (e.g., which brand of coffee they buy), conveys ideals and values. As values such as justice and equality in society are often linked to particular brands through marketing and advertising campaigns, the consumption of such brands acts as a “vote” for the company’s image and a definition of such values (Klein et al. 2004). This perspective suggests that consumers hold power to enact particular conceptions of justice and equality through the power of their dollar. Echoing Cesar Chavez’s belief in the power of boycotts, Simon (2011) asserts, “boycotts are about leverage and about being heard; they are about the practice of political power. [As] boycotters urge fellow shoppers to think about the implications of their purchases . . . they attempt to leverage—and thus acknowledge—consumer power” (p.152).

Taxonomy of Consumer Boycotts

This taxonomy is based on the work of Friedman (1999) and will discuss the following elements of consumer boycotts: stages of boycott actions, functions of boycotts, the focus of boycotts, and boycott characterizations.

Stages of Boycott Actions

When people begin considering a boycott solution, they embark on a potential four-step process to take them from idea to action. The decision to initiate a boycott, crafting a persuasive and compelling press release, planning the details, gathering public support, and the implementation of a boycott are steps of a progressive process designed to put pressure on the target organization to comply with the demands of the boycott organizers. While not all boycotts move through the following four steps, they typically escalate in

Food Boycotts, Table 1 Stages of boycott actions

Stage of actions	Description	Case in point
Action-considered	Press release that a boycott action is under consideration	UFW President Rodriguez delivers a petition with 25,000 signatures (Press Releases: New Gallo Boycott Kickoff Media Packet 2005)
Action-requested	Boycott is called	“No Gallo” boycott is announced
Action-organized	The details of the steps and procedures are given	Media Packet is released and supporters are directed to www.gallounfair.com for details about how to support the boycott
Action-taken	The boycott occurs	United Farm Workers (UFW) Boycotts of Gallo Wines (1973–1978 and June–September 2005) and Charles Krug Mondavi Wines (2006–2008). Delano Grape Strike/ Grape Boycott organized by UFW and Cesar Chavez (1965–1970)

the following fashion with the first being the most mild action and to the latter being the most militant. Although this model may not have been conceptualized to explain the actions of individuals, it can, with some adjustments, be applied to both large-scale group boycotts and the actions of an individual. The following case in point describes the progression of the United Farm Workers (UFW) 2005 boycott of Gallo Wines (Table 1).

The Organizational Boycott: UFW and Gallo Wines

The UFW exemplifies a type of organization whose past success with action-taken boycotts has come to represent considerable force, organizational skill, and political power. When the

UFW announces that they are considering a boycott, the target group often responds. In the case of the 2005 boycott of Gallo Wines, the boycott was short-lived, lasting only three months. When the UFW was considering a boycott of Gallo Wines due to labor issues, they began making the intention to boycott the public with a press release and show of support. Nearly a year before the start of the boycott, UFW President Arturo Rodriguez showed up at the City Hall in Los Angeles to display petitions with 25,000 signatures pledging to boycott Gallo Wines unless a “fair and just” contract is negotiated (Press Releases: New Gallo Boycott Kickoff Media Packet 2005).

Moving to the next stage, action-considered, in June 2005, President Rodriguez officially called the “No Gallo” boycott via rally and march through San Francisco. Calling for a boycott is typically communicated via a press release and corresponding media coverage. In the action-organized step, specific plans for carrying out the boycott are given. The UFW made fliers which summarized the issues at stake, what they wanted consumers to do (i.e., exactly what wines to boycott as Gallo owns and produces under multiple labels), and a phone number to call with questions. The final step of course is to carry out the boycott which the UFW did, until September 2005 when they and Gallo ratified a 3-year contract giving workers pay increases and other benefits.

The Individual Boycott: Boycotting the Meat Industry

When an individual considers the personal decision to participate in a larger boycott, they too may progress through the four stages, albeit not so publicly. The popular slogan from PETA, “Go Veg,” represents the ideology and corresponding dietary practices which boycott the entire meat industry. While the refusal of vegetarians to purchase or consume meat products may be based on a number of individual motivational factors such as concern for the treatment of nonhuman animals, health reasons, ethical considerations, or

religious beliefs, the effect is the same: a boycott of the meat industry. Or in the case of vegans (people who refuse to consume all products containing nonhuman ingredients), their actions create boycotts of the dairy, leather, and wool industries as well.

Individuals considering the decision to be a vegetarian and participating in a larger boycott of the meat industry, for example, will probably think about this alternative diet before making the decision to “Go Veg.” He or she might consider choices by reading about the health benefits, reflect on how this new diet may or may not affect their daily life, or consider the ethical implications of their choice. If the decision is based on a response to a particular situation, he or she may write the offending organization and tell it that unless it rectifies the situation, one’s consumer support will be withdrawn. Next, they may tell friends and family to gauge the level of social support they will have for their decision. The third step in the process involves formulating a plan to carry out a successful boycott. For the individual this may mean finding answers to the questions, “What will I eat if I give up meat?” “Where will I do my grocery shopping?” “Will I hurt my grandmother’s feelings when I won’t eat her traditional turkey at the family Thanksgiving meal?” “Is it alright that my choice will affect what others eat?” By finding solutions to these practical and ethical problems, the person arrives at a practical plan for carrying out their meat boycott. The final step, of course, is the action of giving up meat.

Primary Functions of Boycotts

While boycotts may fulfill more than one function, they usually contain a primary function. Those that are instrumental are designed to achieve practical ends, such as the change or implementation of a particular policy or behavior. Instrumental boycotts are often obstructionist. Expressive boycotts are often short-lived and are a means for venting frustration. Surrogate boycotts fall under this category (Table 2).

Food Boycotts, Table 2 Primary functions of boycotts

Boycott functions	Description	Case in point
Instrumental	Boycott organizers attempt to achieve practical and material ends.	Cracker Barrel Boycott (1991–2002)
	Obstructionist boycotts are often instrumental	Southern Lunch Counter Sit-ins (1950–1960s)
Expressive	Boycott organizers communicate frustration through symbolic acts	Starbucks Boycott (2001)
	Surrogate boycotts are often expressive	

An Instrumental Strategy: The Obstructionist Boycott

Obstructionist boycotts operate by placing an obstruction between the consumer wishing to purchase a particular product or service and the product and service itself. When carried out effectively a physical barrier is created to make obtaining the good or service difficult or impossible. Common obstructionist tactics include sit-ins, stand-ins, call-ins, mail-ins, and die-ins. However, what if the corporate target of the boycott is innocent of the charges brought by the boycott organizers? Or what if that corporate target is unable to defend themselves against such accusations or make adequate changes to the policy, product, or service under attack? These are some of the ethical questions surrounding obstructionist boycotts.

While not a boycott of the food itself, the lunch counter sit-ins in segregated Southern restaurants in the 1950s and 1960s are examples of this type. As the black protesters took up space at the lunch counter, they effectively used themselves as barriers between other potential customers and the lunch counter. Similarly in 1991, the Tennessee Gay and Lesbian Alliance and the

Queer Nation called for a boycott of the Cracker Barrel restaurant chain for its anti-gay and lesbian policies and the firing of some gay and lesbian employees. Participants in the boycott would engage in “slow-down sit-ins” where large groups of protestors “customers” would go into the restaurant at peak times such as Sunday brunch or dinner, take up as many separate tables as possible, place a minimum order (e.g., a cup of coffee), and occupy the table for 2–3 hours (Friedman 1999, p. 150). In 1992 Cracker Barrel claimed that it was an equal-opportunity employer yet refused to rehire the fired employees or add sexual orientation to its nondiscrimination policy; thus, the boycott continued. It was not until 2002 when the shareholders of Cracker Barrel’s parent company voted to add sexual orientation to the nondiscrimination policy was the boycott terminated.

An Expressive Strategy: The Surrogate Boycott

One of the most extreme examples of a food product and company as a symbol of protest as opposed to being the literal focus of the boycott is the 2001 boycott of Starbucks coffee. After a traffic violation, Aaron Roberts, a 27-year-old African-American man, was pulled over by two white police officers. Roberts ended up dead at the scene, shot by one of the officers. Reverend Robert Jeffery believed Roberts’ shooting to be the result of the Seattle Police Department’s unofficial policy of “shoot first, cover up later” when dealing with young black men. Frustrated by the actions of the police in relation to the African-American community, Jeffery called for a boycott of Starbucks coffee. What’s the connection between Starbucks and the death of Roberts by the Seattle Police Department? The power of surrogate boycotts.

In a surrogate boycott or indirect action, “a protest group finds itself dissatisfied with the public policies of a city state or foreign nation and acts upon its feelings by boycotting surrogates (the business firms operating in the geographic area)” (Friedman 2001, p. 237). As with

the case of Reverend Jefferey and Starbucks, the decision to launch a surrogate boycott often speaks to the disenfranchisement and frustrations of citizens to make effective change in the democratic process: “consumer actions increase when politics lose traction” (Simon 2011, p. 146). Boycotts, according to historian Dana Frank (2003), “fill a void where there aren’t social democratic regimes.” The Starbucks Boycott suggests there is a shift of power from formal politics to consumer politics, “as if citizens have out-sourced their politics from the voting booth to the supermarket” (Simon 2011, p.147).

But surrogate boycotts are not without their particular ethical costs. Is it morally just to link Starbucks with the killing of Aaron Roberts? What about the costs of the boycott to not only Starbucks but the secondary targets, such as the suppliers of coffee or cups? According to Garrett (2001), “corporate executives who have experienced the force of this tactic have several strong reservations about the morality of boycotts” (p. 19). These include potential excessive power of the boycott and a restriction of consumer choice (Garrett 2001, p. 19).

Primary Boycott Focus

Depending on the primary function – instrumental or expressive – of the organizing group and how far they progress along the stages of boycott actions, boycotts typically fall into one of two categories: media- or marketplace-oriented. As all boycotts depend on media outlets to grow and survive, the distinction here is on the *primary* focus of the boycott: where most of the action occurs, what strategies for change are utilized, and physical locations of actions. When a boycott stays at the action-considered or action-requested stage, the boycott occurs primarily in the media as boycott organizers attempt to place public pressure generated by media attention on the target of the boycott. Press releases and highly visible protests are utilized to create public awareness and support. Because of the need for public attention, media-oriented boycotts tend to occur in visible and easily

Food Boycotts, Table 3 Primary boycott focus

Orientation	Description	Case in point
Media-oriented	The primary focus for action-considered and action-requested boycotts. Use of press releases and protests in a visible and recognizable local	PETA's McCruelty and Kentucky Fried Cruelty campaigns
Marketplace-oriented	The primary focus for action-organized and action-taken boycotts. Use of protests in places of large consumer traffic	The March to Dandi (Salt Satyagraha) 1930 Vegetarian boycott of meat industry Vegan boycott of meat and dairy industries as well as all products made from nonhuman animals

recognizable locations such as in front of the target organization's headquarters, corporate sign, or logo. When a boycott progresses to the stages of action-organized and action-taken, the primary focus for action is the marketplace as boycotters are attempting to influence the bottom line of the target organization. Typical here would be for the boycotters to protest in front of a local restaurant that is part of a larger national chain to persuade potential customers not to dine there (Table 3).

Media-Oriented: Kentucky Fried Cruelty

In response to the cruel conditions facing the one billion chickens killed each year by Kentucky Fried Chicken, PETA launched the "Kentucky Fried Cruelty" Campaign and Boycott in 2003. Since then PETA has held over 12,000 protests where activists have "crawled into cages, tied on bikinis in the freezing cold, walked around on stilts, and "slaughtered" and "burned" an effigy of Col. Sanders" (PETA 2012). Adding the weight of celebrity endorsements to this campaign, PETA has garnered public support of the boycott from His Holiness the Dalai Lama, the

Reverend Al Sharpton, Dr. Cornel West, Alice Walker, Smashing Pumpkins, and the Black Eyed Peas. While the goal is certainly to effect change in Kentucky Fried Chicken's treatment of chickens while they are alive, the primary focus of PETA's media-savvy activities is to keep the issue in the public sphere and focus negative attentive and pressure on KFC.

Marketplace-Oriented: Salt War

Using the act of boycotting as part of the larger political and moral philosophy of nonviolence, Mahatma Gandhi led the salt war as part of his lifetime quest to foster Indian Independence. The choice of salt was as much strategic as it was symbolic for Gandhi. As the need for salt cut across all regional, class, and ethnic boundaries in India, the focus on the salt tax did not have a polarizing effect on a diverse Indian population. And as the salt tax hit hardest on the lower class, this struggle symbolized the inequity that resulted from British colonial rule.

The salt march or Salt Satyagraha (truth force) began because of a salt tax that was imposed by the British government on the sale of salt. Moreover, the British government had a monopoly on salt, legally forbidding anyone else to produce or sell salt. On March 2, 1930, Gandhi wrote to Viceroy Lord Irwin asking that he amend the salt tax. When the request was not met, Gandhi and 78 male Satyagrahis from his Ashram in Sabarmati began the 230-mile, 23-day walk to the seaside village of Dandi. Along the way villagers stopped to watch the procession and many more joined in. On March 6, 1930, Gandhi picked up some mud, boiled it in saltwater, and produced illegal salt (Graham 2012).

Following his example, Gandhi invited others to make and sell their own salt and continue the war on the British salt tax. (A pinch of Gandhi-made salt sold for 1,600 rupees or approximately \$750.) All across India, people produced and sold the illegal mineral with roughly 80,000 people being jailed for their actions. Although Gandhi asked only men to participate in the March, many

Food Boycotts, Table 4 Boycott characterization

Quality	Description	Case in point
Positive	The refusal to purchase or consume a specific good or service	Tuna boycott (1988–1990)
Negative	The choice to purchase or consume a particular good or service. Also called a “boycott,” “girlcott,” or a “procott”	Buy Fresh, Buy Local (2002–present)

women participated. This was significant as it marked the first time that women participated in the struggle for Indian Independence (Chatterjee 2001).

Just days prior to his next planned action, a raid of the Dharasana Salt Works, Gandhi was arrested and jailed. The Salt Satyagraha continued until Gandhi’s release nearly a year later. Upon his release from jail, he participated in negotiations with Viceroy Lord Irwin resulting in the Gandhi-Irwin pact.

Boycott Characterization

Depending on whether or not they support or discourage consumer spending, a boycott can be positive or negative. Positive boycotts are a sort of “blacklist” and encourage consumers form purchasing the targeted good or service. Negative boycotts function as a “whitelist” and support the consumption of a particular good or service (Table 4).

The Positive Boycott: Creating “Dolphin-Safe Tuna”

In response to a practice borne in the 1950s which has killed over seven million dolphins in the last four decades, the International Marine Mammal Project (sponsored by Earth Island Institute)

organized a consumer boycott of tuna in 1986. The practice in question involved the intentional chasing down of dolphins and using purse seine nets in the hunting for commercial tuna. When biologist Sam La Budde got a job on a Panamanian shipping boat and secretly shot a film showing dolphins dying in tuna catching nets in 1988, he helped bring significant public awareness and support to the boycott. The boycott was further supported when the film was shown to a Senate subcommittee. Two years later StarKist tuna (then owned by Heinz) announced that they would no longer buy tuna caught my methods that would cause harm to dolphins. Bumble Bee tuna and Chicken of the Sea quickly followed the lead set by StarKist. As further evidence of the boycott’s success, the “Dolphin-Safe Tuna” label was created and placed on all cans of tuna which followed dolphin-safe practices. Yet, despite the fact that this was a successful boycott as it significantly reduced the number of dolphins killed in the harvesting of tuna, in September 2011, the label was found to violate the World Trade Organization (WTO) (Tucker 2012).

Led by Casson Trenor of Greenpeace, a tuna boycott is under way to reform the tuna industry yet again. Currently much canned tuna is skipjack and is caught using fish aggregating devices (FAD). To fish with an FAD, a buoy is cast into the water off of a boat. For small fish the FAD acts as a barrier from larger fish. Eventually, the area around the FAD becomes a small but dense ecosystem as larger fish have discovered the fertile hunting grounds. Many of the FADs are equipped with radios and signal the boats when the fish population is high. Boats return with large purse seine nets and take in the targeted skipjack along with everything else in the vicinity – sharks, sword or marlin, and young yellowfin and bigeye tuna. In September 2011 the Congressional representative from American Samoa Eni Faleomavaega showed support for Greenpeace and called for a full ban on FADs. He further asked Americans to refrain from buying any products from Chicken of the Sea or Bumble Bee (Bittman 2011).

The Negative Boycott: “Buy Fresh, Buy Local”

The ongoing “Buy Fresh, Buy Local” campaign is an example of a negative boycott. Negative boycotts are not boycotts at all but their consumption-oriented counterparts, also referred to as a *buycott*. A *buycott* encourages the purchase and/or consumption of particular goods or services, for example, “Buy American.” While the original focus was on produce and local farmers markets, the “Buy Fresh, Buy Local” campaign encourages community members to purchase all locally made products and to patronize locally owned establishments. For some, *buycotts* are preferred over boycotts because of their positive rather than punitive tone.

Summary

The decision to boycott a particular food is often a symbolic choice, such as Gandhi’s choice to use salt to represent the cruelty of British colonial rule or Cesar Chavez’s focus on table grapes to stand for the plight of farm workers. These symbolic functions can be understood by looking at the stages and primary focus of boycott actions, the expressive and instrumental functions, and the positive and negative qualities of consumer boycotts. For the target of a boycott, there may be significant costs stemming from a loss of revenue or damage to their public image, logo, or reputation. For the consumer, the decision to boycott may signify a form of consumer-based political power once found in the public sphere and electoral politics.

Cross-References

- [Fair trade in Food and Agricultural Products](#)
- [Political Consumerism: Consumer Choice, Information, and Labeling](#)

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Food Culture and Chefs

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Synonyms

Celebrity chefs; Cultural criticism; Destination dining

Introduction

The public's fascination with chefs can be tracked through the rising celebrity of chefs like Jamie Oliver, Gordon Ramsay, and Heston Blumenthal. No longer confined to the kitchen, chefs with prominent media presence have created a changed role for professional chefs which can require skills other than cooking in order to be successful. Appearing on cooking programs, writing cookbooks, and promoting household products are just some of the additional jobs required of chefs in order to maintain a profile and run a successful business. Chefs themselves have become brands, changing perceptions of the hospitality industry significantly. This entry gives an overview of celebrity chef culture and some of its effects. In order to understand the celebrity chef phenomenon, this section examines celebrity culture, food criticism, and the increasing influence of social media.

Celebrity Culture

The perception of cheffing is changing. One of the key factors of this change is the incorporation of celebrity culture into the restaurant industry. To reach a level of success that transcends working in the kitchen, chefs have become media savvy and authoritative and appear approachable. The plethora of media channels through which chefs can reach their audience includes television cooking programs and online social networking sites like Twitter and the photo-sharing platform, Instagram. The combination of these media sites, in addition to the authority and taste standards constructed by food critics for chefs and diners, can build the chef as a figure of celebrity.

Celebrity culture is a field that is conceded to be ambiguous, and the definition of "celebrity" is constantly evolving (Marshall 1997; Turner 2004). P.D. Marshall describes celebrities as "overtly public individuals" (1997, p. ix). These individuals, he argues, are "given greater presence and a wider scope of activity and agency" (1997, p. ix). Graeme Turner adds, "What constitutes celebrity in one domain may be quite

different in another" (2004, p. 17); certainly the celebrity chef is only a 'celebrity' in certain contexts. Both Turner and Marshall agree that contemporary celebrity is the result of "a significant shift in popular culture" (Turner 2004, p. 6) and that it "constitutes a change in the way cultural meanings are generated as the celebrity becomes a key site of media attention and personal aspiration, as well as one of the key places where cultural meanings are negotiated and organised" (Marshall 1997, pp. 72–73). There are many chefs who fit these definitions. Jamie Oliver and Gordon Ramsay, for instance, are perhaps the most recognizable contemporary celebrity chefs globally. Both communicate certain values of food, particularly in the case of Jamie Oliver, who promotes healthy cooking and eating through his Ministry of Food project.

With celebrity chefs acting as "ambassadors" of the restaurant industry and sharing their knowledge of food, the public can benefit from the social function of celebrity. As Turner, Marshall, and Bonner argue, "the individual celebrity persona provides a powerful condensation of meaning which can be attached to commodities and issues; similarly, celebrities can act as prisms through which social complexity is brought back to the human level" (2000, p. 66). Contributions of knowledge and opinion from chefs (as judges on cooking shows) position them within the realm of celebrity culture.

Celebrity chefs can be understood through the sociological understanding of celebrity. Marshall considers celebrity as a site of power (1997, p. ix) and as a position that "celebrates the potential of the individual" (1997, p. 43). Marshall defines the "celebrity function" as having the capacity to "organize the legitimate and illegitimate domains of the personal and individual within the social" (1997, p. 57). This organization of domains occurs especially on cooking programs in which audiences are shown a specific way to cook or eat. Television is the primary domain for celebrity chefs; the particular celebrity constructed on television is of a more intimate nature, relying on "an aura more of familiarity than one modalized around distance" (Marshall 1997, p. 122). Celebrity chefs on cooking programs present their

skills as specialized and professional. Tania Lewis considers the importance of “celebrity intellectuals” in light of the “shifting nature of the relationship between contemporary intellectuals and the mediatized public sphere” (2001, p. 234). With social media giving users more power (Rosen 2006, 2010; Lewis 2010), the figure of the public intellectual has evolved to include what Lewis describes as the “more pragmatic figure of the celebrity intellectual” (2001, p. 235).

Lewis argues that celebrity intellectuals may be “more useful for thinking through the changing status of the intellectual in a postmodern public sphere” (2001, p. 235). Increasingly, the knowledges and authority of chefs see them moving toward being placed under the category of “intellectual.” Chefs’ popularity also contributes to what Lewis describes as “a model of intellectual practice that foregrounds rather than disavows the dialectic of *elitism* versus democratisation that inevitably underpins the status of the intellectual” (2001, p. 236, original emphasis). Chefs position themselves as sharing knowledge with everyday audiences; they emphasize the importance of good food for families and people with busy lifestyles, serving what Gramsci calls the “social function” of an intellectual (Gramsci 1983, cited in Lewis 2001, p. 237). Another way to consider celebrity chefs is as “lifestyle experts” (Lewis 2010). Celebrity is increasingly attached to personalities who share ideas and suggestions for different lifestyle subjects such as home decorating as well as cooking (e.g., Martha Stewart). As such, celebrity chefs fall under this category of “lifestyle expert.” As a result, chefs have the choice to be associated with particular ideas or products, enabling them to promote their own celebrity profile at the same time. While media exposure can contribute in large part to a chef’s celebrity status, celebrity “power” “becomes activated only through cultural “investment” in the construction of the celebrity sign” (Marshall 1997, p. 57). This cultural investment comes from food criticism, which lends cultural authority and legitimacy to the work of celebrity chefs.

Food critics are vital to the production of celebrity chefs, creating a discourse through

which the industry – and chefs – can be understood. Turner comments, “The more important development, in my view, is the scale upon which the media have begun to produce celebrity *on their own*” (Turner 2010, p. 15, original emphasis). This production of celebrity can be seen in media texts such as *MasterChef*, *Jamie’s 30-Minute Meals*, or *Heston’s Feasts* and the influential San Pellegrino 2012 World’s 50 Best Restaurants (San Pellegrino 2012; covered in more detail in the next section). Popular media gives chefs a mainstream platform to share their work, while the World’s 50 Best legitimises chefs work through critical appraisal. The more critical acclaim a chef receives, the more opportunities and access to media he or she will have.

Marshall argues that celebrities can be used to “make sense” of the world around us (1997, p. 51). Celebrities are produced by the cultural industry and are figures of cultural legitimization. To consider chefs in the context of celebrity culture is to consider celebrity chefs as legitimising figures of dining out and cooking as a cultural pursuit.

Food Criticism

Print media have shaped the culture of dining and continue to interact with new media discourses on fine dining. Internationally, star ratings in the *Michelin Restaurant Guides* are highly regarded. Along with *Michelin*, critical acclaim in the San Pellegrino World’s 50 Best Restaurants list (published in *Restaurant* magazine) is highly coveted by chefs. Food critics provide potential diners with ideas of what to expect and in doing so shape the ways in which the industry evolves.

A text like the *Michelin Guide* or World’s 50 Best can be read in the context of cultural criticism as an example of Bourdieu’s concept of cultural capital (1984, p. xvi). Bourdieu’s idea of cultural capital is a useful resource with which to analyze the effects of food criticism both on chefs’ working lives and on media and patrons’ consumption of chefs. Bourdieu states, “A work of art has meaning and interest only for someone who possesses the cultural competence,

that is, the code, into which it is encoded” (Bourdieu 1984, p. xxv). The media produce chefs as authority figures on the assumption that its audience has the “cultural competence” to appreciate and accept their authority. “Cultural competence” is constructed with the information provided by the publications – such as the *Guide* – about which food trends are the most popular and which chefs are the most talented. In turn, chefs’ skills and knowledges translate to cultural capital in the eyes of their audiences and the media.

As Arjun Appadurai notes in his *Modernity at Large: Cultural Dimensions of Globalization*, “the modern world... is now an interactive system” (1996, p. 27). Appadurai’s ideas of “neighbourhoods” (1996, p. 178; drawing on Benedict Anderson’s 1991 *Imagined Communities*) and “global cultural flow” (1996, p. 178) form a framework for the idea of chefs’ global community. Appadurai’s notion of the globalized, delocalized world allows for a global chef community, and it is therefore necessary to consider international practices. An examination of key international food criticism texts highlights the existence of a global template of food criticism and the evaluation of the global chef community to produce a chef economy that trades on symbolic cultural capital.

Bourdieu suggests, “The pure gaze is a historical invention linked to the emergence of an autonomous field of artistic production; that is, a field capable of imposing its own norms on both the production and the consumption of [chefs’] products” (1984, p. xxvi). The food critics’ gaze is a form of governance. As cultural gatekeepers, food critics impose norms – that is, standards – on chefs’ work, and they assert these standards in their reviews. As Bourdieu argues, this gaze of critics and diners alike is not unbiased and pure, but loaded in terms of cultural capital in the form of potential critical approval. Bourdieu argues there is no real autonomy in artistic production but that the field is shaped by a governing gaze (p. xxvi). By giving chefs attention and accolades, food critics are simultaneously guiding audiences into having certain expectations of their dining experiences. These experiences and

the food consumed become objectified cultural capital (Bourdieu 1997, p. 47).

Bourdieu argues that capital takes time to “accumulate” (1997, p. 46) and food critics build up experiences and knowledges over time that enable them to offer informed critique. “The production of social capital presupposes an unceasing effort of sociability, a continuous series of exchanges in which recognition is endlessly affirmed and reaffirmed” (Bourdieu 1997, p. 52). Bourdieu argues, “The science of taste and of cultural consumption begins with a transgression that is in no way aesthetic: it has to abolish the sacred frontier which makes legitimate culture a separate universe, in order to discover the intelligible reasons which unite apparently incommensurable ‘choices’, such as preferences in music and food, painting and sport, literature and hairstyle” (1984, p. xxix). The creation of celebrity chefs has abolished the boundary that makes dining and food culture “a separate universe” – celebrity chefs appear on television frequently and write cookbooks that can be used by everyday home cooks. Print food media in Sydney contributes to maintaining the presence of chefs in popular discourse. Food criticism is fundamental in maintaining this presence.

Social Media

The culture of participation is a key characteristic of the chef economy; in particular, Instagram and Twitter have significantly influenced practices of consumption. Social media facilitates various participatory practices sharing photos of restaurant experiences online and tweeting about it. These practices have the capacity to reach wide audiences on social media, allowing users to connect to other users sharing mutual interests. Henry Jenkins argues contemporary media culture is less “spectatorship” and more a “participatory culture” (2006, p. 3). He explains, “This circulation of media content – across different media systems, competing media economies, and national borders – depends heavily on consumers’ active participation. I will

argue here against the idea that convergence should be understood primarily as a technological process bringing together multiple media functions within the same devices. Instead, convergence represents a cultural shift as consumers are encouraged to seek out new information and make connections among dispersed media content” (2006, p. 3). Jenkins’ analysis particularly comes from observations of fan cultures and their appropriation of primary materials (2006). The participatory culture that occurs in the chef economy is similar to what Jenkins describes in his fan cultures; however, primary materials (food cooked by chefs) are less “appropriated” than directly reproduced – as in photographs or using chefs’ cookbooks, for example. While Jenkins speaks of media consumption in general – news, entertainment, popular culture, etc. – his ideas can be extended to consider consumers of the chef economy in order to understand its particular economy of consumption. “Participatory culture” occurs when photos of food are taken at restaurants and shared on Instagram or when diners are tweeting about their meal at a restaurant. This culture is present among chefs and their diners. Participatory culture is characteristic of the chef economy; participatory culture informs consumption in the chef economy and is significant in the construction of the global chef community.

Cynara Geissler writes of the contemporary mobile phone (particularly the ubiquitous iPhone) user’s “impulse to digitally diarize is powerfully present in many (if not the majority) of our social interactions” (Geissler 2010). Geissler cites Anna Reading calling mobile phones “a wearable shareable multimedia data record of events and communication” (Reading 2009, cited in Geissler 2010). While the focus of recent research on mobile social media has been about diarizing and personal biography (Arthur 2009; Hoskins 2009; Reading 2009, as cited in Geissler 2010), sites such as Instagram and Twitter are significant in building communities in order to share common interests. Followers of chefs on Twitter and Instagram are likely to follow other chefs. Instagram also allows users to “tag” their location, providing information on the

location of the photographer. Diners take photos of their restaurant food and upload these to Instagram for their friends and followers to see. The photos are a symbol of cultural capital: by posting the photo, the diner is displaying his or her involvement in the chef economy. Social media not only facilitates and encourages interaction with food culture but also provides a platform on which to signal conspicuous consumption.

With the advent of the smartphone, Geissler suggests “It is easy and intuitive – maybe even irresistible – to digitally narrate the story of our lives as they occur” (2010, online). Instagram has an intuitive interface; it is easy to fill in time waiting in a queue or waiting for friends by simply scrolling through. The app is designed to document what might otherwise be mundane moments in everyday lives. Geissler notes that with such media, there is “the feeling that every moment is performed (for digital distribution and consumption) as much as it is lived” (2010, online). The performance of consumption is evident on Instagram. But Jenkins argues, “Each of us constructs our own personal mythology from bits and fragments of information extracted from the media flow and transformed into resources through which we make sense of our everyday lives” (2006, pp. 3–4). While Instagram allows users to document and share their everyday lives, it is also a platform on which taste is cultivated. “Taste becomes one of the important means by which social distinctions are maintained and class identities are forged” (Jenkins 1992, p. 16). Instagram contributes to the changing practices of consumption affected by the chef economy.

Chefs may have personal uses for Instagram and Twitter, but both are powerful platforms on which they can extend their profiles by documenting their everyday lives to audiences. By forming a sense of community among people who enjoy their food, chefs are able to demonstrate their authority and knowledge on a wider scale, outside of their restaurants (and away from television). This added layer of participation by the audience and chef contributes to further reinforcement of the chef as a figure of authority legitimizing food culture. As well as promoting

their own work, chefs' photos of food on Instagram can also be seen as a general promotion of good food and eating well. The social media presence of chefs adds to their authority and effectiveness with a wider audience, which makes the idea of eating well – either in restaurants or through your own cooking – a worthy idea to promote.

Chefs encourage people to think more about what they eat and have brought food quality to the forefront of dining out. But increasingly, the cultural capital possessed by chefs contributes to changing consumption practices. A key characteristic in the chef economy is its participatory nature – in consumption, in production of information, and in the process of seeking information. Participants of the chef economy are actively seeking to identify with food culture, consequently producing a community *through* convergence culture. Thus, the chef economy controls what and how its participants consume and for what reason. The use of “new” media – that is, social media – mediates consumption of the chef economy that is in part constructed by “old” media – specifically, food criticism in print media.

Summary

Celebrity culture affects the work of contemporary chefs. It requires chefs to be active on social media and to engage with certain aspects of mainstream media. This has fundamentally changed the labor of chefs and the way their labor is understood. The cultural investment by media into chefs has produced an authoritative figure who embodies a specific kind of celebrity status: that of specialized knowledges and culinary cultural capital.

Bourdieu considers taste and distinction through the various activities people undertake in their day-to-day lives. This entry has examined significant practices of consumption and the mediated creation of a chef economy through key aspects of his work. Bourdieu's ideas of distinction, taste, and cultural capital can be clearly seen and are clearly consumed in the

chef economy through social media outlets such as Twitter and Instagram. Food critics in the print media construct cultural capital to inspire these practices of consumption in social media. The chef economy trades on cultural capital and in turn changes practices of consumption, creating a culture of spectatorship and consumption of chefs. The media creates ideas of cultural capital, and chefs scramble to embody them – in turn creating a chef economy that requires constant production and reinforcement of cultural capital to sustain itself. Engagement and consumption of cultural capital are not limited to dining at restaurants; interactions with chefs and food discourses on social media are another way of consuming and participating in the chef economy, creating and maintaining a space in which food and chef cultures continue to flourish.

Cross-References

- Culinary Tourism
- Epicureanism and Food
- Food and Class
- Food, Class Identity, and Gender
- Food “Porn” in Media

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Food Deserts

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Synonyms

Food swamp; Low-food-access zone;
Obesogenic environments

Introduction

Interest in areas with poor access to healthy foods, or what have often been dubbed “food deserts,” has greatly increased over the past 15 years in the USA and the world. Since the 1990s, when the concept of “food deserts” and their possible connections to health was first suggested by

researchers and activists in the UK, the idea that low access to supermarkets carrying a wide variety of healthy food items may lead to negative health effects has been investigated by a number of academic and nonacademic authors. In addition, working to eliminate food deserts has become a key focus area of many organizations working on urban food issues, particularly in the USA.

The term “food desert” originated in British antipoverty activism and policy. It is generally sourced to a resident of a Scottish public housing project who used it to express the experience of living in a deprived community (Cummins and Macintyre 2002). Quickly, the term became focused on the relationships between community development and health, as a number of mid- to late 1990 UK government reports focused on the relationship between food access, community development, and health. In 2003, a study in Leeds found a small improvement in vegetable intake in a low-food-access community after a supermarket opened (Wrigley et al. 2002).

Advocacy and Policy in the USA

In the USA, interest among advocacy organizations and politicians has been particularly strong. In Los Angeles, *Seeds of Change*, a food access report completed by students at the UCLA School of Urban Planning in the wake of the 1992 race-related hostilities in which many supermarkets and corner stores were looted and/or set fire to, influenced the city to promote the opening of new markets in underserved areas and inspired the founding of the national community food security movement (Ashman et al. 1993). In Chicago, a study on food deserts by Mari Gallagher, a local independent researcher, received great publicity, including a front-page story in the *Chicago Tribune*, bringing to light the lack of supermarkets and plethora of fast-food outlets in many areas of the city and showing correlations between areas of low food access, predominantly African-American regions of the city, and negative health indicators (Gallagher 2006). Gallagher later completed similar studies in Washington, DC; Birmingham, Alabama; Savannah, Georgia; Cincinnati; Louisville; and Detroit.

Through The National Center for Public Research, Gallagher also organizes “National Food Desert Awareness Month.” *The Need for Supermarkets in Philadelphia*, a 2001 study by the Food Trust, a local emergency food organization that has since become a national leader in advocacy around food deserts, brought to light vast areas of the city with little access to supermarkets and spatial correlations with patterns of income and race as well as areas of high levels of diet-related disease (The Food Trust 2001). This study led to the Pennsylvania Fresh Food Financing Program, which provides low-interest loans to supermarkets opening new stores or improving existing stores in low-food-access areas. The success of this study in influencing policy influenced the Robert Wood Johnson Foundation to fund similar studies and lobbying efforts in Illinois, Louisiana, and New York.

As interest among funders and advocacy groups in food deserts has risen, policies addressing food deserts have moved forward in the USA at local, state, and national levels. Combating food deserts has been a key domestic agenda for the Obama administration. The Fresh Food Financing Initiative, based on the similar Pennsylvania program, announced in 2010, made available more than \$400 million to promote the development and improvement of groceries in food desert communities through New Market Tax Credits and other incentives. At the city level, many cities have pursued anti-food desert programs. Postindustrial cities such as Detroit and Cleveland have promoted urban farming and community gardens as part of the redevelopment of vacant land. In 2011, new Chicago mayor Rahm Emanuel made ending food deserts 1 of 28 focus areas of his administration. Emanuel hosted a food desert summit starring Michelle Obama and bringing together corporate leaders and community organizers. Emanuel has pushed new policies to assist urban agriculture as well as open stores in areas designated to be food deserts.

Researching Food Deserts

Despite, or perhaps because of, increasing research and policy attention to food deserts,

questions about the issue have recently become more prominent, both inside and outside academia. Questions focus on the existence of food deserts, whether they actually correlate with income and race, the relationship between food deserts and health outcomes, and the morality of the term itself.

Interest in food deserts by independent researchers and policy makers in the USA and elsewhere has been spurred in particular by proposed connections between food deserts and the American “obesity epidemic,” and the further association between both food access and obesity and communities of color. An example of this is “The Grocery Gap,” a review of US studies on food access by researchers at nonprofits PolicyLink and The Food Trust. Based on these studies, the authors conclude that accessing healthy food can be a challenge for those in low-income, rural, and minority communities; “better access corresponds with healthier eating”; and “access to healthy food is associated with a lower risk for obesity” (Treuhaft and Karpyn 2010). In general, food deserts have been claimed to be “obesogenic environments.” A correlation between food deserts, predominately minority communities, and negative health outcomes including obesity is seen in many US studies. However, the question of whether the relationship between food deserts, minority and low-income communities, and negative health outcomes is causal remains a topic of debate. As Caspi et al. (2012) point out, even the methods of studying this relationship are quite nascent. In general, academic studies and the commissions and legislation that often followed have often focused on mapped correlations between food access and racial and income-based inequality. While these maps and the stories they tell are extremely powerful, questions of how to deeply investigate food access abound. Methodological questions include what kinds of stores should be included, how stores should be classified, at what scale to measure access itself, and the possible role of qualitative data.

In terms of the existence of food access as well as correlations between food access and social variables such as race and income, US and

non-US studies have shown very different patterns. The majority of US studies have found negative correlations between poverty and minority status and poor food access (higher poverty rates and percentages of minorities, in particular African-Americans, correlating with lower food accessibility), in both urban and rural areas (Black and Macinko 2008). Much of the difference seen was in the type, rather than the number, of groceries serving the area. For instance, in a national survey, Powell et al. (2007) found that low-income, predominantly African-American, and predominately Hispanic US neighborhoods were much less likely to have a chain supermarket than white and higher-income neighborhoods, which were more likely to have non-chain supermarkets and smaller grocery stores. In a three-state study of selected census tracts in North Carolina, Maryland, and New York, Moore and Diez Roux (2006) found that minority and racially mixed neighborhoods had more than twice as many grocery stores, but half as many supermarkets, than predominantly white neighborhoods. On the other hand, evidence from studies completed outside the USA is mixed, with some finding little or even an inverse relationship between measures of socioeconomic status and supermarket access, with lower SES areas having better access to supermarkets (Apparicio et al. 2007), while others have shown a relatively weak positive correlation (Burns and Inglis 2007). As in the USA, patterns by store type can be quite complicated. In Glasgow, Cummins and Macintyre (2002) found that higher concentrations of retail food outlets were located in deprived districts, including both smaller, independent stores and chain supermarkets. However, the types of chain stores differed, with discount stores being more likely to be in low-income areas and high-quality stores in high-income areas.

Looking at the body of research on food deserts as a whole, cities and countries differ greatly in the relationship between minority status and socioeconomic factors and food access, with much of the difference being the type rather than the number of stores in compared communities. This is important because store type consistently predicts both food price and availability.

Cummins and Macintyre (2002) found in Glasgow that cheaper prices were generally found in chain and discount supermarkets, followed by chains, and then independents. In a rural Australian setting, Burns et al. (2004) found that a larger percentage of the "Healthy Food Access Basket" studied was available in chain stores in larger towns than in the independents that dominated smaller towns. In the Chicago area, Block and Kouba (2006) found a complex picture. Fresh meats and produce were cheaper in independent supermarkets and groceries, while packaged items were cheaper at chain supermarkets. Discount stores were by far the cheapest, but often had low availability, while chains carried almost all items surveyed. Small corner stores, of which there were many in the lower-income, African-American community surveyed, had low availability, and if fresh produce was available, it was often of unacceptable quality.

Controversy over food desert studies was highlighted in the nonacademic media by the publishing of an article by Gina Kolata in the *New York Times* in spring 2012, based on two US studies which questioned both the existence and importance of food deserts. Lee (2012) found children in a national US cohort study living in minority neighborhoods lived more closely to convenience stores and fast-food outlets, but also to supermarkets, than those in higher-income, majority communities. In addition, differences in food access were not tied to weight gain in the children. A California study (An and Sturm 2012) similarly found no connection between food access level and eating patterns. The prominence of the *Times* article, as well as an opinion piece that followed questioning policies focused on ending food deserts, led to a level of public debate that had not been previously seen. While greatly varied, public comments focused particularly on debates over individual responsibility versus ecological explanations for obesity.

For researchers, the article highlighted how differences in scale, as well as differences between study communities can result in very different conclusions. Studies specifically focused on urban areas may differ from national

studies that include both rural and urban zones, in which poverty, as well as distance to the nearest store, varies greatly. The data used for stores can also vary greatly. Many studies, including the ones quoted in the *New York Times* article, use private data vendors that are often highly inaccurate at a local level. Another example of this is a national study completed by the USDA that only mapped chain supermarkets. Contrary to many studies of particular US urban areas that also incorporate independent and local chains, in the USDA study, predominantly African-American communities were not found to have low access to supermarkets, while predominately Latino communities did (Ver Ploeg et al. 2009). In addition, the An and Sturm article further highlighted specific connections between food access levels and eating patterns are difficult to make. While some studies have found connections, qualitative studies on the subject have suggested that food desert residents who wish to procure healthy foods travel outside their neighborhoods to stores where they are available and that the choices consumers make have much to do with the kinds of stores they shop (Zenk et al. 2005). A new supermarket opening in their neighborhood may make their lives easier, but it will not necessarily change their diet. Finally, academic questioning of food deserts was furthered by the publishing of *Weighing In* by prominent geographer Julie Guthman, which questions the idea of obesogenic environments in general and food deserts in particular, focusing on the fact that most studies of the relationship between food deserts and obesity have concentrated on correlations. Guthman also questions the focus on food deserts as an excuse for alternative food projects serving low-income minority communities that she feels are often overly parental at worst, racist (Guthman 2011).

Definitional Issues

A major issue in the study and identification of food deserts is that there is no standard definition for them or even an agreement on whether there should be a standard definition. As many of the

comments on the *New York Times* stated, being two miles away from a supermarket is very different in Manhattan than in rural Iowa. The USDA's original "Food Desert Locator" took this into account by mapping as food deserts low-income areas, defined in a number of ways, but particularly areas that had a median household income of 80 % or less of the state or metropolitan area MHI, where at least 33 % of the population was more than 10 miles to the nearest supermarket in rural areas or more than 1 mile to the nearest supermarket in urban areas. Its new "Food Access Research Atlas" keeps the income cutoffs but creates three different classes of low-food-access zones, including low-income areas where at least 33 % of the population is more than ½ mile (urban) or 10 miles (rural) to the nearest supermarket; more than 1 mile (urban) or 20 miles (rural) to the nearest supermarket; and a third measure that takes into account the percentage of the population that has access to a car. PolicyLink and the Philadelphia-based Reinvestment Fund created a much more nuanced method that divides US census block groups by population density and then into groups within this by car availability. From this Mari Gallagher's consulting company, which has done food access studies nationwide, uses a measure based around a ratio between mean distance to the nearest supermarket and mean distance to the nearest fast-food restaurant. Academics have developed various methodologies for measuring food access, most coming out of more general access measurement techniques that have been used for measuring access to such things as physicians and parks. At the simplest, the number of stores in a region is counted and compared to the population. A somewhat more complex method measures distance to the nearest store and factors in population density. More complex measures utilize advanced geographic analysis techniques to create "food access" surfaces that interpolate access over space. Finally, a body of research primarily within public health looks at the "health environment" inside of the store, including such things as the mix and placement of healthy and not healthy items (Glanz 2009).

A further measurement issue is that there is little agreement on what constitutes a supermarket. How large, in particular, does a store have to be classified as a supermarket? Furthermore, how should one measure size? By square footage? By annual sales? Many researchers and policy makers studying local areas utilize the number of registers, since this is something that a quick store survey can easily gather, but it, as well as the other measures, is a rough indicator of the breadth of food offered by the store. A small store can, in some cases, be devoted to the provision of low-cost fruits and vegetables. Another issue, as mentioned above, is the dataset used for the study. In some countries such as Canada, the national database of businesses is quite accurate. In the USA, however, many researchers rely on nongovernment data sources. Many, particularly national, studies in the USA have utilized purchased business databases. As mentioned above, these have varying levels of accuracy and are probably in general better at general measures of food access than specific local measures. They are also quite expensive. For ease of research, some researchers have looked only at chains. Local organizations have utilized in-person surveys, Web site reviews, Yelp pages, and other methods to improve purchased datasets or to build datasets of their own. Finally, other researchers and activists have tried to study “food swamps,” areas with high access to foods of negative value, rather than low access to healthy foods.

Another difference between food desert investigations is their goals. For most academics, the goal of studying food access is to discover overall relationships between it and socioeconomic variables such as race and class, as well as health outcomes such as diabetes, coronary disease, and obesity. The focus is generally not on specifically identifying particular low-access “food desert” areas. For these researchers a simple index with a cutoff point between food deserts and not food deserts generally makes little sense since they are more interested in the overall pattern than the identification of particular food desert areas. For policy makers, the business community, and advocates, however, the

identification of specific food desert areas is often the focus. They wish to know how many people live in food deserts, where the food desert areas are, where low-interest loans and other subsidies should be focused, and what impact policies addressing food deserts have had. It should be noted, however, that the USDA has changed its indicator from being called the “Food Desert Locator” to “Food Access Research Atlas” and added two additional measures. In other words, focus has been changed from locating particular food deserts to being able to research food access in a more general way.

“Food Desert” as a Controversial and Influential Term

As mentioned above, the term food desert was, at its origin, designed to communicate the experience of living in a high-poverty area. In practice, however, areas have been defined as food deserts with little discussion of what the designation means to those living in the communities themselves. The main issue may be that geographic study of food deserts is truly only a portion of a complete study of the constraints people in various types of communities encounter when provisioning themselves and their families, both for food and many other products and services. In many food access studies, particularly ones covering a large geographic area, stores are “dots on a map.” There is little information known or studied about what is actually inside the stores or how the people in the neighborhood shop. This has been addressed through market basket and food environment studies, as well as qualitative studies, including focus groups and interviews, of those living in food deserts, but the policy focus has been on food deserts as designated zones, without these more in-depth considerations.

Organizations and activists have both utilized and shunned the food desert term for their communities. On the one hand, funding from such organizations as the Robert Wood Johnson Foundation and publicly funded programs such as the Fresh Food Financing Initiative are premised on addressing food deserts and therefore make new

funds available to food desert communities. In order to access these funds, proposals usually have to show that an area is part of a food desert according to an established map, which leads to situations in which groups compare various food desert maps to find ones that include their communities, as well as declaring in public meetings that the areas they serve are food deserts. On the other hand, activists, in particular African-American activists, have objected to the term “food desert” on a number of grounds. Longtime food justice activist LaDonna Redmond, for instance, in a 2013 interview with Tanya Fields in *Ebony*, states that the use of the term food desert places focus on economic development, in specific opening a supermarket, rather than on developing the community as a whole. There is much more needed in many “food desert” communities than a supermarket. Redmond calls food desert “a marketing term” that suppresses community-led entrepreneurship. Wal-Mart made addressing Chicago’s South Side food desert a core of its marketing in overcoming widespread resistance in the city to new Wal-Mart stores. Redmond also feels that the term masks deeper issues in the food system that lead to hunger and poverty. The food desert issue is at its root about the spatial inequality of economic, specifically retail, development. The stories tied to the maps tend to go beyond this, because food desert maps in the USA often mirror maps of negative health outcomes as well as poverty and percent minority. The primary issue for Redmond and other activists is that by focusing on mapping supermarkets, the solution becomes focused on opening supermarkets rather than addressing the reasons behind such issues as concentrated poverty, obesity, and economic disinvestment.

Redmond’s issues with the term in a sense match the reasons for anti-food deserts focus on it. The full name of the Grocery Gap study done by advocates The Food Trust and PolicyLink is “The Grocery Gap: Who Has Access to Healthy Food and Why It Matters.” The study is, thus, not just about where food deserts are but also who lives there. In the USA, this is generally found to be poor, minority, and rural communities. The main focus of PolicyLink’s activism and research

is on disparities in health between races and ethnicities in the USA. For the Food Trust and groups such as the Robert Wood Johnson Foundation, the focus of the work has been on addressing the obesity epidemic and health inequalities. Since low food access tends to geographically mirror obesity levels, such patterns lead to environmental explanations for and responses to obesity in these regions.

Summary

The term “food desert” has become an accepted part of the urban vocabulary and a popular area of research. The power of the term is significant. The idea that many inner city areas have low access to supermarkets now appears in venues from Wal-Mart advertisements to rap music. The term also brings attention on the lack of economic investment in inner city and rural communities as well as provides a possible explanation for higher obesity levels among the poor and minorities. What is still under debate is whether the power of the term is matched by reality. In general, US research tends to support the existence of food deserts in both urban and rural communities and the correlation of these food deserts with areas of poverty and high-minority areas, especially predominately African-American urban communities. However, research outside the USA generally does not find this relationship. Evidence on the specific relationship to health outcomes tilts toward finding a connection, but is more mixed and may also vary by place. The study and mapping of food deserts are also affected by the lack of a standard definition. Finally, the value and implications of the term itself are under debate among food justice and food security activists. The outcomes of these debates will be interesting to watch over the coming years.

Cross-References

- [Access to Land and the Right to Food](#)
- [Environmental Justice and Food](#)

- Food and Class
- Food Security
- Grocery Store Design
- Obesity and Responsibility
- Urban Agriculture

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Food Ethics and Policies

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Introduction

Food policy attracts considerable attention in public administration, among consumers, in the media, in food and agricultural research, and even in private organizations. In general, it is recognized that food production, food handling, and food consumption all have considerable impact on a number of issues such as health, economy, culture, and environmental sustainability. The recognition of the central role of food for

society, the environment, and human beings has fostered multiple reflections on the role and extent of food policy. In this entry, focus is on:

- What is food policy?
- How is food policy interlinked with other policies?
- Which aims and ethical principles relate to food policy?

Policy and Principles

Considering the nature of food policy, it is reasonable to look into understandings of the last part of the concept, namely, *policy*. It is worthwhile to note that in English, unlike many other languages, a distinction is made between policy, politics, and polity. In short, polity refers to the political organization or form of a group. Politics refers to activities associated with governance of political questions. Politics as a decision-making process is concerned with the process of policy-making and therefore part of, for instance, power struggles about which policies to be conducted and implemented and of ethical and juridical evaluations of such processes.

When it comes to the concept of policy, most authors agree that the *raison d'être* of policies is to achieve certain desired outcomes. Policies state aims and goals to be pursued. As most organizations ranging from states to companies to civil society organizations have goals, they also have policies. Policies are hence applied from the macrolevel till the microlevel.

An example from food policy can illustrate this. A common desired outcome of food policy that can be found on all institutional levels from international organizations like the United Nations (UN), European Union (EU), and Codex Alimentarius (1979) to local levels like local canteens is that of food safety. The aims of food safety policies are manifold. Most evident is the aim to protect citizens' and consumers' health by avoiding diseases caused by food intake. This goal is also a part of UNs *Universal Declaration of Human Rights* (1948). Food safety is therefore

linked to health, public health, and health policies. However, food safety is also important for consumers' trust in food and the food market and therefore interlinked with industrial and trade policies.

The example makes it clear that a desired outcome of a policy, in this case food safety, may serve different purposes. The case also underlines the interrelatedness of food policy with other policies. In the light of this, it can be debated if food safety should be seen as value in itself, as a value connected to other values, or simply as a tool to reach certain outcomes and aims. The values behind food safety in this case stretch from economic considerations of the functioning of the market to the protection of individuals based on universal human rights which again are based on the ethical idea of the inherent dignity of all human beings.

The example suggests that policies and policy goals ultimately are based on values or principles even though they may not be expressed explicitly. In his famous definition of a political system, David Easton writes that "[A] political system can be designated as those interactions through which values are authoritatively allocated for a society" (Easton 1965, p. 21). Maurice Kogan (1975, p. 55) states that policies are the operational statements of values and statements of prescriptive intent. *Oxford Dictionary* describes policy as "a course or principle of action adopted or proposed by an organization or individual." To summarize, it can be said that policies:

- State matters of principle (values, moral norms, ethical principles)
- Are prescriptive/guiding and focus on action
- Are authoritative statements

The last point refers to the fact that in order for a policy to be efficiently converted into action, it must be stated authoritatively. If a policy has no authority or is poorly legitimized, it cannot be expected to be implemented effectively. One way of legitimizing policies is to consider inclusive procedures during the process of policy-making (Röcklinsberg 2006), which belongs to the area of procedural ethics.

Development and Extent of Food Policy

With this understanding of the concept of policy, attention can be turned to *food policy*. Like any other policy, food policies state matters of principle and focus on prescription and action. This entry addresses the link between food policy and ethics and the question is therefore what are these matters of principle in food policy?

Food policy is not a recent term but a term with a history and therefore also a term with different meanings in different periods and different areas. Subscribing to a very broad understanding of the term policy, it can be assumed that most cultures in the history must have had some sort of food policy. Most societies, present or historical, do have principles about food and do take action to ensure that these principles are followed. Principles about food may, for instance, be based on religious, ethical, or economic principles.

In this sense, the idea of food policy has always been there even though it might not have been called food policy. However, both during World War I and World War II, the term food policy was much debated in public in the light of the restricted food supplies. Focus was on how to increase food supply. Food policy at that time was thus mainly an agricultural policy whose main principle was to ensure an efficient food supply to the population. Action was thus directed towards improving farming practices.

This understanding of food policy as an agricultural policy remains more or less unchallenged until the 1970s. The subsequent development of food policy has been subject to different interpretations. Maxwell and Slater (2003) goes as far as pointing to a shift of paradigmatic character in food policies, although this does not happen overnight but gradually over many years. They refer to an “old food policy” and the need for a “new food policy.” Whereas the old food policy focused on agriculture and rural areas, the new food policies place more emphasis on food consumption, health, and environmental issues. The shift in food policy is thus a focal switch from food supply to food demand (Maxwell and Slater 2003, pp. 532–534).

Their distinction between old and new food policies has been criticized by Lang et al. (2009, p. 8) for not doing justice to the extent of the policy challenge and thus being too simplistic. They argue for a more nuanced division of food policy into four periods starting from the 1950s that reflects how food policy is at first concerned with first food supply and what they call productionism; then, food policies focus on markets and third world development in the 1970s; from 1980 to 2000, environmental issues and food safety increasingly enter the food policy scene; and finally from 2000 and onwards, focus turns towards ecological public health. This development of food policies reflects different ethical concerns present in different periods. Today, it is fair to say that all concerns are present within food policy discussions.

Debate on food policy takes place in different arenas and focus varies accordingly. Compared to the historical outline above in a development and third world perspective, focus has been and still is mainly on food security and nutrition security. Food policy in the development context is marked by the founding in 1975 of the *International Food Policy Research Institute* (IFPRI) devoted to end hunger and malnutrition, and later, the Indian economist Amartya Sen (1981) gained international recognition for arguing for poor citizens’ entitlement to food due to their vulnerable position in society. It is also in the early 1970s that food policy emerges as scientific field evident, for example, by the launching in 1975 of the academic journal *Food Policy*.

Thus, in the 1970s and 1980s, food security mainly became an issue discussed in relation to the third world, starvation, and poverty reduction (Timmer 2001). In the developed world as shown above, the shift in food policy is indeed a turnaway from food security and self-sufficiency that dominated the war periods and continued into the 1970s. Indeed, the issue of food security is taken for granted and considered as one of the successes of a market-oriented and (over)-efficient agricultural and food processing sector which has led to an overabundance of foodstuffs. This in turn results in new threats to health (like obesity and the associated diseases),

and most recently also, the threats of food production and consumption to climate change are being recognized.

The shift in food policies is also mirrored in the renaming of ministries of agriculture to ministries of food and thereby underlining the move from the agricultural perspective to the consumer or demand perspective. Part of this change also reflects other social changes, for instance, there has been a massive migration from rural areas to urban areas. On a more operational level, public food policies are in some countries mainly gathered in one governmental department (e.g., Germany and Denmark), whereas food policy relating to food safety and food production in, for example, the UK has been separated with reference to conflicting interests. Food policies are communicated by institutions in a number of ways like food policy documents, food regulations and laws, food certification schemes, advertisements, food procurements, etc.

In the light of the enormity and complexity of food policy, it can be debated if food policy should be divided into core areas that directly apply to food and those concerned with derivative or interrelated issues like health and environmental issues. Core areas that apply directly to food would typically be food production/supply or novel food. However, on closer inspection, the interrelatedness of these two issues with the demand side shows that, for instance, consumer health cannot be neglected in reflecting on how food supply and novel food should be developed and regulated.

It can likewise be debated whether food policy is to embrace other policy domains or if the other way around other policy domains should incorporate food issues into their policies. This may lead to controversies on the organizational structure and fights over policy domains in policy-making institutions.

Today, still broader and more integrative approaches to food policy are being proposed; an increasing number of areas are considered to be part of or incorporated into food policies. For the reasons outlined above, that food policy is an ambiguous concept. Recently, the education

sector has been included in food policy, the aim being to promote basic food literacy and skills (see, for instance, *Public Health Association of Australia* [2009]) as part of a strategy to promote health. Also, climate changes have in recent years been introduced as a major element in food policy. Lang et al. (2009, p. 21) emphasize the embrative character of food policy, which makes it difficult to make a simple and concise definition of it. To simplify matters, at least 10 major traditional policy areas related to food policy can be identified:

- Research policy
- Agricultural policy
- Security policy
- Consumer policy
- Health policy
- Educational policy
- Environmental policy
- Trade and industrial policy
- Development and aid policy
- Transport policy

Efforts to Define Food Policy

The rapid changes in what is to be understood by the term food policy and the interrelatedness of the term have caused ambiguity as to the content and aim of food policy. Conceptual opacity is especially of concern for those involved in food policy-making. Clearly, one must know what food policy is about to make one. For this very practical reason, the challenge of defining food policy is most frequently undertaken by institutions involved in policy-making and less by researchers in academia. Chambolle (1988) refers to a *French Interministerial Group for Food Policy* set up in 1978 by which food policy was defined as the crossroads of problems linked with:

- Quantitative and qualitative adoption of agricultural production and food processes to meet the needs of well-balanced diets
- Food regulations intended to provide safe foods at value for money prices
- Distribution of food supplies, at both national and international levels

- Planning of research in agriculture and food processing, as well as in nutrition and food toxicology

This somewhat prescient understanding of food policy presents an embracive approach in which food policy includes agricultural research and production, food processing, healthy diet, food security, food safety, and affordability. Strictly speaking, in the sense that policy is used here, it is not a policy (principles and actions) but a list of areas that food policy applies to. Chambolle (1988, p. 456) also refers to the definition by the *Organisation for Economic Co-operation and Development* (1981) who in their report *Food Policy* states that “the term food policy . . . regards the food economy, which takes account of the interrelationships within the food sector and between it and the rest of the national and international economy.” From these two efforts to define food policy, it can be concluded that very early on in the transition of food policy, there was an awareness that food policy touched upon numerous issues and was interrelated with other policy domains that contributed to the complexity of food policy.

Apart from the increasing awareness of the interrelatedness of food policy with other policies, some authors also point to societal changes as drivers in the shift in focus of food policies. Timmer (2001, p. 787) mentions three social changes with an influence on food policy:

1. Globalization and the associated commercialization. For instance, the upcoming of super-markets and the changes it leads to on the food market.
2. Urbanization leads, for instance, to a more profound split between food production and consumption and increased food miles.
3. The technological development. New technologies like the biotechnologies pose new bio-ethical questions with importance for food policy.

However, some efforts to define food policy do not directly embrace the inclusive approach but point to a more narrow focus on food. Neil D. Hamilton (2002) describes food policy as “any decision made by a government institution which shapes the type of foods used or available – as

well as their cost, or which influences the opportunities for farmers and employees, or effects the food choices available to consumers.” In the same line, the *State and Local Food Policy Project* (2005) suggests that food policy is “any decision made by a government agency, business, or organization which affects how food is produced, processed, distributed, purchased and protected.” In these two definitions of food policy, emphasis is put on decisions by a government that exercises an influence on production, handling, and consumption of food whereas less importance is attached to the interrelatedness with other policy areas.

A final understanding of food policy to be mentioned here is that of Lang et al. (2009) which states that “we can define the study of food policy as of how policy-making shapes who eats what, when and how; and of whether people (and animals) eat and with what consequences.” They continue to describe the remit of food policy, which “ranges from how food is produced and grown, to how it is processed, distributed and consumed; from the structures that shape food supply, to those that determine health and environment; from the sciences and processes that unlock food’s potential, to the formal governance and lobbies that seek to control it; from the impact the food system’s dynamics have on society, to the way its demands are factored into policy-making itself.” In this understanding, emphasis is on the consequences of food policy for everyday life of food producers, handlers, and consumers as well as on the more systemic interrelatedness of food policy to other policy areas.

Major Matters of Principle in Food Policy

Given the long list of topics and goals that food policy embraces, it is not surprising that the list of ethical ideas and principles in food policy is quite extensive. It is not surprising that is not a common custom explicitly to supplement food policy goals with descriptions of basic ethical ideas and principles that these goals are based on. However, this is what this last part intends:

to mention major ethical ideas and principles essential to food policy issues and goals.

Food security: The Universal Declaration of Human Rights states in article 25: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food” Food security concerns the demand side (consumers) and is based on vulnerability and integrity as the basic ethical principles. Rendtorff and Kemp (2000) argue that bioethics and biolaw in a modern welfare state are based on four ethical principles that are linked to each other in a social framework of solidarity and responsibility. These four principles are the ideas of autonomy, dignity, integrity, and vulnerability. Within food security, the most important principles must be those of integrity and vulnerability. Concern about integrity is not only care for a person’s virtuous character but for the coherence of the life of that human being (Rendtorff and Kemp 2000, p. 39). Therefore, it includes both a psychological and a corporal dimension and the corporal dimension concerns “my own body.” This dimension is vulnerable: the human being is vulnerable in the sense that it can be hurt and submitted to risks that threats its integrity. Thus, the principle of vulnerability imposes an appeal for the protection of the human person’s integrity in a life span and a life space.

Therefore, the concepts of integrity and vulnerability are fundamental to legal systems protecting the rights of citizens. *Codex Alimentarius* (1979) states that “food purchases utilize a significant portion of the income of consumers, particularly low-income consumers, who often also represent the most vulnerable group and from whom the ensurance of safe, sound and wholesome food and protection from unfair trade practices is critical.”

Diet-related diseases: Food safety and nutritional behavior both focus on the risks of eating (see, for instance, Nestle [2002]). Food safety is based on the idea of the vulnerable consumer/citizen (Sen 1981). A more recent concept is that of nutrition security. Nutrition security exists when a person has a nutritionally adequate diet for an active and healthy life. The problem can be

both lack of nutrients and access intake of nutrients. Also here, the principle of vulnerability is essential when protecting citizens and consumers from malnutrition. In the case of overnutrition like obesity, debates are among others on whether to blame the food industry or the individual. Proponents of the latter position argue with reference to the individual’s autonomy that the individual’s capacity for self-determination makes him- or herself responsible for the diet, whereas proponents of the first position argue that choice of diet is not an autonomous act but it is coerced by, for instance, the food industry, supermarkets, culture, etc.

Also here, the idea of vulnerability invokes responsibility as a virtue and obligation. The EU food law (2002) places the primary responsibility for ensuring compliance with food law, and in particular the safety of the food, with the food business.

Food and consumer choice: The idea of a free market and more recently the notion political consumerism both point to the influence of consumers on the food market and food production practices. A central ethical principle at stake here is that of autonomy.

Individual autonomy is a complex concept that refers to the capacity to moral insight and to self-legislation. It also refers to decision-making without coercion as well as it invokes the idea of certain responsibilities. The right of consumers to make free choices is based on the ideas of autonomy and freedom (Coff 2006, p. 181, Mephram 1996), which calls for increased transparency and traceability in the food sector (Coff et al. 2008). Respect for autonomy is partly reflected in *Codex Alimentarius* (1979), which states that “no food should be in international trade which, is labelled, or presented in a manner that is false, misleading or is deceptive.” Respecting citizens and consumers autonomy in practice is dependent on the existence of a procedural ethics or discourse ethics that ensures citizens’ access to information and to participate at some level in policy-making.

Food research and production: Respect for living beings: Food and agricultural research must like all research comply with standard ethical research principles like informed consent

(based on disclosure, understanding, voluntariness, competence, and consent), data protection, and nonmaleficence (avoiding causing harm).

Informed consent presupposes both cares for autonomy and integrity, and therefore, integrity is mentioned in the second medical Helsinki Declaration that claims that “integrity must always be respected.” Moreover, integrity is also a basic ethical principle in both food research and production as well as in the argument for the protection of animals and nature.

Food and environmental sustainability: Food policy has a strong link to environmental sustainability as food production is a heavy polluter and makes use of energy for production and transport (food miles). Beder (2006) presents the six major ethical principles within environmental protection that also apply to food policy: environmental sustainability, the polluter pays principle, the precautionary principle, the equity principle, the human rights principles, and the participation principle (procedural ethics).

Food and social justice: Codex alimentarius (1979) states that consumers should be protected from unfair trade practices. Fair trade is a concept that places social justice in a key position. Justice can be understood as a concept of moral rightness that focuses on fair distribution of benefits, risks, and costs without discrimination.

Summary

This entry gives an overview of food policy and major ethical principles that in the last decades have been proposed and advocated for in debates on food policy. Food policies touch upon a vast area of interrelated policies (like health, transport, environment, poverty, animal welfare, etc.) which makes of food policy a highly complex and diverse area. The entry opens with a description of the concept of policy and food policy and how it relates to ethical principles and values. The fourth section discusses some influential definitions of food policy. The final section contains a description of ethical principles and ideas of relevance to food policy.

Cross-References

- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Environmental Ethics](#)
- ▶ [Food and Health Policy](#)
- ▶ [Food Safety](#)
- ▶ [Food Security](#)
- ▶ [Human Rights and Food](#)
- ▶ [Political Consumerism: Consumer Choice, Information, and Labeling](#)

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Food in Ancient Indian Philosophy

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Synonyms

Breath; Elements; Food cycle; Hospitality;
Hunger; Indian philosophy; Natural philosophy;
Vedas

Introduction

Ancient Indian natural philosophy of the Vedas offers a unique mythico-philosophical perspective on the role of food in nature, society, and the cosmos. In early Indian philosophies, food (anna) and breath (prana) are of a vital importance for the microcosmic (the body) as well as macrocosmic (nature and life cycle) “deities” or realities. In addition to their relevance for various disciplines of the body (e.g., yoga and vegetarianism), ancient Vedic teachings on food can also substantially inform contemporary environmental philosophy and ethics of hospitality.

Food in Ancient Indian Philosophy

For the Vedic philosophers, or the tradition of Vedism/Brahmanism, there existed five originary elements of the world: earth, water, fire, air, and

ether (Aitareya Upanishad III). Given the natural relation between “food” (anna) and “eater” (attr), some Vedic philosophers included food among the originary elements and even attributed a primary role to it.

The Book XI of the Śatapatha Brahmana (Eggeling 1993) brings the legendary story of Bhrigu, the son and pupil of god Varuna. Being too proud and too confident, Bhrigu was sent to the jungle by his father. As Bhrigu looked to all four directions, he experienced horrible scenes of cannibalism, men dismembering men and eating their limbs. Upon his return to his father, Bhrigu receives Varuna’s explanation: what he has seen were scenes from the yonder world, where men were representing angry souls of plants, trees, and animals, all of them seeking reward for being eaten and destroyed in their worldly lives. Bhrigu thus receives from Varuna a teaching about the interconnectedness of all of the living; he is instructed that the whole universe is nothing but the food. But at the same moment, the story of Bhrigu is also an early testimony for a deeper sacrificial awareness – not yet about vegetarianism, but about the elemental meaning of food and a lesson about the deeper meaning of food sacrifice (Ruben 1947). Later, this will lead to new ethical awareness, as exemplified in the teachings of Buddhism and Jainism and the traditions of vegetarianism in Hinduism.

In Taittiriya Upanishad III, there is another version of this legend. Bhrigu now learns the doctrine about Brahman and food. According to Varuna, Brahman is food, for it is from food that beings are born, on food they live, and to food they pass upon death. Given the Vedic meaning of Brahman as mysterious power of poetic formulation, or truth formulation (and later, in Vedanta, the absolute), and equating it with the food, Bhrigu is finally instructed by Varuna to practice austerities.

In the early Upanishads, food is recognized both as an originary material and as a spiritual substance: for TU II man is formed from the essence of food. Food is here listed among the other elements (space/ether, air, fire, water, earth) and worshiped as the highest of all, as Brahman itself. The poetic verse reads as follows: “From

food, surely, are they born;/all creatures that live on earth./On food alone, once born, they live;/and into food in the end they pass./For food is the foremost of beings,/so it's called 'all herbs'./All the food they'll secure for themselves,/when they worship *brahman* as food/" (Olivelle 1998).

The oldest among the Upanishads, the pre-Buddhist Brihadaranyaka Upanishad (BU) from the seventh to sixth centuries BCE lists seven kinds of food, being created by the father of the gods, Prajapati. Among the various foods given to the creatures, milk is of the foremost importance. Next, by following the Upanishadic teaching and by the means of the daily sacrifice, the sacrificer who knows this (in famous Upanishadic phrase, "ya evam veda") and follows this ancient teaching – i.e., the sacrificer which firmly establishes himself/herself in a Person/Creator – also knows the inexhaustible spiritual origin (food) of everything and thus receives the inexhaustible amount of (material) food. Here, it is clearly stated how the food serves as both a material and spiritual basis of all. Food and liturgical acts (rituals, including various daily practices) are thus interdependent and have ethical consequences.

Vedic god Prajapati used wisdom and "heat" (tapas, or "ascetic ardor") in his creative process. The same is expected from the humans when they imitate the creational and sacrificial acts of god(s). In the beginning of the BU, there is a story about two primeval deities: Death (Mrityu, m.) and Hunger (f.). From Death emitted water, then it solidified into earth, and from the heat (tapas), emitted in this process, fire was created. Air is also added to the elements. Mrityu began to eat everything he created, and thus, he becomes the eater of this world and the entire world is his food (Olivelle 1998).

Finally, there is another important correlation, namely, between food and breath (prana). In the BU V, both "Brahman is food" and "Brahman is life breath" are uttered by the Vedic philosopher. But food and breath (air) are closely interdependent. In a story about Pratrīda and his father, Pratrīda is instructed about reaching the preeminence as follows: all beings need food, and all beings likewise need (life) breath. This ancient

Upanishadic teaching of the elements of food and air suggests that bodies subsist on a hidden cosmic or empirico-metaphysical *reserve* of food and cosmic wind, or breath. The ancient "wind-breath doctrine," as present in the early Upanishads, strongly attests for this phenomenon (Boland 1997). Finally, the whole universe is nothing but the food. In his substance, man is now identical to the metaphysical food, or Brahman, the first and ultimate creator and consumer of everything (Geib 1976). As later exemplified in Maitrayani Upanishad VI (this Upanishadic text already refers to the teachings of Samkhya-Yoga), the whole universe is dualistically split between Purusha and Prakriti, as Eater and Food (Deussen 1938).

Another of the key early Upanishads, Chandogya Upanishad VI, reveals a cosmogonical story, closely related to food: in the beginning this world was one, without the second. In the process of becoming many, this primeval Being first emitted heat and then water (as a result of this cosmic perspiration), and finally, from the rain, it emitted food. Important teachings on the essence of food can be found also in Aitareya, Kaushitaki, and Mundaka Upanishads. Aitareya Upanishad I brings a cosmogonical story about hunger and thirst, which both affected the "deities" (i.e., various micro- and macrocosmic realities: human body and the cosmos). Immediately after they were created/emitted from the Self (atman), they fell into the cosmic Waters/Ocean. From these waters, food was created for them by this Self.

Food and Hospitality

Chandogya Upanishad (CU) VI (Ranade 1986) brings a teaching of Śvetaketu Aruneya, son of the famous Vedic sage Uddalaka Aruni. Part of this teaching is a philosophical discussion, or the Upanishadic doctrine on the beginning of the world and emitting of heat, water, and food from the primeval One, or Being. A reader of CU thus learns that everything in the world consists of heat (tejas), water (apas), and food (annam), i.e., three of the later five Upanishadic

elements. These three elements now build, or enter, as it were, the human body: heat becomes speech, water becomes breath (prana), and food becomes the mind (manas). But then Śvetaketu is taught about the nature of food and the relevance of eating. Aruni instructs his son not to eat for 15 days. After fasting for 15 days, Śvetaketu returns to his father and he is further ordered to recite the Vedas, but cannot fully remember them. The Upanishadic teaching thus shows how the human mind is essentially made up of food and how its cognition and memory are weakened without this vital element. But it is only later, namely, in the Taittiriya Upanishad and Kaushitaki Upanishad, that an ethical relevance of the doctrine of food can be observed for the first time.

As already shown, Taittiriya Upanishad (TU) brings a story about Bhrigu practicing austerities in order to learn about the Brahman. But in a contrast to his practices, Bhrigu is also instructed not to belittle food, not to reject food, and to prepare a lot of food – for everything in this world is based on food and man is firmly established only through food. This refers to cosmogonical contexts and thus to the cosmic or metaphysical level of thinking about the food. But TU III is also practical and concludes with a new ethics of food. According to this doctrine, no one should ever turn anyone away from one's home without giving him the food. This is the Upanishadic vow of hospitality.

Kaushitaki Upanishad II brings a more explicit instruction on food and hospitality. A beggar, praying in a village, utters a vow: "I'll never eat anything given from here" (Olivelle 1998). He then receives plentiful invitations (food) from the people. This teaching is a part of a teaching of the Upanishadic teachers Kaushitaki and Paingya; they both famously identified Brahman with breath. Now, in the Upanishadic teaching, giving alms is identified with giving offerings to breath. Namely, in Vedic thought, breath is the "best" among the five vital powers (hearing, sight, speech, thinking, breathing; in the Vedic Sanskrit, they are called "breaths" – after the first of them, breath). In CU VI, three main vital powers (thinking,

breathing, and speech) arise from food. Both breath and food thus essentially and fundamentally refer to "life." Four vital powers give offerings to breath, without being asked. This is now an act of primeval hospitality, as exemplified in this secret teaching (Upanishad). Nourishing vital (cosmic) breath, on a (micro)cosmic level, means being hospitable to the gift of life; giving food, or inviting the beggar to a house and nourishing him or her, equally means to practice hospitality on a practical – i.e., ethical – level.

In the Book VIII of Śatapatha Brahmana, whatever evil there was, Prajapati had the power to drive it away by means of food, or sacrifice. The same was true for humans. Ultimately, all is food and eater in the circle of life – both in cosmico-sacrificial and in earthly practical domain, this precious gift of life is thus preserved with an act of a primeval hospitality. It is offered equally by gods and humans by ritualistic means and, ethically, by means of everyday rituals, such as various offerings (food, attention, later in Buddhism mindfulness) to beggars and strangers or all of them needing help and assistance.

Summary

In the ancient Indian philosophical traditions, we learn about the interconnectedness of everything. Food as an element has a deep philosophical as well as ethical relevance in the Vedic thought. It is both a material and spiritual substance of the world. Ancient Indian philosophy of the Upanishads closely relates food to breath. They both are of a vital importance for the life of a cosmos as well as of an individual. The Upanishadic teaching of the elements of food and breath suggests that "all this" (idam sarvam) subsists on a hidden metaphysical and empirical reserve of food in us. Food is the foremost of beings, as attested in verses from the TU II. Finally, food is also related to the emergence of hospitality in ourselves which, ritually and ethically, reveals as a vehicle of preserving life of the cosmos and life of all of the worldly creatures. It is in this hospitality that a sacrificial and sacred gift of peace can be revealed.

Cross-References

- ▶ [Environmental Ethics](#)
- ▶ [Hinduism and Food](#)
- ▶ [Hospitality and Food](#)
- ▶ [Plato and Food](#)
- ▶ [Vegetarianism](#)

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Food Labeling

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Synonyms

Codex Alimentarius; Food information; Marketing; World Trade Organization (WTO)

Introduction

The Roman town Pompeii was famous for its garum, a type of fish sauce. In one of the shops where it was sold, archaeologists have found a jar marked “kosher garum.” It must have contained garum prepared according to Jewish rules, excluding shellfish and other nonkosher ingredients (Berdowski 2006, p. 249). Obviously, it was

labelled because it would otherwise have been difficult to distinguish from a nonkosher garum. In modern terms, being kosher was a *credence attribute* of the fish sauce. By this is meant that the customer herself could not determine whether the garum had the attribute or not; she would simply have to rely on the merchant.

Today, food labelling is much more common than in the Roman era. One reason for this may be that consumers are now more concerned with credence attributes of food. Another plausible reason is the increasing length of food distribution chains. Information easily gets lost somewhere on the road from the farm to the modern grocery store, and the modern urban consumer may not know much about how food is produced.

In addition to credence attributes, foodstuff has two other major types of attributes, namely, search attributes and experience attributes (Nelson 1970; Darby and Karni 1973). A *search attribute* is one that consumers can determine before buying. One can for instance find out the ripeness of fruit or the freshness of bread by squeezing them. An *experience attribute* is one that consumers can only determine after buying the product. A typical example is the taste of meat or fish. Credence attributes are those that the consumer cannot even determine after buying the product. One can divide credence attributes into two subcategories. A *detectable credence attribute* is one that can be detected for instance by chemical or bacteriological analysis although it cannot be detected by the ordinary consumer. Nutritional value and absence of pesticide residues are examples. An *undetectable credence attribute* is one that cannot even be detected through laboratory analysis. Country of origin, worker's health and safety in the production, animal welfare, and many environmental aspects of the production belong to this category.

The need for labelling is greater for experience and in particular credence attributes than for search attributes. From an economic point of view, labelling can be justified as a means to reduce the information asymmetry between buyer and seller. From an ethical point of view, it can be based on the idea of the consumer's right to information.

Labelling can be either compulsory (legally required) or voluntary. Compulsory labelling is one of several methods in the arsenal available to regulators. Alternative methods include prohibition of products or production methods, liability legislation, and prohibition of certain messages on products such as false ascriptions of origin or unsubstantiated health claims. Voluntary labelling is primarily used as a means for companies to inform consumers of desirable product properties that are not subject to compulsory labelling. Voluntary labelling tends to have problems with its credibility. Certification schemes managed by credible, independent organizations have been used to solve the credibility problem of voluntary labelling.

Whereas mandatory food labelling has a strong focus on health-related issues, voluntary labelling schemes refer to much wider concerns. This should be no surprise, since food is much more than nourishment. Food choices are an integral part of many people's religious identity. They can also be expressions of cultural or family traditions. Increasingly, they are expressions of political standpoints in issues such as environmental policies, animal welfare, and workers' rights. Food has a role in expressing social and individual identities, and food labelling can help enable individuals to make the choices they want in these respects.

A distinction is commonly drawn between positive and negative labelling. Positive labelling reports the presence of an ingredient or an attribute ("enriched with vitamin C") whereas negative labelling reports its absence ("no added ascorbic acid"). The distinction between positive and negative labelling is fairly clear for specific ingredients, but less so for other attributes since one and the same attribute may be described in either positive or negative terms. ("No imported ingredients." "All ingredients are from Swiss farms.")

Below, current labelling regulations will first be described, with an emphasis on international agreements. A brief section reports some results on the effects of labelling. This is followed by three sections discussing major ethical problems in food labelling, namely, arguments for and

against labelling, the choice between mandatory and voluntary labelling, and finally the ethical choices of the food industry.

Current Food Labelling

Food labelling is decided in national (and European) legislation, but it is strongly influenced by an international framework that has been developed within the World Trade Organization (WTO) as part of its efforts to reduce nontariff barriers to trade. The WTO labelling rules are administered within two agreements, that on the Application of Sanitary and Phytosanitary Measures (SPS) and that on Technical Barriers to Trade (TBT). The SPS is devoted to risks to the health of humans and animals and the protection of plants against pests and diseases. The TBT deals with non-health issues such as fraud and misrepresentation.

The SPS provides minimal standards for health-protective labelling. Countries are allowed to adopt higher standards than those of the agreement, but only if these standards are based on scientific risk assessment and constructed to have as small impact on trade as possible. Decisions on what counts as science-based in this context are made by the Codex Alimentarius Commission that has been set up jointly by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

The TBT agreement regulates labelling requirements on imports. It stipulates that such requirements "shall not be more trade-restrictive than necessary to fulfil a legitimate objective." The European Union has used this agreement to protest against the United States' mandatory nutrition labelling, whereas the United States has used it against the European labelling requirements for genetically modified foodstuff.

Generally speaking, labelling requirements apply only to prepackaged food products, not to restaurant food. In what follows, some of the more common labelling requirements are summarized.

Ingredients: Major labelling systems such as those of the EU and the United States require that

all ingredients be listed in decreasing order of weight. Certain allergenic food components have to be mentioned even at low doses, and even the risk of inadvertent contamination with an allergen due to the use of common processing equipment has to be stated.

Nutrition labelling is mandatory in most industrialized countries, with the exception of the European Union where it will only become obligatory in December 2016. Voluntary labelling of products that are healthy alternatives within their category (such as low fat sauce and high fiber bread) is promoted by several national European authorities.

Major legislations have a restrictive approach to *health claims* on food packages. Hence, the European legislation requires that health claims be based on reliable scientific evidence. Currently, this policy is put to test by the increased popularity of so-called functional foods that are marketed as health promoting (e.g., lowering total cholesterol or decreasing the risk of cancer) (Klompenhouwer and Van Den Belt 2003; Eden 2011).

Geographic origin labelling is usually not compulsory, but in the United States, country of origin labelling (COOL) is obligatory for fresh meat, fish and shellfish, fruits, vegetables, and nuts. This regulation was challenged by Canada, and in 2011, the WTO ruled in Canada's favor. The European Union has a system of protected geographic indications. Hence, cheese can only be named Gorgonzola if it was produced in a specific region in northern Italy, and Champagne has to be produced in the Champagne region in France (Cheftel 2005).

Irradiation is used to eliminate disease-causing organisms from certain foods. Labelling of irradiated food is mandatory both in the United States and the European Union. Since the authorities consider irradiated food to be safe, such labelling has the sole purpose of furthering the consumers' free choice.

Labelling of food with *genetically modified components* is mandatory in the European Union, Australia, New Zealand, and Japan but voluntary in the United States and Canada.

Organically produced food, i.e., food produced according to certain rules excluding synthetic pesticides and chemical fertilizers, is subject to voluntary labelling schemes controlled by certification bodies. In addition, both the United States and the European Union have regulations stating which products can be marketed as organic.

Religious requirements on food production such as the Jewish Kashrut (kosher) and the Islamic Halal are in most countries subject only to voluntary labelling. (Israeli law prohibits the import of nonkosher food.)

Environmental effects of food production are subject to many voluntary labelling schemes, usually run by certifying agencies, many of which are connected with environmental NGOs. In most industrial countries, there are several competing such schemes, with various and not always transparent criteria.

Social responsibility in food production: The fair trade movement that formed in Europe in the 1960s imported food and other products from third world producers for sale in specialized shops. The purpose was to treat farmers and workers more fairly than what conventional companies do. Beginning in the 1980s, the main focus has shifted to labelling schemes that allow mainstream retailers to sell fair trade goods from third world producers. Voluntary labelling schemes promoting corporate social responsibility have had a central role in this development.

Animal welfare is subject to voluntary labelling in many countries, often as part of environmental or social responsibility labelling schemes.

Effects of Food Labelling

There is extensive evidence showing that nutrition labels make consumers choose more healthy food. Unfortunately, it is not clear whether such effects are to some extent counteracted by compensatory consumption of other, less wholesome food. Do people add sugar or fat to increase the palatability of whole grain food? Or do they eat more of the (still rather unhealthy) reduced-salt snack than of a fully salted snack? The effects of

nutrition labelling on total food intake are not known, and it is the total intake that matters.

Food labelling can also have effects on the behavior of producers. In the United States and Canada where labelling of genetically modified contents is voluntary, GM content is almost invariably unlabelled so that these products cannot be identified by consumers. In these countries the majority of items sold in grocery stores contain genetically modified ingredients. In Europe and Japan that have mandatory labelling schemes, food retailers have decided not to sell GM products and therefore such products are virtually nonexistent. Similarly, in several countries requirements to label trans fat contents have induced industry to reformulate their products so as to avoid labelling that may have negative effects on sales.

Arguments For and Against Food Labelling

The primary purpose of food labelling is to make the consumer more well informed. This can be justified with economic arguments, since markets function better if buyers and sellers have the same information. It can also be justified with ethical arguments such as arguments to the effect that the consumer has a right to the information needed to make well-informed choices according to her own criteria. Such a right to know would presumably not be restricted to health-related issues but could extend to other concerns such as animal welfare, environmental effects of food production, working conditions of farmworkers, etc. Consumers may very well end up making different choices based on a much wider array of considerations than those that food authorities pay attention to – and this rightly so since the authorities have a limited mandate.

Like all safety legislations, food regulation is subject to the potentially conflicting demands to protect the public and not to restrict their freedom of choice. Prohibitions or other measures against unhealthy foodstuffs are often accused of being paternalistic, i.e., reducing people's freedom for their own good. Contrary to some other

regulatory measures against unhealthy food, mandatory labelling would seem to be immune against accusations of paternalism. Labelling does not restrict consumers' freedom of choice but instead provides them with information that they can use if they so wish when exercising that freedom of choice.

Some libertarians have claimed that mandatory labelling is an indefensible restriction of the producers' freedom of expression. However, although this argument has often been heard from tobacco companies, it has seldom been voiced in discussions of food labelling. Freedom of speech, as it is commonly conceived, does not exclude a duty to disclose information about the properties of a product to prospective buyers. In his *On Liberty* (1859, Chap. 5), John Stuart Mill argued that mandatory labelling of drugs does not violate liberty: "Such a precaution, for example, as that of labelling the drug with some word expressive of its dangerous character, may be enforced without violation of liberty: the buyer cannot wish not to know that the thing he possesses has poisonous qualities." The same argument would seem to apply to food labelling.

Some types of labelling requirements have been criticized on the ground that consumers tend to misunderstand or misinterpret the information. This has particularly often been said about labels referring to irradiation or GM content. These are attributes that have caused much more worry among the general public than among experts on food safety and nutritional value.

There are two fundamentally different ways to see this from an ethical point of view. The consumers' right to know can be seen as valuable in itself, or it can be seen merely as a means to promote the right choices. According to the former viewpoint, mandatory food labelling can be defensible even if it makes consumers avoid healthy food that they wrongfully believe to be unhealthy. According to the latter view, such labelling would be difficult to defend.

The use of labelling to solve problems in food production has also been criticized from a quite different perspective: labelling can be a way to shift responsibilities away from authorities and producers to consumers. If the aim is to avoid the

cardiovascular diseases that trans fat gives rise to, why not just regulate fat composition in foodstuff instead of introducing labelling that shifts the responsibility to individual consumers? Since trans and non-trans fat taste the same, no plausible consumer interest in retaining the trans fat alternatives seems to be present (Resnik 2010). Similarly, if the aim is to avoid cruelty to animals, why then leave it to individual consumers to choose between foodstuff produced with and without such cruelty, instead of just outlawing the inhumane practices? If the aim is to reduce the negative environmental effects of farming, why not use more direct means than consumer choices of farm products? Labelling and consumer choice is only one of the strategies available to regulators, and in some cases, using this instead of other strategies has ethical implications that have not been sufficiently discussed.

Mandatory or Voluntary Labelling

One of the most contested issues in food labelling is the choice between mandatory and voluntary labelling. The critical issue is whether labelling should be mandatory for attributes that some but not all consumers wish to take into account in their food choices. In most countries the presence of allergenic components has to be labelled, and consumers can expect products without such labelling to be free of the common allergens. On the other hand, there is no requirement to reveal the use of synthetic pesticides. Consumers wishing to avoid pesticide-treated foodstuff have to look for food with (voluntary) labelling indicating that no pesticides have been used.

For discussing the choice between mandatory and voluntary labelling, it is useful to divide consumer concerns into three categories:

1. Consumer health-related concerns that are supported by medical science
2. Consumer health-related concerns that are not supported by medical science
3. Concerns other than consumer health

Concerns in the first category are usually supported by mandatory labelling, even if only a minority of the consumers are affected as in the

example of food allergens. Concerns in the third category, such as animal welfare, environmental effects, the rights of farmers and farmworkers, kosher, Halal, etc., are seldom if ever supported by mandatory labelling. Some of these attributes, such as religious practices in food production, are usually considered not to be the government's business. Others, such as domestic animal welfare, concern issues where government has access to more direct means to impose its standards on food production.

Concerns in the second category are treated differently, sometimes inconsistently, by law-givers. The United States is an interesting example of this. The country has mandatory labelling of irradiated food but not of food containing genetically modified organisms. In both cases there is popular concern about potential health effects, but these concerns are not supported by the mainstream science that the authorities rely on. It can be argued in favor of mandatory labelling in such cases that consumers who wish to avoid these products should have a right to do so. Mandatory labelling facilitates the exercise of such a right. (This argument need not extend to concerns in the third category. Concerns for one's own health may be particularly worthy of respect even if they are not based on science.) A major counterargument against labelling for concerns in the second category is that such labelling systems are costly. They largely deal with undetectable credence attributes, and therefore a system for tracking the origin of raw material throughout the production chain is needed. Arguably, the costs for this should be carried by the consumers who ask for the information. (This argument need not extend to the first category of concerns. Contrary to a wish to avoid irradiated food, being an allergic is not a personal choice and therefore more suitable for public economic support.)

The current European legislation that requires labelling of GM foodstuffs has been challenged on two fronts. On one side, there are promoters of a health-centered labelling scheme who claim that since there are no known risks with GM products, labelling will mislead consumers to believe that there are risks when there are in fact none. On the other side, some discussants maintain that

since people may have reasons to avoid some but not all GM products, GM labelling should be more extensive and also specify the origin of the genes that have been transferred. An environmentalist may be against food produced from herbicide-tolerant plants with the help of herbicides. A vegan may refuse to eat vegetables that contain animal genes, a Muslim or a Jew food with porcine genes, a Hindu food with bovine genes, and Christian or secular Westerners food with canine genes. In order to make informed choices, they would all need to know more than just whether or not the foodstuff has been genetically modified (Siipi and Uusitalo 2008).

In the choice between mandatory and voluntary labelling, public expectations may have to be taken into account. In Israel and Saudi Arabia, it makes much more sense to conspicuously label pork than in countries where consumers wishing to avoid pork are used to reading through the fine-print contents list to make sure that no porcine ingredients are present.

Labelling Ethics from the Producers' Perspective

Both mandatory and voluntary labelling give rise to ethical issues for the producers and sellers of food. One of the most obvious ethical issues for food companies concerns the use of misleading or deliberately ambiguous information in labelling and – in particular – in off-label package texts and pictures. Some of the more prominent deceptive formulations are “evaporated cane juice” for “sugar” and “90 % fat free” for “10 % fat.” Pictures can be equally dishonest. Pictures of hens roaming free on a beautiful farmyard have been used on the package of products made from hens kept in battery cages. Pictures of cows in a Swiss landscape have been used to create the wrongful impression that a cheese is of Alpine origin. Many countries have legislation intended to curb such practices, but even with such legislation, much is left to the producing companies' choice of an ethical standard.

The assessment of health claims in marketing is often ethically intricate. On one hand, untruthful or

exaggerated health claims can seriously mislead consumers, and few health problems are solved by just choosing a single food product. On the other hand, nothing would seem to be gained by withholding information that can help consumers make more healthy choices. The strict restrictions against health claims in current legislations have been criticized for blocking information that could have contributed to saving lives (Adams 2010).

The “may contain” labelling of allergenic components poses an ethical dilemma for producers. Some producers provide such labelling to be on the safe side, even if the risk of allergen contents is slight (Mills et al 2004). It would seem difficult to blame an individual producer for doing so. However, if all producers use this warning profusely, then it may become so common on foodstuffs that allergic consumers may end up neglecting it, thus putting themselves at larger risk.

Voluntary labelling gives rise to a market for labelling schemes. Corporations can choose among NGOs and certifiers who offer different labels at different costs and with different requirements for the label. At least one large corporation supported the formation of an NGO whose labelling requirements coincide with its own interests (Renard 2010). On the market for labelling schemes, consumers who buy the products are a third party with in practice very little information on the meaning of the different labels. The difference between labelling systems can be substantial. One ecolabelling organization allows its label to be used on all products with at least 25 % ingredients that satisfy its certification criteria, whereas others have much higher requirements (Ballet and Carimentrand 2010). The lack of transparency in the market for ecolabels, fair trade labels, and other such certifications gives rise to legitimate worries whether some of these labels fully serve the ethical objectives to which they pay allegiance.

Summary

Food labelling aims at providing consumers with the information they need to make well-informed choices of food products. It is ethically highly

contentious which characteristics of food should be subjected to mandatory, i.e., legally required labelling. Currently, mandatory labelling systems have a strong focus on health-related properties such as ingredients and nutritional value. In some countries, qualities such as GMO and irradiation have been included due to consumer demand of such information. Voluntary labelling schemes tend to focus on a wider range of qualities that may attract various segments of the population, such as environmentally friendly production, fair trade practices, or compliance with various religious requirements on food production.

Cross-References

- [Fair Trade in Food and Agricultural Products](#)
- [Food Additives and International Trade](#)
- [Food Allergies: Ethical Issues](#)
- [Food Legislation and Regulation: EU, UN, WTO and private regulation](#)
- [Food Risk Communication](#)
- [Functional Foods, Marketing of](#)
- [GMO Food Labeling](#)

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Food Legislation and Regulation: EU, UN, WTO and Private Regulation

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Synonyms

Food governance; Food laws; Food standards; Regulating food safety

Introduction

In general, food laws relate to a wide and multidisciplinary range of issues including health and safety, composition, science, labeling, and advertisement, but also abstract concepts such as culture and tradition come into play. In addition, food laws are no longer the exclusive domain of the government and public authorities, but also involve the influence of private actors that increasingly contribute and shape the development of food laws.

The purpose of this entry is to provide an overview regarding the different layers of food legislation in the EU. In order to provide a full picture of the legislative background, the development and evolution of food laws have to be considered. Also, the international dimension of

food laws will be presented which in particular comprises international fora like the UN and the WTO. In the following, focus will be laid on the food laws of the EU by taking into account that the formation of EU food laws has been marked by different stages. The entry then refers to private food laws and standards emphasizing the integration of such standards with public law requirements. Finally, this entry will speak about the enforcement and controls of food laws.

Development and Aims of Food Laws

As indicated in a Codex Alimentarius Document (see FAO/WHO 2006), the emergence of rules concerning trade in foods dates back to ancient times. Early civilizations, such as the Egyptians, have rules in place determining the labeling applicable to certain foods. Also, the ancient Greeks and Romans have established food safety requirements. In antique Athens manufacturers followed certain standards when producing wine and beer. In Rome food has been controlled with the aim of consumer protection. Together with the development of separate countries in the Middle Ages, national legislation prescribing rules for the quality and safety of certain commodities started becoming more and more common. For instance, laws regulating beer purity were passed in Germany in 1516. In the nineteenth century, general food laws came into existence on the European continent. An example is provided by the Adulteration of Food and Drink Act 1860 adopted in the UK prohibiting sales of knowingly adulterated food or food consisting of harmful ingredients (MacMaoláin 2007). Another example gives the Austro-Hungarian Empire with its *Codex Alimentarius Austriacus* developed between 1897 and 1911. The said document embodied standards and product descriptions for a broad range of foodstuffs which had been used as guidance for courts. This still existing (also known as Österreichisches Lebensmittelbuch – ÖLMB) system can be regarded as a predecessor of the Codex Alimentarius. Importantly, with the rise of science in the nineteenth century, the discipline of food chemistry was

increasingly employed as an objective instrument for assessing food products' compliance with applicable rules (FAO/WHO 2006).

As indicated, the prime rationale for the establishment of law and rules for food is the protection of the consumer from unsafe, adulterated, and poor-quality products. The following section proves that these grounds serve still as the main objectives by current food laws and regulations. However – given the grown/growing globalized trade in food – focus is also laid nowadays on trade facilitation in the process of establishing food standards.

International Food Laws

United Nations (UN)

The International Covenant on Economic, Social and Cultural Rights (ICESCR) adopted by the General Assembly of the UN formulates economic, social, and cultural rights for the peoples. Notably, the multilateral treaty acknowledges the provision of food as a human right. In detail, Article 11 (1) of the ICESCR states that:

The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions [...]

The UN Committee on Economic, Social and Cultural Rights has elaborated on the meaning of this recognized right to adequate food. In accordance with the General Comment 12 of the Committee in 1999, this right involves the availability of a food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture.

Also, the UN Guidelines for consumer protection issued in 1985 and expanded in 1999 are of great importance as far as food safety is concerned. As it has been stated in Section 14 of the Guidelines, governments should intensify their efforts to encourage consumer organizations to monitor adverse practices, such as the adulteration of foods, false or misleading claims in marketing, and service frauds. Additionally pursuant

to the Guidelines, consumer education and information programs should cover health, nutrition, prevention of foodborne diseases and food adulteration, and product hazards and product labeling. Finally governments have been called to give priority to areas of essential concern for the health of the consumer, such as food, water, and pharmaceuticals. Policies should be adopted or maintained for product quality control, adequate and secure distribution facilities, and standardized international labeling and information, as well as education and research programs in these areas.

FAO/WHO Codex Alimentarius

UN-specialized agencies such as the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) have contributed to the development of international food law more specifically. This relates in particular to the creation of the FAO/WHO Codex Alimentarius, also referred to as the food code, in 1961. The conception of the code came partially in response to the increased need for harmonization of food standards in the view of differing domestic laws on foods acting as a barrier to trade. Consequently, Article 1 of the statutes of the Codex Alimentarius Commission enshrines the aim of protecting the health of consumers and ensuring fair practices in the food trade.

The Codex Alimentarius encompasses the formulation of international food standards, guidelines, and codes of practice that are achievable, taking into account the number and diversity of Codex members. In terms of content, standards developed under the Codex Alimentarius relate, *inter alia*, to the areas of food composition, codes of hygiene and technological practice, evaluation and limitation of the use of pesticides, and evaluation of additives and veterinary drugs. Furthermore, the food code lays down an international numbering system of food additives.

The importance of the Codex Alimentarius at international level is reflected in UN Resolution 39/248 which provides that national governments should to the greatest extent possible adopt standards from the Codex Alimentarius or from other

generally accepted international food standards when developing domestic food policies.

With reference to the individual instruments adopted under the Codex Alimentarius, "Codex Standards" may either refer to a specific foodstuff, as for instance the commodity standards on fruit juices or on milk and milk products, or may establish general standards as exemplified by the General Standard for the Labeling of Prepackaged Foods.

Codex codes of practice provide for production, processing, manufacturing, transport, and storage practices for individual foods or groups of foods. An essential code of practice developed by the Codex Alimentarius is the one on the General Principles of Food Hygiene which includes reference to the Hazard Analysis Critical Control Point system (HACCP) which constitutes the risk management method. Furthermore, the Codex Alimentarius has adopted the Code of Ethics for International Trade in Food establishing principles for the ethical conduct of international trade in food.

Other texts adopted by the Codex Alimentarius are Codex guidelines which can be distinguished into interpretative guidelines for the provisions of certain Codex standards and principles laid down for specific areas including risk analysis of foods derived from modern biotechnology or food import and export inspection and certification.

World Trade Organization (WTO)

International trading rules established by means of the various agreements under the World Trade Organization (WTO), namely, the General Agreement on Tariffs and Trade (GATT), the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs), the Agreement on Technical Barriers to Trade (TBT), the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), and the Agreement on Agriculture not only impact the global trading in food but also influence related legislation and regulations of WTO members.

Domestic laws regulating the labeling and packaging requirements of foods may obstruct international trade in foods. Equally, measures

adopted by countries in relation to guarantee safe food may also ultimately constitute barriers to trade when put in an international context. Against this background, the SPS and TBT agreement were signed by WTO members to reduce the impact of above mentioned measures on international food trade.

Importantly, the SPS Agreement provides for the right of governments to adopt sanitary and phytosanitary measures which are necessary for the protection of human, animal or plant life, or health. However, the agreement requires that measures in relation to food safety as well as animal and plant health standards must meet a certain level of scientific justification due to their trade-restrictive and protectionist character. The agreement further promotes the adoption of SPS measures on the basis of international standards, guidelines, or recommendations. Accordingly, the SPS Agreement refers to Codex standards for food additives, methods of analysis and sampling, contaminants, and codes and guidelines on hygienic practice.

The TBT agreement grants governments the right to adopt technical regulations and standards such as testing and certification procedures or labeling requirements as long as they do not constitute unnecessary obstacles to trade, and the measures pursue legitimate objectives as listed in the agreement as, for example, the protection of human health or animal or plant life or health. Similar to the SPS Agreement, the provisions of the TBT agreement promote the harmonization of standards by demanding the use of international standards in the context of technical regulations.

European Union Food Law

The development of EU food law can be divided into several phases: the first phase is related to the adoption of legislation covering specific food products (vertical legislation). The second was characterized by the principle of mutual recognition and the third by the overhaul and modernization of EU food law reflected in the adoption of the General Food Law (van der Meulen and van der Velde 2008).

Early Food Legislation

In pursuance of the goal to establish a common market, the European Economic Community (EEC) that has become today the European Union relied extensively on the four freedoms: the free movement of labor, the free movement of services, the free movement of capital, and the free movement of goods. The evolution of food law in the EU especially before the 1990s was based on the concept of free movement of goods. On this basis, the European Court of Justice in 1979 established in *Cassis de Dijon* judgment the principle of mutual recognition of product standards with the effect that when a food is legally marketed in one Member State, it can be lawfully marketed in all other Member States.

The ruling laid down the foundations of a market-oriented approach based on the mutual recognition principle within the context of EU food law rendering detailed harmonization in terms of laws and regulations between Member States less necessary. Prior to the *Cassis de Dijon* case, the EU institutions adopted specific food-product standards as regards composition in order to harmonize the differing food laws of the Member States. Although a horizontal approach, i.e., legislation applicable to all food products, had then been preferred to the product-specific approach of harmonization, certain foodstuffs remain subject to such vertical EU legislation, e.g., fruit juices, chocolate, fruit jam, etc. (van der Meulen and van der Velde 2008).

General Food Law

The emergence of several food safety crises in the 1990s, especially in the form of bovine spongiform encephalopathy (BSE) outbreaks, led to a fundamental change in EU food policy and legislation. The overhaul of EU food law was legally reflected in the adoption in 2002 of Regulation 178/2002, also known as the General Food Law (GFL).

The Regulation establishes general, overarching principles and requirements in relation to food law which are ultimately designed to protect human health and consumers' interests. Thereby, this EU food legislation shifts the focus from the harmonization of the common market to ensuring

food safety. It incorporates a holistic approach termed “from farm to the fork” indicating that the principles outlined therein are applicable at all stages of food production and distribution. Against this background, Article 3 defines food law as:

the laws, regulations and administrative provisions governing food in general, and food safety in particular, whether at Community or national level; it covers any stage of production, processing and distribution of food, and also of feed produced for, or fed to, food-producing animals.

Given the establishment of a general framework of food, the Regulation’s principles apply to food areas that were not subject to vertical legislation and only regulated through the mutual recognition principle.

As another novelty introduced by the GFL is the concept of risk analysis reflecting the acknowledgement by EU legislators that regulatory decisions in the area of food law should be underpinned by science. The risk analysis model is divided by the GFL into the components of risk assessment, risk management, and risk communication. The GFL also provided for the establishment of the European Food Safety Authority (EFSA), which represents the risk assessor, by providing scientific opinions and information to the risk managers. The European Commission and national authorities fulfill the role of risk managers predominantly. The process of risk management involves the weighing of policy alternatives by taking into account the results of risk assessment and other legitimate factors. Risk communication relates to the interactive exchange of information and opinions during the risk analysis process and includes for instance the explanation of risk assessment results.

Following the adoption of the GFL in 2002, further legal instruments were included. The legislative texts take largely the form of regulations and therefore are directly applicable in EU Member States whereas previously EU food legislations were given through directives requiring implementation at national level. Regulations passed by the EU legislators to contribute further to the modernization of EU food laws included, inter alia, Regulation 1829/2003 on genetically

modified food, Regulation 1935/2004 on food contact materials, Regulation 1924/2006 on nutrition and health claims or Regulation 1333/2008 on food additives, and Regulation 1169/2011 on food information to consumers.

EU Legislative Acts on Food Products

Besides the general framework laid out in Regulation 178/2002 and applicable to the whole food sector, the EU legislator addresses in other documents particular food products. Prime examples of such legislations are the EU framework Regulations on enzymes, food additives, and flavorings. In detail, the said framework Regulations provide for general rules on the conditions of use of these substances in food as well as marketing requirements including specific labeling standards.

Common to the structure of the framework Regulations is the establishment of positive lists that are incorporated in the so-called Union lists. The establishment of positive lists implies that specific food additives, flavoring substances, or enzymes can only be marketed provided they are included in the respective list. Otherwise, the products cannot be placed on the EU market. Being part of the Regulation, the positive lists can only be amended so as to include new food additives, for example, by following a legally defined authorization procedure set out in Regulation 1331/2008.

In general, positive lists constitute an important instrument in EU pre-market approval schemes that are found in legislative texts relating to other product categories. Accordingly, novel foods for instance regulated by Regulation 256/97 will first need to be scientifically evaluated by EFSA prior to their placing on the market.

The integration of pre-market approval schemes in EU food law entailing scientific evaluation reflects the strong scientific dimension of EU food legislation.

Private Food Laws

Scope

By contrast with requirements stipulated by legislative texts that may also be described as public

law requirements and are binding on economic operators in the food sector, private food laws provide for rules that do not impose an obligation per se on operators. In other words, such private schemes constitute non-binding rules. However, these non-binding rules may nevertheless become binding by inclusion into a contract that binds the parties having concluded the contract (van der Meulen 2011). Due to the conclusion of the contract, obligations between parties come into existence with regard to the voluntary rules, and the parties are equipped with rights in case of noncompliance with the provisions of the contract, which then can also be invoked before courts.

Standards set by private entities concern food safety, food quality and production, or broader interests involving environmental aspects or corporate social responsibility. In particular, hygiene codes or codes of conduct serve as an illustration in this regard.

Also, often the term self-regulation is used for such kind of arrangements which has been, for example, defined by the EU in the interinstitutional agreement on better lawmaking as *the possibility for economic operators, the social partners, non-governmental organizations or associations to adopt amongst themselves and for themselves common guidelines at European level (particularly codes of practice or sectoral agreements)*.

The creation by businesses of own obligations in addition to legal requirements can have different motivations. Rationale behind private food schemes is to ensure food safety aspects and standards with the consequence of protecting liability and product quality. By implication, this also helps to comply with legal requirements established by the public legislator. Private standards are also beneficial in terms of international cooperation by using private regulation in order to impose certain obligations on producers that work in countries with different legal requirements. Other aspects such as the promotion of general interests including corporate social responsibility can play a role when private standards are adopted by businesses (van der Meulen 2011).

Relation with Public Law

Mostly, private food laws relate to requirements that are found in legal instruments. In this way, private schemes interconnect with public law requirements. Conversely, legal instruments can refer to private standards. In particular, at EU level Regulation 882/2004 makes reference to standards developed by the European Committee for Standardization (CEN) in the context of methods of sampling and analysis. The CEN provides voluntary standards for industry and business. Another possibility found in public law vis-à-vis private standards is the requirement on affected parties to regulate for themselves. A prominent example in this relationship is EU Regulation 852/2004 that imposes the obligation to set up procedures based on HACCP principles (van der Meulen 2011).

Enforcement and Control

EU Food Law

The food scandals prior to the adoption of the GFL revealed that enforcement of food safety legislation was not functional and that the legislation on food controls requires improvement. Consequently, a legislative revision of enforcement and control procedures regarding EU food laws was also undertaken.

Article 17 (2) stipulates the principle that national authorities are responsible to enforce food law and monitor and verify that the applicable food law requirements are fulfilled by food operators at all stages of the food chain. Therefore, in the context of official controls, national authorities are in charge of the inspection of premises run by food operators.

Despite this general obligation on part of the EU Member States, Regulation 882/2004 on official controls performed to ensure the verification of compliance with food law provides the Commission with supervision powers of national enforcement. Per the provisions of this Regulation, the Commission monitors the performance of national authorities with regard to enforcement.

Where the national authorities find noncompliance with relevant food law, Article 55 of Regulation 882/2004 provides the national authorities with several types of enforcement actions to remedy the situation. The imposition of sanitation procedures, restriction or prohibition of placing the noncompliant product on the market, monitoring and where necessary ordering the recall, and withdrawal and/or the destruction of the food are listed among the possible actions. One of the most stringent enforcement actions national authorities can apply is the suspension or withdrawal of the establishment's approval.

The Regulation further establishes that each Member State must lay down a system of sanctions for the infringement of food laws. These sanctions must be effective, proportionate, and dissuasive.

Private Food Law

As already implied in section “[Scope](#)” of this entry, noncompliance with private food standards can entail several consequences such as contractual fines as agreed in the contract between the parties.

To control the producer's compliance with the requirements set by a particular private standard, so-called certification schemes are applied. These certification schemes shall attest in principle that the “audited” producer complies with the given specifications of the standard. Normally, certification schemes are based on third-party control involving the provision of a certificate to the producer where compliance is proven (van der Meulen [2011](#)). In contrast to certification systems, certain schemes exist on the basis of self-declaration (Commission Communication [2010](#)).

Summary

This entry gave an overview of the major components forming food laws and regulations. In doing so, the entry distinguished in particular between international food laws, EU food laws, and private laws while taking into consideration the entanglement of the various spheres of food laws. The entry outlined first the development of food laws from a historical point of view. Then it

presents the area of international food laws notably the UN contribution to the development of food laws, in particular through its agencies of FAO and WHO that launched the idea of an international food code, the Codex Alimentarius. As another actor at international level, the WTO affects international trade in food and the domestic laws of its members. This is in particular achieved through the SPS and TBT agreement. The following section dealt with EU food laws and its development in different stages. As explained, the adoption of the Regulation 178/2002 (GFL) led to a fundamental change in EU food legislation entailing significant legislative changes for the food sector in the EU Member States. Subsequently, this entry described the establishment of private food laws by business entities and their benefits. In the last section, the enforcement and control mechanisms to ensure compliance concerning food law requirements are shown in the context of EU food law and private food law. In detail, the enforcement and control apparatus under EU law is determined by Regulation 882/2004 whereas under private food laws certification schemes are of relevance.

In the future, food laws will have to continue evolving as quickly as possible to respond adequately to the upcoming scientific and technological developments in the food sector. These emerging technologies, such as nanotechnology enabling food industry to improve food products in terms of, e.g., taste or texture and thereby providing unprecedented opportunities to modify food products, entail fundamental changes in the food industry and hence potential risk for the consumers. Against this background, food regulators must be prepared to address these new challenges to food safety while not stifling innovation and research in the food sector.

Cross-References

- [Food Standards](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [Private Food Governance](#)
- [Right to Food in International Law](#)

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Food Miles

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Introduction

The concept of food miles has been relevant for as long as humans have swapped food. Every bill of lading archiving the contents of every inbound ship was an implicit reference to a point of origin and, therefore, a record of the distance food traveled. Not incidentally, in most cases, the further afield a particular good originated from the point of consumption, the more it was valued for its exotic qualities. Throughout most of human history, the market rewarded distance and novelty. The more miles traveled, the better.

By the late twentieth century, popular evaluations of food production had shifted into the new framework of global sustainability. An emerging emphasis on the environmental consequences of food production, initially inspired by Rachel Carson's *Silent Spring* (1962), fostered critical changes in how consumers evaluated responsibly produced food. Perhaps most notably, consumers now took an interest in reducing the distance food traveled between "farm and fork." "Buying local" and nurturing local "foodsheds" became progressive agricultural goals. As these trends coalesced, socially conscious consumers demanded to know more about the distance food traveled. They called this figure "food miles."

The name arrived alongside a virulent form of food politics. What was once an objective and morally neutral measurement between the points of production and consumption evolved into a value-laden proxy for eco-correct consumer behavior. Today, a debate with strong ideological overtones plays out – and in some cases rages – over the impact that food miles have on the overall environmental impact of food production. There is, for all the concept's popularity, currently no consensus on the extent to which food miles matter as a reliable gauge of sustainability.

The immediate history of food miles per se began with Dr. Tim Lang, former director of the Sustainable Agriculture and Food Alliance. Lang coined the term "food miles" in the early 1990s. The basic intention behind this idea was to develop an accessible gauge for how consumers might judge the carbon emissions released during in the production of a particular type of food product. Lang explained in 2005:

The idea behind food miles...was and remains simple. We wanted people to think about where their food came from, to reinject a cultural dimension into arcane environmental debates about biodiversity in farms..... Food miles have rocketed in recent years. Between 1978 and 2002, the amount of food trucked by heavy goods vehicles (HGVs) increased by 23 %. And the distance for each trip increased by over 50 %. In 2002, food transport accounted for an estimated 30bn vehicle kilometres. (Barclay 2012, p. 2)

The upshot for the environmentally aware consumer, as Lang advised, was clear: "shop locally and buy local produce" (Lang 2005).

Lang's emphasis on food miles as a measure of sustainable food production joined the quantitative efforts of Rich Pirog to pin down the precise extent to which food traveled in the global economy. Pirog, while working as the associate director of the Leopold Center for Sustainable Agriculture at Iowa State University, calculated in 2001 that the average distance that food travels between farm and table was about 1,500 miles (Black 2008). Locally sourced food, by contrast, traveled a mere 44.6 miles. The difference in CO₂ output consumed by transportation between the conventional and local food systems was notable. Conventional food production turned out to use from 4 to 17 times more fuel than local food production in order to move goods from farm to table. The implication was, yet again, perfectly clear: buy food locally whenever possible (DeWeert 2009). Research by Pirog and Lang spawned a cottage industry of quantitative research aimed to map the miles traveled within regional and global food systems.

Mathematical computations on food miles, and the implications therein, soon translated into concrete consumer trends. High-profiled efforts to eat locally captured the popular

imagination through glowing media reports. Before questions such as “what is local” or “do food miles even matter” were seriously examined, food activists joined bandwagons of advocates in pursuit of “the 50-mile” and “the 100-mile” diet fads, writing popular books, magazine articles, and blogs to chronicle their culinary adventures. Promoting the virtues of a diet that kept consumers tethered to local production while reducing reliance on fossil fuels, writers including Michael Pollan (in the *Omnivore’s Dilemma*) and Barbara Kingsolver (in *Animal, Vegetable, Miracle*) became the unofficial leaders of an unofficial food movement that sought not only to reduce food miles but, building on that reduction, to reexamine the very basis of the entire post-World War II idea of food production. *Time Magazine* provided a capstone of sorts to this emerging movement with an article entitled, “Local-Food Movement: The Lure of the 100-Mile Diet” (Roosevelt 2006). In the forge of this critique, industrial food production – once the pride and joy of the United States – became enemy number one, at least for a small but vocal cohort of relatively privileged westerners willing to spend more to eat locally sourced food.

Several related developments emerged from this comparatively widespread quest for local food. The first was the addition of a single word that would jolt even more consumers to pay attention to food miles while anchoring the future of food reform. The word “locavore” entered the mainstream as the Oxford English Dictionary’s “word of the year” in 2007. The term was coined by the Berkeley, California, chef Jessica Prentice in 2005 as a way to describe, as Ben Zimmer, editor of the American dictionaries at Oxford University press, put it, “food-lovers [who] can enjoy what they eat while still appreciating the impact they have on the environment” (Safire 2008).

A second development to emerge from the food mile frenzy was a sudden spike in the popularity of farmers’ markets. According to the USDA, the number of active farmers’ markets in the United States rose from 2,863 in 2000 to 7,864 in 2012, an almost threefold increase.

One study exploring why people chose farmers’ markets over conventional grocery stores found that 64 % of the customers at farmers’ markets came to buy local produce (Wolf et al. 2005, p. 192). The website supporting Michele Obama’s “Let’s Move” initiative celebrated “access to fresh, locally grown foods” as the top reason for shopping at a farmers’ market. In many ways, farmers’ markets became the most visible evidence that the numerous goals promised by eating local were well within reach: eco-correctness, community cohesion, reduced food miles, and, of course, the hand of the farmer. Your farmer.

A third foundational change to emerge from the concerted effort to localize food production and consumption involves the cultural demonization of factory farming. The concentrated production of animal goods in industrial settings was increasingly illuminated by locavores to be unsafe, unsanitary, inhumane, and devastating to the environment.

While effectively channeling the anger of conscientious consumers who were fed up with the industrial food system, the locavore movement – which was broadened and reimagined by food reformers into the Sustainable Food Movement – struggled to overcome its image of elitism. For a wide variety of reasons (including reduced scale), local food requires higher labor and production costs. Leaders of the Sustainable Food Movement generally confronted this economic reality with feet of clay and a tin ear. Many examples abound.

When Michael Pollan explained to the *Wall Street Journal* in 2010, at a time when the country was deep in a recession, that it made perfect sense to spend \$8 on a carton of locally sourced eggs, or when Alice Waters, executive chef and owner of Chez Panisse, chastised consumers for wanting “to buy Nikes, two pairs” rather than spend more on local food to “nourish themselves,” middle-class consumers came to feel that they were not so welcome under what Pollan called the movement’s “Big Umbrella.” Josh Viertel, former president of Slow Food USA, spoke highly of the need to be all-inclusive. He wrote, “Should we be a movement that meets the interests of those who are naturally drawn to us and who

can afford to take part, or should we be a movement that meets the needs of those who are most dependent on our being successful – and who are most vulnerable if we fail?” Nobly, he declared his allegiance to the latter. Five months later, unable to blend the goals of slow food and high accessibility to it, he resigned amid considerable controversy.

Difficulties reaching a more socioeconomically inclusive audience did not prevent the Sustainable Food Movement from wielding the cause of local food as an ideological weapon in the war against globalization. In 2007, Vandana Shiva, an ardent Indian activist, wrote in *Manifestoes on the Future of Food and Seed* (2007) that “By eating local, we are taking power and profits away from global agribusiness, and strengthening our local food community.” Her outrage against the expanding global food chain, including its dominance by multinational corporations such as Monsanto, was shared by Prince Charles who, in the same volume, touted local food production as a “significant challenge to the massed forces of globalization, the industrialization of agriculture, and the homogenization of food.” Once again, at the core of this critique was food miles.

As eating locally sourced food for environmental reasons became a well-established form of food activism, trenchant criticisms of food miles began to question the concept’s accuracy and viability. At the forefront of that criticism was a more comprehensive evaluation of the energy required to produce our food called a “life cycle assessment” (LCA). LCAs consider not just the distance food travels but, in so far as they can, other factors of production and consumption that are required to bring food from farm to table. Some of these factors include water usage, harvesting techniques, pesticide usage, fertilizer outlays, disposal and storage methods, packaging, crop drying techniques, and dozens of other inputs that consumers rarely think about when judging the eco-correctness of a food purchase. The reason why LCAs posed something of a challenge to the concept of food miles is that, when these other factors of production are taken into account, the distance food

travels appears to play a relatively small role in the overall energy profile of food production.

Interestingly, one of the key figures to initiate the transition to LCAs as a better assessment of food’s “carbon footprint” was Rich Pirog, originator of the 1,500-mile claim. Subsequent research he conducted found that, when it comes to food’s extensive supply chain, 45.6 % of all fossil fuel used came from production and processing, 15.8 % from restaurant preparation, and another 25 in home usage and disposal. The shocking discovery, at least for supporters of food miles as a gauge of sustainability, was that transportation was the lowest of all factors, accounting for about 11 % of overall energy used in that product’s life cycle (Pirog 2001). These findings led several scholars writing in the journal *Environmental Science and Technology* to claim that “although food is transported long distances in general...the GHG [greenhouse gas] emissions associated with food are dominated by the production phase” (Weber and Matthews 2008).

The shift in thinking, at least on the policy and academic levels, spawned a number of studies that made their way into the mainstream news, thereby providing further counterweight to the extremely popular food miles assessment and, in turn, the basis of the sustainable food movement as a whole. Most notable was a 2006 study to come from New Zealand’s Lincoln University. Led by the researcher Catherine Saunders, the study found that grass-fed lamb shipped from New Zealand to London was four times more energy efficient than grain-fed lamb produced in the English countryside (Barber et al. 2006). What mattered, in essence, was not where the lamb came from but rather how it was produced. This study was soon joined by another much publicized study that discovered how German apple juice imported from Brazil was less energy intensive than apples grown and processed locally. The reason was that apples in Germany were grown largely in hothouses, which are generally very energy intensive, so much so that they countered the 10,000 miles journey from Brazil (Blanke et al. 2005).

Other scholars skeptical of food miles explored the practical dietary implications of

locally sourcing food. Considering New York State and the considerable opportunities therein to eat local fruit, Jennifer Wilkins found that, of all the fruit grown in the state, only one – the apple – could feed New Yorkers at a level that met the US Recommended Dietary Allowances. Not only could the other fruits produced in New York not be harvested on a level that would meet basic dietary needs but, as Wilkins noted, New Yorkers would have to forgo eating all tropical fruit, including bananas, a decision that could have deleterious health consequences (Wilkins 2009, p. 174). Other analysts began to wonder about the desirability of scaling down and localizing potentially onerous food processing centers. Writing in the *British Food Journal*, three scholars, wary of the emerging desire to localize food production, noted how “a return to small units within communities may well bring environmental problems such as smell, pollution, waste disposal, visual intrusion, and nuisance for those communities” (Jones et al. 2004).

Another critique of food miles and the localization that it inspired came through a sociological lens. Writing in the *Journal of Rural Studies*, the sociologist Clare Hinrichs argued that, “making ‘local’ a proxy for the good and ‘global’ a proxy for the bad may overstate the value in proximity” (Hinrichs 2003, pp. 33–45). Central to this line of thought was a growing skepticism that local communities necessarily made more democratic food decisions than regional or global ones. This concern was developed in some depth by Patricia Allen, a scholar at the center for Agroecology and Sustainable Food Systems at UC-Santa Cruz. Analyzing the Santa Monica farmers’ market, she wrote, “The presumption that everyone can participate is a magician’s illusion,” noting how the internecine battles over limited space belied the fabled “fluid cooperation among groups with quite different interests” that farmers’ markets were said to embody (Allen 1999, pp. 120–122).

As some scholars began to question the food miles rubric, others took a more reactionary bent. They began to dismiss local food systems altogether as boutique endeavors of the foodie elite. In turn, they sought to reclaim what they saw as

the virtues of the global and industrial food systems: efficiency, accessibility, cost-effectiveness, and high productivity – all qualities necessary for a food system that aimed to feed an expanding global population a healthy diet. Few were more outspoken on this point than the Missouri corn and soy farmer Blake Hurst. In an essay called “The Omnivore’s Delusion,” Hurst argued that expansive supply chains did not undermine the agricultural community. He wrote: “the distance between the farmer and what he grows has certainly increased, but, believe me, if we weren’t closely connected, we wouldn’t still be farming.” He lamented how the sustainable food movement, in its emphasis on localizing the foodshed, offered agricultural prescriptions that “ignore the ‘industrial’ farmer’s experience and knowledge,” much less the impending population explosion that had to be fed. Moreover, he added, most so-called industrial farmers were family farmers (Hurst 2009).

Hurst was joined by Pierre Desrochers and Hiroko Shimizu, authors of *The Locavore’s Dilemma: In Praise of the 10,000-Mile Diet* (2012). In an acerbic tone highlighting precisely how politicized the food miles debate had become, the authors wrote that the quest for local and sustainable food “is essentially a fad promoted by bicoastal urban ‘agri-intellectuals’ whose knowledge of and practical experience with food production are typically limited to the world of hobby gardening and a once-in-a-lifetime foray into hunting or killing a backyard animal” (Desrochers and Shimizu 2012, p. 9). In an interview with *Reason* magazine, Desrochers wondered, “If everything was so great when most food was sourced locally centuries ago, why did we go through the trouble of developing a globalized food supply chain in the first place?” More and more critics thought this was an excellent question, one that highlighted a retrograde aspect of the local food movement and its slavish adherence to food miles.

As the science and politics driving the food miles discourse intensified, a related issue intervened to further complicate and polarize the food miles debate. It suggested that, when it comes to sustainable food production and transportation,

it's not where our food comes from that matters as much as what it was we ate. The split was between plants and animals. In 2006, the UN's Food and Agriculture Association published a groundbreaking report called *Livestock's Long Shadow*. The report provided a devastating assessment of the environmental impact of eating animal products. It found, most notably, that the global production of meat was responsible for more GHG emissions than transportation. In addition, it documented the extensive impact of animal agriculture on biodiversity loss, land degradation, and water pollution (Desrochers and Shimizu 2012). Subsequent assessments of the correlation between animal agriculture and climate change discovered that *Livestock's Long Shadow* may have understated the impact on GHG emissions. Two former scientists from the World Bank argued that the animal sector may have been responsible for as much as 51 % of global GHG emissions (Worldwatch n.d.). The authors of the 51 % figure suggested that switching to plant-based calories would "have far more rapid effects on GHG emissions and their atmospheric concentrations-and thus on the rate the climate is warming-than actions to replace fossil fuels with renewable energy."

In many respects the debate over sustainable food production and responsible consumer choice began to compare the benefits of eating local versus eating a plant-based diet. According to several studies, the comparison was not even close. After a comprehensive comparison of the two diets – plant-based and local – the authors of a study published in *Environmental Science and Technology* wrote, "we suggest that dietary shift can be a more effective means of lowering an average household's food-related climate footprint than 'buying local.' Shifting less than one day per week's worth of calories from red meat and dairy products to chicken, fish, eggs, or a vegetable-based diet achieves more GHG reduction than buying all locally sourced food" (Weber and Matthews 2008). In this context, Rich Pirog now explained, "Food miles are a good measure of how far food has traveled. But they're not a very good measure of the food's environmental impact" (DeWeert 2009).

Currently, an emerging emphasis on veganism as the most ecologically responsible diet coexists uneasily alongside the locavore counterargument that small-scale, locally sourced animal products are ecologically desirable, especially if they come from pasture-raised animals, and even necessary to the future of sustainable food production. On the one hand, the biologist Allan Savory recently (March 2013) delivered an electrifying TED talk in which he argued that rotationally grazing more cattle on global desert land would eliminate the prospect of global warming while simultaneously feeding local populations an abundance of beef. His talk was widely praised (McWilliams 2012). On the other hand, a couple of years earlier, Dr. Richard Oppenlander's book *Comfortably Unaware* argued that all animal production – be it factory farmed or pasture raised – was unsustainable. When it came to the addition of cattle to the landscape, Oppenlander ridiculed the notion, explaining that "greenhouse gas production is 50–60 % higher in grass-fed beef" (Oppenlander 2011, p. 125).

Summary

The future of food miles as a concept central to the evolution of sustainable food systems will remain, for all the criticism it has endured, a sound one. Even if the arguments against food miles – the idea that it's more sustainable to eat a plant-based diet or that globally scaled food economies are ultimately more efficient at feeding the world – are valid, the appeal of reducing food miles will continue to thrive due to the concept's effectiveness as a consumer response to a global food system that is as industrialized and alienating for many consumers as it has ever been in the history of human food production and consumption.

Cross-References

- [Local and Regional Food Systems](#)
- [Urban Agriculture](#)

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Food Not Bombs

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Synonyms

Antiwar food justice; Community kitchens; Community meals; Food movement; Food waste and politicized food rescue; Sharing food in public space

Introduction

Food Not Bombs is the umbrella name for a loose network of self-organizing food justice groups that began in Boston in 1980 and whose work is

anti-hunger, antiwar, and pro animal rights. Currently the movement is made up of a decentralized network of 500 chapters in 60 countries (Food Not Bombs 2012). Food Not Bombs groups rescue food from various nodes in the food system including farms, restaurants, grocery stores, distributors, community-supported agriculture, and bakeries among many other places. Operating outside of the state, not-for-profit, and religious social service sector, Food Not Bombs food rescue efforts involve local connections with food businesses. These connections create mutually beneficial relationships whereby the businesses can reduce their food waste through regular donations. Once rescued, Food Not Bombs cooks vegan and/or vegetarian meals in shared kitchens and then serves the food in well-trafficked public spaces like parks and plazas. These community meals often feature nonsectarian political literature on poverty, hunger, animal rights, and the US military budget. In addition to regular meals, Food Not Bombs groups also engage in food solidarity projects: cooking food for demonstrations, fundraisers, conferences and/or meetings organized according to nonviolent social justice principles.

What is called Food Not Bombs is not a single, centrally run organization with a president, officers, board of directors, or staff. Rather, Food Not Bombs has a philosophical foundation in anarchism and direct democracy, a foundation that shuns hierarchical systems. In practice, any one Food Not Bombs chapter tends to be ideologically heterogeneous rather than entirely made up of anarchists. However, the overall texture of the group would be considered what Day (2005) calls “anarchistic.” As such, Food Not Bombs is really a collection of guiding principles and organizational tools that encourage people to create their own local chapter while using horizontal organizational modes. In the same grassroots spirit of the Do It Yourself (DIY) and punk movements, people concerned with the issues of food waste, hunger, and militarization can claim the Food Not Bombs tools for their own communities and create an autonomous local chapter (Holtzman et al. 2007). This model emphasizes that one need not ask for permission – from a Food Not Bombs

“leader” or from local politicians – in order to act ethically in the creation of community food security.

Food Not Bombs claims more than 500 chapters on their website, although the decentralized and all-volunteer nature of the movement means that new chapters are emerging while old ones may dissolve or temporarily scale back their work. Measurements of the size of the movement should be understood to be estimates rather than precise statistics. However, the group’s impact can be gauged by examining the longevity of the movement, the growth of new chapters, and the increasing attention – both in favor and in opposition to Food Not Bombs – paid by journalists, academics, and municipalities. Several chapters, for example, have been in the mainstream press and scholarly literature in the late 2000s. This is primarily due to cities adopting copenact legislation that criminalizes sharing food with poor people in public spaces, which has led to arrests of Food Not Bombs activists (see The National Coalition for the Homeless and The National Law Center on Homelessness and Poverty 2010; Mitchell and Heynen 2009).

Origins and Growth of the Movement

Food Not Bombs originated in the dissolution of the antinuclear movement in the US northeast. Beginning in the latter half of the 1970s, the antinuke movement spanned from the end of the New Left social movements into the early 1980s. As a direct forebear, the antinuke movement’s tactics, organizational form, and philosophy are all essential for understanding Food Not Bombs. Antinuke activists blended anarchist, radical pacifist, and Quaker political philosophies. Chief among these ideas was the notion that individuals need not wait to act on their ethical principles, nor act only in the arena of representative electoral politics (see Tracy (1996) for the radical pacifist roots to these ideas). Working in this tradition the antinuke activists occupied and blockaded construction sites and research facilities using non-violent direct action. Additionally, these more spectacular confrontational actions were based

in quotidian forms of action such as prefiguration, consensus decision-making and affinity groups (Epstein 1991; Cornell 2010). Prefiguration is the name given to tactics that create in the present moment the world that people are struggling to create. Thus, the struggle for equality and direct democracy requires that groups eliminate hierarchies and oppressive processes in their organizations and in their everyday lives. For antinuke activists, making decisions horizontally (rather than hierarchically) and working in small groups with strong interpersonal bonds were two central methods of prefiguration.

As the antinuke movement waned, Boston-based activists began to blend political theater with serving food in public space into an innovative form of social protest. Two actions in 1981 in the ongoing campaign against the Seabrook Nuclear Power Plant in New Hampshire foreshadowed the first Food Not Bombs. Both actions involved food and public space and both contained the seeds of what later became the mature Food Not Bombs model.

At one action, organizers used political theater to protest a Boston bank that had investments in the nuclear arms industry. They created a depression-era soup-line, as if to say that the bank's investments were leading to social crisis on par with the depression. They brought soup and bread out to the sidewalk near the bank and invited all to join, including individuals in nearby shelters (Parson 2010). At the other event, the same group held a bake sale for the legal fund of an arrested friend. Like the soup-line protest, they used a bit of theater alongside their food to impute a political message into the event. Wanting passersby to envision a world where the military, not schools, faced budget shortfalls, they dressed up as members of the military attempting to sell baked goods (Parson 2010). Throughout this period they used political messaging that argued for basic goods such as food and schools instead of war, messaging which they distilled into the very simple and clear demand to "drop food not bombs." Hence the name Food Not Bombs.

As the group of Boston antinuke activists created what would become the first Food Not

Bombs chapter, they continued to use many organizational elements of the antinuke struggle. They lived together and organized in an affinity group fashion using consensus for making decisions. Their public meals continued the tactical legacy of nonviolent direct action. Sharing food in public space is much less risky than some of the more famous direct actions of the civil rights and antiwar era - prison hunger strikes, lunch counter sit ins, ship blockades, construction site occupations - but the principles remain the same. The Food Not Bombs public meal embodies the ethos that individuals do not need to wait for the state to take action and create community solidarity; it can be and is done in the here and now by regular people.

Early on, Food Not Bombs in Boston provided food solidarity at a series of demonstrations while also making regular food deliveries to daycare centers, housing projects, and women's shelters. Members of the Boston chapter provided food at the mass rally for disarmament in June 1982 that was held in Central Park in New York City (Butler and McHenry 2000).

Starting in the late 1980s, differences between municipal policies and the Food Not Bombs philosophy lead to high-profile conflicts between police and activists. In San Francisco, Food Not Bombs activists found that their model for eliminating food waste, hunger, and militarism came up against the interests of the mayor and the Cole Valley Improvement District, a business improvement district (BID) in the city's famous Haight-Ashbury neighborhood. The ensuing arrests, which numbered over 1,000 from 1988 to 1996, were often for violations such as sharing food without a permit (Parson 2010).

While most of the arrests during this period were for violations of health codes, Food Not Bombs continued to conduct their direct action community meals while forging alliances with homeless people and their advocates (Parson 2010). Scholars identify this period in urban policy as one dominated by "quality of life" campaigns. Based upon research that argued that urban disorder is a precursor to more serious crime (see, e.g., Kelling and Wilson 1982), mayors such as New York City's Rudolph

Giuliani put emphasis on stopping smaller scoff-laws such as “squeegee men,” transit turnstile hoppers, and graffiti writers as well as homeless people who slept, drank, and urinated in public (see Clines 1993). Although Giuliani is perhaps the most well known for these policies, San Francisco’s Matrix program began simultaneously to Giuliani’s election. Under the Matrix program, the San Francisco police began to cite people for quality of life violations and to push homeless people out of public spaces. Scholars such as Mitchell (2003) argue that this use of the penal system is misguided because it ascribes criminal activity to the actions that poor and homeless people often must take in public space precisely because they do not have private resources. Since Food Not Bombs fed all people and especially the same poor people that the Matrix program sought to displace, activists and their supporters argued that the health codes were being used as an indirect tool for political purposes. Using police to prevent a community meal thereby reaffirmed one of the guiding principles of the group’s direct action food sharing: to make visible food insecurity rather than disguising hunger and poverty (Parson 2010; Mitchell and Heynen 2009).

The criminalization of Food Not Bombs activists has continued along two fronts. First, as Food Not Bombs has spread in the aftermath of the San Francisco arrests, chapters have become nodes in the local networks of alter-globalization activists. Perhaps most widely known for their participation in the 1999 protests against the World Trade Organization (WTO) in Seattle, alter-globalization activists organized opposition at numerous summits of global leaders during the 2000s. Food Not Bombs’ connection to these actions has led to state surveillance and repression. This has been particularly the case in the years following 9/11, where the US state has consistently treated radical social movements as either terrorists or potential terrorists (see Heynen 2010). Secondly, as economic inequality in the United States has only grown over the past two decades, cities have continued to use displacement as their main tool for dealing with the families hit hardest by economic crisis. Food Not

Bombs’ uncompromising commitment to rescuing food and sharing nutritious meals in highly visible public places has led to more disputes with municipal governments and business improvement districts. In the late 2000s several municipalities passed legislation that directly led to the arrests of Food Not Bombs volunteers, a process that geographers Mitchell and Heynen call “criminalization of intervention” (Mitchell and Heynen 2009).

The major impetus for Food Not Bombs’ actions are the abundance of food that needs rescuing, the proliferation of hunger and poverty, and the use of social wealth for producing weapons and engaging in warfare. Neither the actions of Food Not Bombs activists nor the policies of governments have ended these social dynamics. While the criminalization of the movement seeks to channel action into more socially accepted arenas, it has not been successful in changing the course of the movement. These social factors point to the continued presence of Food Not Bombs’ direct action community meals in public spaces.

Issues Raised by the Food Not Bombs Movement

The Food Not Bombs movement raises several issues. The most prominent issue is the coexistence in the United States of individuals in need of food alongside system-wide food waste. According to the US Department of Agriculture (USDA), 17.2 million or 14.5 % of US households experienced food insecurity sometime during the year in 2010. When disaggregated, the data reveal that households of color are disproportionately food insecure, with 25.1 % of black households and 26.2 % of Hispanic households experiencing food insecurity during 2010. And because access to food is mediated by having money, one third of households with incomes below 185 % of the federal poverty line experience food insecurity (Coleman-Jensen et al. 2011). Additionally the National Resources Defense Council (NRDC) reports that 40 % of food in the United States in 2011 went to waste,

making wasted food the largest component of solid waste and contributing to greenhouse gas emissions from landfills (Gunders 2012). The NRDC report demonstrates unequivocally that there is an abundance of food produced alongside the existence of US households experiencing lack. Despite the common sense notion that food shortages are immanent threats due to population growth – a kind of persistent Malthusianism – abundance alongside hunger points to issues of distribution rather than production as the root cause of the problem.

Food Not Bombs activists engage in a form of grassroots direct action against this dual problem of abundance and lack. In cities throughout North America, Food Not Bombs volunteers rescue food that would otherwise be going to landfills from many points in the food system. From restaurants, bakeries, farms, distribution centers, and grocery stores, Food Not Bombs volunteers quite literally work with the food that makes up that 40 %, albeit a very small portion of it. Additionally, they combine this embodied knowledge with a criticism of the amount of social wealth that is used for various military expenditures versus social welfare programs. Food Not Bombs activists eschew politically neutral explanations for systematic food waste and budgets overwhelmingly skewed towards militarism. With the public meals they attempt to create a space where people can engage in dialogues that go against the naturalization of these phenomena. During the neoliberal era, policymakers stress that the self-regulating market, as opposed to governments or collective solidarity, is the best mechanism for dealing with social problems. The anti-capitalist principles that provide the foundation for Food Not Bombs contradict this orthodoxy. Under these circumstances, Food Not Bombs remains outside the realm of socially legitimate policy expertise and their work remains largely unknown except in instances where police arrest their volunteers.

Furthermore, the anarchist roots to the Food Not Bombs philosophy reveal issues about the role of the state, nonprofit, and charitable sectors in effectively dealing with these interconnected issues. One of the central outcomes of Food Not

Bombs' anarchistic (Day 2005) model is their stance on state and nonprofit charities. The group's principles assert that ordinary citizens motivated by solidarity are the primary agents of social transformation, not governments, religious charities, or nonprofit services. These principles also derive from a criticism of state welfare and charity services (which today are increasingly inseparable) as serving to reproduce the market system and hence reproduce the system that produces the problems rather than eliminate them (see Heynen 2010). While the dominant political discourse debates government services as either fostering dependency (conservative political philosophy) or a temporary safety net for economic turbulence (progressive political philosophy), Food Not Bombs once again takes a different approach. The radical anarchist influence in the movement calls out the social welfare state as engaged in managing fluctuations in the labor market, not in ameliorating the problems that plague US households. These anti-statist philosophies that scaffold the movement sometimes overlap with anti-statist libertarian viewpoints. However, Food Not Bombs' collectivist emphasis on social solidarity and agitation to utilize social wealth for households in need have very little to do with individualist libertarianism.

The heart of this issue is an ideological debate between statist and anti-statist policies as a way to reduce hunger and food waste. Yet questions remain about the relationship between grassroots activism and state action. Historically, there are examples of activists taking on the role of direct action service providers – in other words creating services that help their community survive. Some of these projects led to the state taking on that role. Shepard (2007), for example, tells the story of the Housing Committee of the AIDS Coalition to Unleash Power (ACT UP). Facing the state's unwillingness to give homeless people with HIV/AIDS dignified housing, the Housing Committee decided that they would have to house people themselves. In Shepard's analysis, the group's ability to do both direct action protests and direct services established an embodied praxis for their broader demands, which eventually led to state action on the housing issue. Their success at

housing one another bolstered, rather than took away from, their goal of state support. Additionally, Heynen's (2009) analysis of the Black Panther Party's free breakfast program suggests that stalled legislation to create federal free breakfast was actually made politically feasible by the success of the BPP's solidarity breakfast program (see Heynen 2009). In both of these cases, the activists demanded a world where all people have access the means of survival. When faced with the ethical dilemma of their community needing resources in order for people to survive, these groups fused service with political action rather than divert resources into either movement building or depoliticized services.

The frames that individuals use to understand social action typically posit a binary between reformist and revolutionary action. Reformist action is an action directed at policy changes within a liberal framework, while revolutionary action is that which is geared towards changing or transforming state power. Mutual aid or direct action services, which are just other names for grassroots forms of community survival, pose challenges to this binary. On the one hand, they eschew typically reformist activities such as lobbying or asking for government permission, while they simultaneously focus on arenas of social life such as housing or food that are utterly quotidian compared to the grand scale of revolution. Furthermore, state responses to these actions can complicate the issue because the state may step in to perform services precisely in order to undercut the radicalism behind such services (see the discussion of the women's shelter movement in Enke 2003). Scholars of neoliberalism, conversely, argue that the contemporary penchant for cutting government services actively relies on community-scaled action. These scholars argue that activists doing direct services actually promote more cuts than they create the political pressure for increased services (see Herbert 2005) for an examination of community policing in this context). The history of Food Not Bombs does not present a clear case for either of these positions. However, confrontations between Food Not Bombs activists and city authorities suggest that even if they are feeding people,

they are not doing it in the manner and/or in the spaces that the state prefers. At the very least, this suggests that the politics of community services, such as who is doing it and in what context, are a factor in how state forces respond to such work.

Furthermore, the criminalization of Food Not Bombs activists in public spaces across the United States brings up the issue of the legitimate uses of public resources. This issue is especially topical in the wake of the occupations of public parks across the United States in fall 2011 under the banner of the Occupy Wall Street movement. Under neoliberal governance, cities strive to control public spaces for the twin purposes of "quality of life" and "security." As a result the role of public parks in social life has transformed. While perhaps public space has never been the truly open space that the image of the Athenian *agora* implies (see, e.g., Mitchell 2003), these trends have increased privatization and decreased access, often through the mechanisms of user fees, public-private partnerships, and laws against basic functions such as sleeping or sharing food. Many scholars note that privatization has led to the exclusion of the most precarious individuals (see Low and Smith 2006). Food Not Bombs activists use a form of direct action to explicitly confront this trend, serving food to all comers in public places. As would be expected, these gatherings bring together a diverse group of people, including those that the state wishes to exclude.

The disputes that have ensued, from San Francisco to Orlando, while on the surface coded in the discourse of public health, often pit business and real estate interests against this pluralistic vision of public space. At the very core of this is a question of what collective wealth in the form of public parks, plazas, and open spaces should be used for. Real estate and business improvement districts seek to make public space more amenable to their property value and/or retail interests. They argue that broader social good derives from their success and that making public space available to society's marginalized people hinders their success. Food Not Bombs counters this discourse by actively creating radically open public spaces, arguing that spaces

created by social wealth should be available to all people.

Yet the mayor of Orlando, for example, called Food Not Bombs activists “food terrorists” during a protracted conflict about the use of Lake Eola Park (“Feeding Resistance” 2011; Jacobson 2011). The mayor’s attempt to code community food sharing within the language of criminal behavior suggests the level of friction in these conflicts. While it is obvious that Food Not Bombs activists are not terrorists, it is also self-evident that they push anti-militarization demands and communalist views that are counter to the prevailing social and economic logic. A major challenge to unpacking these conflicts is that both sides strive to frame their positions through unassailable lenses. Municipal politicians and real estate interests argue that it is an issue of sanitation and park usage, while Food Not Bombs activists respond with the moral authority that comes from feeding hungry people and diverting food waste from landfills. If the debate stays at this level, the issues about the political economy of food waste, about inequality, and about the role of public space in private property values do not get addressed. Furthermore, there is a deeply insoluble element to these disputes. If the value of a neighborhood increases by eliminating marginalized people (see Katz (1999) for a discussion of this with regard to New York City’s Grand Central Station), Food Not Bombs groups are not content to live in such an environment. The purpose of their efforts is to transform such social relationships, rather than conform to them.

Summary

Food Not Bombs is a 30-year-old food justice and antiwar social movement based in the principles of nonviolent direct action. Born in the waning years of the US antinuclear movement, Food Not Bombs began in Boston in 1980 as a collective of antinuke activists engaging in local food rescue, sharing the food in solidarity at women’s shelters, public housing projects, and political demonstrations. Food Not Bombs developed into

a decentralized and nonprofessional network of hundreds of local chapters in cities across the globe. Local chapters rescue food, cook vegetarian or vegan dishes, and then share a free communal meal in well-trafficked public spaces with nonsectarian literature about ending war and using social resources for people’s basic needs. Through their nonviolent direct action community meals, Food Not Bombs advocates that communities take action for their basic needs and against the waste of resources for all aspects of war.

Cross-References

- ▶ [Animal Welfare in the Context of Animal Production](#)
- ▶ [Community-Supported Agriculture](#)
- ▶ [Emergency Food System: Soup Kitchens and Food Pantries](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Ethical Activism with Consideration of the Routine of Food Culture](#)
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- ▶ [Poverty and Basic Needs](#)
- ▶ [Right to Food in International Law](#)
- ▶ [Vegetarianism](#)
- ▶ [War and Food](#)

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Food Preparation, Cooking, and Ritual in Judaism

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Introduction

Judaism is one of the world's oldest religions and has a rich history of ethical approaches to food, eating, and cooking.

Although food and eating serve central roles in nearly all of the world's religions, they hold particularly outsized places in Judaism. The lived practices of many Jewish holidays often center on food practices. The daily routines of Jewish living frequently highlight issues of food, specifically the kashrut regulations that proscribe certain foods, types of meals, and their production and preparation methods. Communal and individual approaches to Jewish life in the contemporary world often hinge on the acceptance, rejection, or adaption of food-related practices, ranging from assimilationist attitudes that reject Jewish foodway particularity, to traditionalist

ones that enforce rigid separation (Greenspoon et al. 2005). Ethical questions regarding the appropriate means of producing, preparing, and eating food – and even what stuffs merit the designation of “food” at all – underlie all these issues.

Kashrut

The ethics of Jewish eating begin (and some might argue, end) with *kashrut*, the Jewish laws of food and eating laid out in the Torah (Pentateuch) – the first five books of the Hebrew Bible and the most important text in Judaism. Kashrut, also called the laws of kosher, set out what food Jews may eat; how they may produce, cook, and prepare it; and what the ramifications are for violation of said laws. The basic rules appear in two of the books of the Torah, Leviticus 11, and Deuteronomy 14. Leviticus 11 offers a list of permitted and prohibited foodstuffs. Explicitly permitted are animals that chew their cud and possess split hooves, as well as water-dwelling animals with fins and scales, birds that are not explicitly rejected, and various forms of locusts and other related insects. Numerous animals are explicitly rejected, famously including the pig, but the antiquity of the text makes impossible the precise identification of some prohibited animals with particular species. As numerous scholars have noted – most especially Mary Douglas – the permitted animals seem to occupy privileged positions within each category of animals (Douglas 2003). Split-hooved cud chewers are paragons of land animals, for example, whereas water dwellers with fins and scales serve as exemplars of water animals (see Table 1 below).

Neither Leviticus nor Deuteronomy provides a clear ethical explanation for the prohibition of eating certain animals as food and the permission to eat other ones. The texts merely indicate that prohibited animals are “unclean,” “impure,” or “defiling.” Yet both Leviticus and Deuteronomy do provide theological rationales. Leviticus 11.43 links unclean animals with unholiness and conversely clean animals with holiness. The next

Food Preparation, Cooking, and Ritual in Judaism, Table 1 Permitted and prohibited foods according to Leviticus 11

Explicitly permitted	Explicitly rejected
Split-hooved cud chewers	Camel, daman, hare, swine
Water dwellers with fins and scales	Water dwellers without fins and scales
All birds not explicitly prohibited	Eagle, vulture, black vulture, kite, falcon, raven, ostrich, nighthawk, seagull, hawk, little owl, cormorant, great owl, white owl, pelican, bustard, stork, heron, hoopoe, bat
Winged swarming things that walk and leap on four-jointed legs: locusts, grasshoppers, and crickets	All other winged swarming things
(None listed)	Mole, mouse, great lizards, gecko, land crocodile, lizard, sand lizard, chameleon, four legged crawlers, belly crawlers, many-legged swarmers

verse explicitly calls for Jews to “be holy for I [God] am holy.” Eating clean animals and avoiding unclean ones therefore becomes a religious obligation, an enacting of holy mimesis. In classical Judaism, one follows these laws because God demands it, and because the rules are part of the ritual complex that defines Judaism. A more precise ethical basis of these food laws remained to be developed in the post-biblical tradition.

Several other major sets of biblical laws form the basis of kashrut beyond the set of permitted and forbidden animals. Deuteronomy 14.21, Exodus 23.19, and Exodus 34.26 prohibit the cooking of a young goat in its mother’s milk. This statement – believed by Jewish leaders to be especially amplified since it appears three times – became the basis for the probation of mixing dairy and most types of animal flesh in the acts of cooking or eating.

Distinct from the prohibition on eating certain unclean animals, the biblical text provides no theological rationale. But unlike the rather arbitrary list of permitted and prohibited animals of

Leviticus and Deuteronomy, the prohibition of cooking a young animal in its mother's milk conjured a near-universal sense of ethical reprobation, at least in the minds of the ancient rabbis who codified the kosher system. This combined with the prohibition against the consumption of blood-eating in Genesis 9.4 to result in what Talmudist David C. Kraemer calls "an affirmation of life and a repudiation of death" (Kraemer 2008, p. 14). From an ethical standpoint, Judaism recognizes both milk and blood as the stuff of life and meat as the stuff of death. Not only is a mixing of the two unholy and inappropriate, but the very consumption of blood (life) raises problematic theological and ethical issues.

As the essence and symbol of life, blood belongs to God, not human beings. To eat it would therefore be to proclaim oneself similar to the divine, an act Judaism identifies as idolatrous. Like other ancient near eastern people, Judaism in antiquity called for blood sacrifices offered to the divine. Yet the Genesis text implies that drinking blood violated not only ritual decorum – since it positioned the drinker as similar to God – but ethical standards as well. The same chapter that prohibits blood drinking also prohibits the spilling of human blood on the grounds that God made humans in God's own image (Gen 9.6). The Torah here links the drinking of blood with the crime of harming another person and with a form of symbolic deicide. Similarly, it links the avoidance of drinking blood with respect for the divine image, justice, and profundity (Gen. 9.5-7).

Kosher slaughter and farming regulations provide another avenue for considering the ethics of Jewish eating as rooted in the Torah. Historians of Jewish practice disagree on to what extent these laws were followed during biblical times, but by the Talmudic period (first to fifth centuries C.E.) they had become an object of intense rabbinical interest (Berg 2008). Kosher slaughter, or *shechita*, requires a specific series of actions. First, the slaughterer must be a religious Jew acquainted with the rules of *shechita* as well as observant of the other ritual requirements of Judaism. Second, only an undamaged and extremely sharp blade may be used as the

implement of slaughter. The blade must lack any nicks or other irregularities. Finally, *shechita* requires that the butcher kill the animal with a single deep cut across the neck, severing both the trachea and esophagus (Grunfeld 1982).

While debates continue over whether any method of slaughter can truly be ethical, the mainstream Jewish tradition has historically claimed that *shechita* is a less painful and more humane way to slaughter animals. Today, kosher authorities such as the Orthodox Union position *shechita* as an "instantaneous death with no pain to the animal" (Luban 2012). Importantly, the vast majority of traditionalist Jews such as those who operate and support the Orthodox Union follow the laws of *kashrut* out of ritual and spiritual obligation, and not primarily for ethical reasons. Yet the ethical support for *shechita* serves as an explanation for why God requires this form of slaughter, as well as a buttress to explain and defend the logic and practice of kosher slaughter to non-Jews and to liberal Jews more interested in ethical than ritual practices.

The agricultural laws of the Torah also prescribe a particular ethics of farming. Fields may not contain mixed plantings, and the corners of the fields must be left unharvested so as to provide available food for the poor, travelers, orphans, and widows (Lev 23:22, Deut 24:19). Similar laws required that grapes left on the vine, or olives left on the tree, must be left for such individuals as well (Lev 19:10, Deut 24:21). It is unclear to what extent such laws were actually practiced in ancient times, but throughout the Middle Ages and into Modernity, Jewish agriculturalists did engage in this form of charitable contribution. Today, some Orthodox Jews in Israel continue to consider these laws binding, whereas other Jews opt to follow the spirit rather than the letter of the law, by donating crops to foodbanks.

Talmudic interpretation of the laws of *kashrut* – which subsumes all of these biblical regulations – focus not so much on the ethics of individual practice or universal morality but the notion of proper table fellowship. As Jordan D. Rosenblum has argued, rabbinic interest in food fixated on with whom one could eat (Rosenblum 2010).

The appropriate and ethical answer, the rabbis of the Talmud explain, is other Jews who also follow the laws of kashrut. To do otherwise would be to tacitly permit idolatry and worship of foreign deities. In the nineteenth and twentieth centuries, liberal Jewish reformers would challenge this approach, also on ethical grounds, arguing that excluding gentiles from table fellowship with Jews was an affront to universal human notions of brotherhood. Yet today many Jews still follow the kosher laws. They are hardly a relic of the past, but a living tradition that provides ritual and ethical guidelines to Jews who consider normative Jewish law (*halacha*) binding.

Praying, Feasting, and Fasting in the Jewish Tradition

Kashrut and its interpretation serve as only the beginning of Jewish views of the ethics of food and eating. Talmudic and later rabbinic interpretations, as well as contemporary lay perspectives and creative changes, have resulted in a variety of Jewish ethics of food. Jewish perspectives on the ethics encompass mundane eating, festive eating, and fasting. Prayer and other ritual actions are central to all of these. In fact, one cannot separate prayer from ethics within the Jewish context.

Every Jewish meal begins and ends with a ritual blessing. The precise blessing depends on the nature of the meal. Strictly speaking, only sittings including bread merit the proper Jewish designation of “meal” and receive the full ritual of hand washing, *motzi* (the prayer over bread), and grace after meals. The central act in this ritual is the *motzi*, a short prayer that thanks God for bringing forth bread from the Earth. Alternative prayers address God in thanks for bringing forth grains, as well as fruits of the trees (nuts, apples, etc.), earth (vegetables, etc.), vine (wine or grape juice), as well as a “catchall” prayer that thanks God for creating all other foods. Grace after the meal similarly varies depending on the nature of the meal, but like the *motzi* blessings and its variants, these post-eating prayers focus on the nature of thankfulness and the grace of God.

The food prayers of Judaism serve to foster a system of recognizing the divine hand in the creation and production of food. The prayers explicitly thank God for creating the food and causing it to come forth out of the Earth. As historian David C. Kraemer has written of the Jewish tradition of blessing the meal, “eating will no more be a quotidian act but an act that notices the Creator and His design” (Kraemer 2008, p. 75). The tradition recognizes eating as a form of connecting with the divine and of offering thanks to God for having created a world wherein food can grow and nourish people. Judaism also rejects any idea of informal or unintentional eating. All eating becomes marked with prayers, separated from the other daily activities of life. From an ethical perspective, this marks eating as an intentional act. While certainly the tradition does not explicitly proscribe that Jews be mindful of the farmers, laborers, cooks, and others who produce and prepare the food, the prayers do insist that those eating it become aware that it is not them but rather the divine who created the food and therefore their enjoyment of it must be in the context of thankfulness.

Beyond the scope of normal everyday eating, Judaism also features an extensive tradition of festival eating. Religious authorities, texts, and cultural traditions require and suggest particular eating requirements for holidays such as Hanukkah, Sukkoth, Purim, Shavuot, and of course Passover, the most notable food-related holiday of Judaism. The tradition ascribes particular meanings to foods eaten on each holy day, generally linking the foods to the religious meanings associated with the holidays. Rabbinic sources indicate that the miracle of Hanukkah – the holiday commemorating the rededication of the Second Temple after its desecration by Greco-Syrians – was a single batch of oil that lasted over a week. The tradition therefore calls Jews to eat foods rich in oils, generally fried doughnuts or potato pancakes, depending on the regional variant tradition. Similarly, Shavuot – the holiday commemorating the giving of the Torah – is associated with sweet foods based on milk and honey, the biblical foods associated with the land

of Israel and the sweetness of the Torah. Again, eating becomes not simply a mundane activity but an intentional act of reconnecting with community, history, and tradition. Eating prescribed foods serves as a symbol of being a Jew and following the tradition of the people and religion.

Nowhere is this more evident than the holiday of Passover (*Pesach*), also called the Festival of Matzo (Unleavened Bread). By its very name, the Festival of Matzo clearly places food at the center of the theological and ritual menu. Passover commemorates the exodus of the ancient Israelites from bondage in Egypt and the culmination of that exodus in the receiving of the Torah at Mt. Sinai. Unleavened bread, or matzo, symbolizes this story because the tradition holds that the exodus was so alacritous that the Israelites had no time to allow their bread to rise. Regardless of the historicity of the exodus events – a matter of some dispute among both academics and many liberal Jews – Passover is one of the most celebrated of all Jewish holidays, even among secular and liberal Jews. Some scholars have noted that the holiday's association with food may explain part of that popularity (Weissman 1994, pp. 219–263).

The central ritual of the Festival of Matzo is the removal of prohibited grain and grain products (*chametz*) from the home and the abstaining from all grain products other than matzo and its derivatives throughout the weeklong festival (7 days in Israel and among some in the Reform Jewish community, 8 days otherwise). Like other forms of Jewish eating, Passover transforms eating into an intentional act that connects one to the community and to God. Throughout Passover, Jews must be especially observant of their eating so as to avoid eating or even benefiting from any use of *chametz* – generally defined as foods derived from one of the five prohibited grains: wheat, rye, spelt, barley, and oats. Jews of Central European ancestry also avoid *kitniyot*, various other grains, and legumes similar to *chametz*. Numerous variants exist, but all Jews agree that the essential ritual observance of Passover is the avoidance of these prohibited foods and the intentional eating of matzo, especially through the ritual retelling of the story of the holiday in the Passover Seder.

The Seder not only amplifies the intentional eating found throughout Passover and all Jewish eating, but adds to it an ethical obligation to welcome the stranger to the table and retell the story of freedom from bondage. While it has undergone many transformations over the centuries, the Seder is a ritual meal wherein Jewish families recount the narrative of Passover making use of symbolic foods. Matzo represents the “bread of affliction” and the need to flee from slavery. Other foods such as green herbs and eggs represent the resiliency of life and new beginnings, respectively. Since the middle ages, an ornamental platter called the Seder plate holds these foods and serves as ritual focus of the meal (Cooper 1993, pp. 113–115).

In what is generally recognized as one of the oldest prayers of the Seder, the *Ha Lachma*, the participants of the Seder ritually invoke the narrative of Jewish people as well as situate the Seder as an event intended to convey an ethical teaching and not merely a historical one:

This is the bread of affliction that our fathers ate in the land of Egypt. Whoever is hungry, let him come and eat; whoever is in need, let him come and join in celebrating the Pesach festival. This year we are here, next year may we be in the land of Israel. This year, slaves, next year – free men. (Elias 2000, pp. 53–55)

The ethical position of the *Ha Lachma* is obvious. Matzo is not merely a bread product, but a symbol of slavery and freedom. All who want to eat and observe the festival – debate exists within the tradition of whether this applies only to Jews or any hungry person – are invited to attend the Seder and eat and observe. As numerous Jewish commentators have remarked, this prayer and those like it in the service transform the Seder from merely a meal to a pedagogical device intended to teach the necessity of remembrance, gratitude, feeding the hungry, and empathy for the enslaved (Elias 2000, pp. 52–56).

While feasting may attract far more interest than its inverse, the Jewish fasting tradition is as well developed within the religion as is the festive eating tradition. Judaism identifies six major fast days, the most notable of which are Yom Kippur (the Day of Atonement) and Tisha B'Av (the ninth

of Av, commemorating the destruction of the temples). The reasons for fasting vary by the observance, but generally they fall within one of two categories: repentance and commemoration.

The fast of Yom Kippur represents the most important fast of the Jewish calendar, and most Jews identify Yom Kippur itself as the most important and sacred of all Jewish holidays. Tradition indicates that on Yom Kippur, God issues his final decree as to the fate of all living beings over the coming year. It is a solemn day, filled with prayers and commemoration of those who have died. The Torah identifies the fast of Yom Kippur as one of repentance (Lev 16, Lev 23.26–32) and calls for the Jewish people to afflict themselves and seek forgiveness from God. Refraining from eating therefore becomes a symbol of bodily restraint as well as self-control. While a quasi-magical reading of the fast would see it as an invocation meant to spur divine favor and forgiveness, the tradition understands the fast as a means by which one seeks to purify and purge oneself. In recent decades, contemporary Jews have also reinterpreted the fast as offering an opportunity to empathize with the hungry and have organized food drives and other social justice events oriented around alleviating hunger.

The Tisha B'Av fast by contrast is one of remembrance, as are several of the more minor ones. Here fasting does not symbolize a request for forgiveness but an identification with Jews of past generations and forging of communal ties across generations, time, and distance. Tisha B'Av commemorates the destruction of the First and Second Temples in 586 BCE and 70 CE, respectively. (The tradition ascribes other remembrances to this day as well, though these are the most notable.) Though reasons for the fast vary among commentators, most understand the fast as a form of asceticism meant to recognize the loss of the temples. Fasting thus becomes a form of ritualized mourning for the destruction of tradition, life, and ritual observance engendered by the loss of the temples.

Contemporary Alternative Kashruts

While the laws of kashrut have been fixed for over a millennium in the Talmud and its

interpretations within the Jewish legal corpus (*halacha*), those perspectives are not the terminus of Jewish ethical interpretation of kashrut. Today, progressive or liberal Jews look to vegetarian kashrut and eco-kashrut as contemporary options for Jewish ethics of eating. This is especially true among “post-halachic Jews”: those who take the religious position that the traditional legal and ritual norms of Judaism must change in modern societies. In North America, these groups are primarily found among Jews associated with the Reform, Reconstructionist, and Renewal movements, as well as some secular Jews. More globally, such Jews often identify themselves as adherents of liberal or progressive Judaism.

Historically, Jewish thinkers have compared kashrut to vegetarianism. The Torah describes the Edenic paradise as vegetarian, and Genesis implies that meat eating was granted by God only belatedly. Supporters of “vegetarian kashrut” can point to statements by such respected thinkers as Rashi (1040–1105), Maimonides (1135–1204), and Nachmanides (1194–1270) as indicating that God’s original intention had been for humans to eat a vegetarian diet. In more recent time, Rav Kook (1865–1935), the first Ashkenazi chief rabbi of Israel during the early twentieth century, argued that the kosher laws functioned to lead Judaism slowly back toward vegetarianism, a position that today many proponents of vegetarian kashrut accept (Schwartz 2001, p. 3).

At its heart, vegetarian kashrut envisions the kosher system as a foundation on which to build an entire edifice of Jewish vegetarianism. Following Rav Kook, proponents argue that kashrut in its traditional halachic form existed only as a tool to wean Jews away from meat and toward a more intentional form of eating. Vegetarian kashrut supporters note that kosher laws limit only the production, preparation, and consumption of animal flesh. They look to vegetarianism as the divinely intended goal of the kosher system and envision a Jewish food ethic that puts animal rights, animal welfare, and the human relationship with nature at the center of the religion’s moral compass.

Other contemporary Jews have formulated a movement known as “eco-kosher” as an

alternative to traditional kashrut. Eco-kosher focuses on the means of production far more than the material consumed, unlike either halachic kashrut or vegetarian kashrut. Rabbi Zalman Shacter-Shalomi, the leading light of the American Jewish Renewal movement, coined the term in the late 1970s. Rav Zalman and other proponents of eco-kosher have offered multiple formulations of the meaning of the term, but all focus on the sustainable and just production of food that does as little damage as possible to the Earth's ecosystem, treats agricultural workers with dignity, and minimizes the suffering of animals.

Zalman intended eco-kosher as an evolution that encompassed halachic kosher, meaning that he insisted on following the traditional kosher laws in addition to the new eco-kosher principles. Other proponents of eco-kosher envision it as an alternative or even replacement of traditional kashrut. The American Reform movement's recent publication on the ethics of Jewish eating (*The Sacred Table: Creating a Jewish Food Ethic*) presents eco-kosher in this way, offering it as one option in a "buffet of educated choices" that include halachic kashrut, vegetarian kashrut, environmentally focused kashrut, social justice-oriented kashrut, and feminist kashrut. What unites all of these forms of Jewish eating is the idea of intentionality, ethical eating, and a proclaimed continuity with tradition alongside innovation – though more traditional critics would assail them on that last point (Zamore 2011).

Finally, just as Jews who accept kashrut in either its traditional halachic form or a newer alternative form can claim an ethical foundation to their practices, so too can Jews who reject kashrut. At its heart, the kosher laws function to create a separate Jewish community and establish boundaries of what counts as food, how one eats it, and with whom one can eat. Many secular or nonpracticing Jews reject kashrut on precisely those grounds: that it creates a separation between Jew and gentile and therefore is an unethical form of prejudice. David Kraemer characterizes such choices as "motivated by the desire to remove boundaries between Jews and their

Christian neighbors ... [and] motivated by the opinion that all humans are God's creatures, all members of a single human race" (Kraemer 2008, p. 138).

Judaism's ethical approaches to food and eating are extremely varied (Marks 2010). While rooted in the Torah and Talmud and developed throughout Jewish law and tradition, Jewish food ethics are quite diverse. Yet all approaches to Jewish eating emphasize the centrality of ethical and religious choices in the act of producing, preparing, eating, or abstaining from food. Far from a quotidian act, the Jewish tradition transforms eating into a central practice with far reaching implications.

Summary

Food ethics serve an important role in Judaism. The kosher system (kashrut) serves as its basis, delineating which foods are or are not appropriate to eat. The tradition identifies the act of following the kosher laws as ethical and holy, and as creating a holy community that follows divine mandate. Praying, feasting, and fasting cement food ethics in the daily lives and yearly liturgical lives of Jews. All food is blessed, making eating a sacred act in itself. Holiday feasting and fasting amplify this sense of intentional eating. In contemporary times, a variety of alternative systems of Jewish food ethics have developed. Eco-kashrut and vegetarian kashrut serve as two examples, as do Jewish groups that reject the kosher system on ethical grounds. Jewish food ethics are quite varied but all identify eating as an act of ethical value and not just nourishment.

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Food Riots, Historical Perspectives

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Synonyms

Food boycotts; Food disturbances; Food protests; Hunger riots; Rioting over food

Introduction

As a wave of severe global crises swept across the world at the turn of the twenty-first century, a series of food riots broke out in many developing countries, including Indonesia, India, Mexico, and Brazil. These food riots, often centered on one iconic staple food item such as rice,

tortillas, or onions, usually consisted of looting and pillaging stores, fast food restaurants, and supply depots, blockading farm and supply trucks, or protests in town squares. These items symbolized people's intense frustration and anger at being trapped in a global economic web in which they seem to have no agency. Government officials have been rightfully terrified of the potential for anarchy that exists if people do not get enough to eat, particularly enough of certain foods deemed essential and irreplaceable. Can anything ever stem this tide of need?

Cultural historian Robert Darnton once posed the question, "[Can] riots be understood as something more than mindless violence? [Are] they saying something? [Can] they be read?" (Darnton 1992, p. 44). Building off of Darnton's questions, one asks: Is it possible to make sense of food riots, particularly those in the past, by "reading" them? Can one gain increased understanding by paying attention to the one item – the bread, meat, or rice – that is held up as a symbol? What are the ethical implications of food disturbances when set against the backdrop of Western abundance, and how do these disturbances differ from those in developing nations?

A survey of histories of food riots reveals that scholars have understood public food disturbances in a number of illuminating ways, including as a preindustrial expression of collective action, as a gendered form of collective protest, and as a form of nationalistic display and identity tied to the consumption of material goods. Only a very few have employed a sustained, cultural exploration of the very foods at the core of the disturbance (the bread, meat, rice, or milk) – the deprivation of which stirs people to the point of collective action. Such an examination can provide rich information about the connection between food, cultural/national identity, and the ethics of policies that lead to scarcity and abundance.

To begin exploring these questions, it is important first to examine the relationship among collective identity, food, and collective protest. Food, at the base of civilization, contains deep, multilayered meanings and is a strong component and shaper of collective as well as an individual sense of identity (Narayan 1995).

Whether unprocessed or minimally processed foods (wheat, cooking oil), industrially manufactured items (Coca-Cola or commercially produced baby food), or handmade creations (tamales, holiday cookies), people imbue particular foods with deep-seated meaning and emotion, regardless of whether they are involved in its production (farmers, processors) or merely its consumption (tea drinking in Europe or North America). How and why these foods accrue special meaning can vary widely: method of preparation, tradition, particular “flavor principles,” perception of purity, religious or political significance, signification of wealth or status, or any combination of factors. Whether through government intervention or the vicissitudes of a “free market” economy, a restriction of the availability of these meaning-rich foods carries significant social weight and can function as a catalyst for collective protest. This continues to prove true not only in relatively isolated communities, but in the ever-changing global villages of the twenty-first century (c.f. Bell and Valentine 1997, p. 191).

For the purposes of this inquiry, “food riot” can be defined as any gathering, whether planned or spontaneous, that may begin peacefully (such as a “food protest”) but evolves into disorder, leading to loss of control, violence, bodily harm, or damage to property. The terms “food riot” and “food protest” can be understood and discussed together under the phrase “food disturbance” (Gilje 1996, p. 4). Food disturbances appear when people lack complete control of their own food supply: either they do not grow all or some of it, they are taxed by landlords or governments, prices (set by others) are beyond their notion of a “just price,” or they are unable to freely determine the disposal of any surplus. Developing countries are more prone to food disturbances than industrialized ones: countries with developed transportation and communication systems, and the ability to stockpile food for times of need or subsidize its price, are more able to quickly redistribute food as needed. Food riots were especially frequent in the sixteenth through eighteenth centuries, then declined dramatically in

number until the 1970s, when riots began again in earnest in developing countries as a result of severe economic austerity measures, including the removal of subsidies on food (Walton and Seddon 1994, p. 24).

Examining riots can reveal much about the political, economic, social phenomena of an era and allows better understanding of people who are neither wealthy nor politically prominent – the people whose lives do not normally become a part of the public historical record. Scholars have argued that despite the apparent unpredictability of time and place of riot and level of organization of rioters, an underlying order appears to exist: food rioters often act in logical, deliberate ways. That is, crowds do not just pillage any store, for example, but those stores that they feel have unfairly inflated prices. Historical and cultural context appears to play a key role in rioting.

Historians have generalized riots into three main categories: first, a blockage or *entrave* where protesters blocked shipments of grain or other foodstuffs; second, the price riot or *taxation populaire*, where peasants seized the goods from a retail shop whose prices were deemed too high, which would then be sold for a “just price,” and often (amazingly) the money paid to the merchant; and finally, the market riot, where stores and supply depots are looted to protest high prices or the lack of goods (Tilly 1996, pp. 231–234; Thompson 1971, pp. 76–77; Gilje 1996, p. 6; Walton and Seddon 1994, pp. 25–26). Modern-day riots tend to conform to the latter category of market riots, characterized by looting and destruction of property. Additional twists include calculated demonstrations where the food at issue is ceremoniously dumped on the grounds of, for example, the local government headquarters. Twentieth-century food boycotts have proven particularly effective when centered on one item such as milk, bread, or grapes or on a single manufacturer, such as Nestlé (Linden 1994). Boycotts can evolve into full-fledged food riots if participants harass or attack those purchasing a targeted item or frequenting a targeted store.

A Historiography of Food Riots

Why do people riot over food? The obvious answer, that they riot because they are hungry, *fails*. Most who are poor and hungry do not riot. Moreover, why do people riot over particular foods and not others? Tortillas not chiles? Meat not cheese? What intervening variables determine who riots? As mentioned, historians have analyzed and explained food riots in the following ways: as collective action representing the “moral economy” of an era, as part of a so-called female consciousness, and as an exhibition of nationalism/patriotism.

The “father” of food riot history, the British Marxist historian E. P. Thompson, in 1971 published the article, “The Moral Economy of the English Crowd in the Eighteenth Century.” With “The Moral Economy,” a witty, erudite, and detailed analysis of food riots in England, Thompson provides a “thick description” of food rioters’ motives in preindustrial England, an era when subsistence riots happened with great frequency. Thompson, using class as his organizing principle, argued that English peasant bread riots were symptomatic of a society caught between changing economic and political forces, of an England in the midst of moving from a looser collection of landed gentry to a stronger state, and from a mercantilist, feudal economic system to one of laissez-faire market capitalism. As England moved from a feudal system that provided bread at “just prices” (a reduced price for the poor as part of the communal moral ethos) to a market economy, which abandoned the notion of the just price, peasants rebelled and rioted. To the rioting peasants, the new system abandoned the long-held social pact that entitled them to affordable bread. People, argued Thompson, rioted not only because of hunger, but also out of a sense of injustice. Conflicts, Charles Tilly concurs, “occurred not so much where men were hungry as where they believed that others were unjustly depriving them of food to which they had a moral and political right” (Tilly 1975, p. 389). Eric Hobsbawm, similarly arguing that food disturbances were a preindustrial mode of exhibiting anger over economic and social inequity, called

these “collective bargaining by riot” (Hobsbawm 1959, p. 110). As the peasantry became the industrialized working class, conflicts over food were absorbed into and displaced by organized labor strikes. This explains why the number of food riots diminished considerably in the nineteenth century and beyond. Although scholars have taken issue with Thompson’s moral economy theory – some insist that the theory should focus on the newly emerging middle-class dissatisfaction, while others point to prevailing anti-Semitism and local begging customs as factors or see the community or national context as more important – nearly all historians studying food riots pay homage to E. P. Thompson for his path-breaking work in creating a multidimensional understanding of food rioting and rioters (Arnold 1979; Bohstedt 1992; Bohstedt 1988; Booth 1977; Gailus 1994; Kaplan 1985; Rogers 1987; Shashan 1980; Tilly 1983; Taylor 1996; Williams 1984).

Since women as well as men participated in food riots, in recent decades many historians have employed gender as a category of analysis (Davis 1996; Engel 1997; Frank 1985; Hufton 1971; Hyman 1980; Kaplan 1982; Ryan 1989; Smart 1986; Taylor 1996). While not disagreeing with the moral economists, historians such as Temma Kaplan, Phyllis Hyman, and Dana Frank point out that despite the decreasing number of food riots in the nineteenth century, food disturbances nevertheless continue. Moreover, they argue, food rioting takes on a noticeable female persona, in part because labor unions largely excluded women. Temma Kaplan, studying early twentieth-century food riots in Barcelona, argues that women participated in food riots as an extension of their roles as caregivers for home and family. Women who accepted the traditional division of labor, argues Kaplan, could be radicalized to action in the public sphere when prevented from fulfilling their domestic duties, particularly the feeding and care of their families. Female participation in food disturbances “politicize[d] . . . the networks of everyday life,” as women extended their domain and sense of obligation into the public sphere (Kaplan 1982, p. 545).

Dana Frank and Paula Hyman, studying early twentieth-century food riots in New York City's Lower East Side, concur with Kaplan. Hyman examines a 1902 kosher meat boycott organized and dominated by women that at one time brought crowds of up to 20,000 protesting the high prices of meat. The boycott frequently erupted into violence, including women breaking into butcher shops and flinging meat into the streets and assaulting not honoring the boycott. While the women "did retain a traditional sense of a moral economy in which food should be available at prices which the working classes could afford," explains Hyman, in a nod to E. P. Thompson, "they were not simply expressing traditional forms of cultural resistance to industrial society imported from the Old Country," but providing evidence of a "modern and sophisticated political mentality emerging in a rapidly changing community" (Hyman 1980, pp. 97, 92). Dana Frank, examining the 1917 cost-of-living protests, similarly sees an emerging female consciousness. As New York's immigrant Jewish women protested against rising food prices, explains Frank, they "demonstrated their own perceptions of political economy: who they believed was in power; what they thought should be done to alleviate their distress, and, most importantly, how they believed they as women could affect the economic system in which they were enmeshed" (Frank 1985, p. 256. See also, Frieberger 1984).

While some have returned to topics such as the French Revolution to employ gender as a category of analysis (Bouton 1990), not all historians regard gender as a useful framework when examining food disturbances (Bohstedt 1988). For example, Iain J. M. Robertson argues that when investigating women's participation in food riots, at least those in turn-of-the-(nineteenth)century Scotland, using gender as a category of analysis obfuscates the fact that men and women held notions of ownership over the land equally. Thus, when denied ownership of farmland deemed to be theirs, they rioted in the same way for the same reasons. Assuming that women's protest is distinctly different from "normative" masculine protest, and derived

from their household role rather than from an underlying legitimizing ideology shared with their male counterparts," argues Robertson, does a disservice to the women who participated as equals with men (Robertson 1997, p. 187). Robertson neglects to discuss, however, those food disturbances that were comprised largely or exclusively of women.

Along with the moral economy thesis and gender as an analytical framework, *one can* gain insight into the meaning and nature of food riots *through* the examination of cultural meanings of consumption and their connection to nationalism. Two American colonial historians, Barbara Clark Smith and Timothy Breen, have examined food disturbances before and during the American Revolution as evidence of a growing sense of nationalism. In her study of over 30 food riots during the American Revolution, Smith sees such disturbances "at the intersection of several streams of historical experience" and acknowledges as pertinent both the moral economy and the female consciousness theses (Smith 1994, p. 3). Not only do they contain "elements of 'the common people's politics' in England and America," in their focus on the just price, but since women conducted nearly one-third of riots, Smith argues, they also must be examined in light of how women participated in community life (Smith 1994, p. 5). Looking at food riots as directly stemming from the Revolution, as "a patriotic action" not dissimilar from facing the British army (Smith 1994, p. 6), allows understanding of how food rioters, through their actions, "situated themselves as participants in the patriot cause" (Smith 1994, p. 8).

While Smith uncovers elements of nationalism in the act of rioting, T. H. Breen recognizes a growing sense of nationalism developing through the item (including food items) being rioted over. In his 1988 article, "'Baubles of Britain': The American and Consumer Revolutions of the Eighteenth Century," Breen explores the relation between the growth of national consciousness and the American rejection of the "Baubles of Britain." While noting the importance of women in colonial food disturbances, Breen focuses his attention on the fact that

manufactured goods imported from Britain, for the first time readily available to so many people, resulted in “the standardization of taste” (Breen 1988, p. 82). In the decades leading up to the Revolution, consumer goods took on “a radical, new symbolic function” of political proportions. This politicization provided a “shared language of consumption,” providing a common experience and knowledge base for colonists of all classes, uniting them enough to wage war against the mother country (Breen 1988, p. 76). While Breen does not limit his analysis to food but explores the meaning of consumer goods of all kinds, Breen does focus on the struggle over tea – for Americans one of the best-known and loved stories of the Revolution. “Throughout America,” Breen relates of the infamous Boston Tea Party, “the ceremonial destruction of tea strengthened the bonds of political solidarity” (Breen 1988, p. 99).

While this admirable work on food riots and protests contributes much toward explaining people’s *mentalities* and motives for rioting, missing is an in-depth examination, a Geertzian “thick description,” of the foods themselves. A sustained, cultural exploration of the very food at the core of the disturbance – the tea, meat, milk, or even such modern industrialized products as Coca-Cola – can provide rich information about the connection between food and cultural/national identity. A foray into the meanings of the foods themselves in their historical and cultural context can add yet one more important layer of understanding.

In addition to Breen, several of the works previously discussed do hint at such analysis. For example, although Dana Frank focuses on gender, she does touch on the symbolic significance of the foods being rioted over. While the price of food seems to have been high in general, according to Frank, the Jewish women were particularly focused on boycotting chicken, onions, potatoes, and fish. Frank writes:

[M]any women initially joined out of a sense of limits reached, as in the case of the woman who asserted her continuing right to butter. Those limits boiled down to an unwillingness to altogether abandon traditional foods. Potatoes,

onions, and chickens were dietary staples to which they believed they had a basic right if they were to fulfill their responsibility to truly sustain their families. More importantly, the rituals of preparing kosher foods played a crucial role in the religious and cultural self-definition of New York’s immigrant Jewish people. . . . Women bought and served traditional foods not only out of mere habit, but also because those foods expressed their commitment to a religious life (Frank 1985, pp. 276–277).

As Frank notes, these foods were important, even crucial, parts of the Shabbat dinner. Without them, could there even be a Sabbath seems to be the unspoken question. Fish, Frank somewhat inadequately explains, was boycotted because it could not be served without the boycotted onions. Moreover, the foods city officials tried to introduce as substitutes reveal all the more how culturally important chicken, onions, potatoes, and fish were. The large quantities of rice, smelt, Brazilian beans, and hominy that the city provided as substitutes were (not surprisingly) unequivocally rejected. A thick description of these foods in their historical and cultural context could provide further compelling analysis. Paula Hyman, in her gender-focused analysis of the New York City kosher meat boycott of 1902, similarly points to cultural elements: “The neighborhood, a form of female network, thus provided the locus of community for the boycott. [A]ll were giving up meat together, celebrating dairy shabbosim together, and contributing to the boycott fund” (Hyman 1980, p. 99). Hasia Diner examines the cultural and social meanings of the turmoil and contestation that existed among Jewish immigrants, including such food disturbances as boycotts and riots (Diner 2001). Finally, as anthropologist Sidney Mintz illustrates in his exceptional work on the historical, cultural, political, and economic meanings of sugar, there is much more that could be done on the cultural meanings and functions of tea – itself purely a product of British colonialism – in colonial America that can provide even more evidence of its centrality to life at the time and thus the catalyst for boycotts, riots, and even revolution (Mintz 1985).

While this survey of the literature of food disturbances is not exhaustive, Benjamin Orlove's article "Meat and Strength: The Moral Economy of A Chilean Food Riot" is the only sustained cultural analysis of a riot in terms of the food being rioted over identified to date. Orlove's work builds on Thompson's moral economy theory to argue that in 1905 the middle classes of Santiago, Chile, rioted over rising food prices because it prevented them from purchasing their accustomed quantity of meat. In this historical and cultural context, in this particular "moral economy," (Orlove 1997, p. 255), the ability to consume meat reflected one's place in the rigid social and political hierarchy of Chile. No longer being able to afford meat "undercut a deeply held sense of [Santiagoans'] social position" (Orlove 1997, p. 256). Orlove argues that "It is the distinctiveness of the specific moral economy [of Chile in the early 1900s] that allows a piece of beef to make the difference between an acceptable and unacceptable pot of stew" (Orlove 1997, p. 260).

Cultural Meanings of Food in Food Disturbances: An American Backdrop

It is possible to point to food riots in recent US history on which to focus a sustained cultural analysis of the foods involved. In comparison to most other countries in the world, the United States ranks high if not the highest in the number of calories per person available for consumption in the food supply. Food problems in the United States are less about hunger and more about health deficiencies resulting from too much food or too much of the wrong kinds of food.

Any analysis, then, of food disturbances in the United States must be made within the backdrop of the entrenched notion of abundance. Economic historian David Potter's 1954 study of American culture and politics in light of the abundance of material wealth, *People of Plenty*, argues that the United States and its citizens have been shaped, blessed, but also at times intellectually and socially hindered by living in one of the most resource-rich and economically successful

countries in the world. This long history of plenty – a product of both natural resources and technological innovation – has shaped notions of such abstract terms as "freedom," "democracy," as well as immigration, foreign policy, and assumptions about individualism. As ideas such as "abundance" and "democracy" are conflated, many Americans (and, indeed, many immigrants to the United States) (mistakenly) equate such political notions as liberty and equality with capitalism. Other countries' experiences do not suggest the same equation. Even though all Americans have not partaken of this abundance, Potter insists that this promise of prosperity has shaped both the culture at large and individuals in particular. Potter attributes low political activism and voter participation, the lack of a viable socialist movement, and the American myth of classlessness to this abundance, despite the ever-growing economic disparity between rich and poor (Bentley 1995; Potter 1954).

Food is a central element of the American brand of abundance. Food disturbances can differ in shape and context between industrialized and developing countries. In the 1930s and 1940s, for example, farmers in the United States protested the removal of price supports, women boycotted dairies over high milk prices, and the public decried the destruction of edible grain and pork during the Depression. Other food disturbances have occurred since then, but most often in the form of boycotts and hunger strikes to protest and publicize a particular social or political cause (Gilje 1996, pp. 149–169; Poppendieck 1986; Bentley 1998, pp. 56–58). While significant, these are not the food riots of hungry, angry people hoping they have enough food to feed their families. For example, late-1990s riots on college campuses over restrictions on alcoholic beverages ("Student Rioters Demand the 'Right to Party'") need to be analyzed as "food disturbances" not only within this context of abundance, but against the unique backdrop of the history and culture of alcohol in the United States: the temperance movement, prohibition, American Protestantism, fears of non-Protestant immigration, and social and symbolic meanings of alcoholic beverages (e.g., Edmunds 1999; Fuller 1996).

While Potter's ideas are significant and compelling, they are subject to debate. For example, Mark Weiner, in his exploration of Coca-Cola's rise to becoming a totem drink During World War II, effectively details the cultural, social, political, and economic significance of Coke in the United States during the war and addresses the connection between consumerism and democracy ("Consumer Culture and Participatory Democracy: The Story of Coca-Cola During World War II,"). Weiner queries: What does the promotion of a highly sugared, caffeine-laced soft drink mean? Exploring what corporate image makers wanted Coke to represent to Americans and what Coke actually meant to civilians, distributors, and soldiers, Weiner describes the influence of commercial capitalism on democracy not as largely negative, as Potter and others generally conclude, but as complex and layered in its meanings. As advertisers, American corporations, and the US government cooperated to rally the American home front behind the war effort, Weiner *shows* how corporate conglomerates defined war aims in terms of commodities. Yet, Wiener argues, the soft drink gained this prominence in part because Coca-Cola held important personal meanings for many Americans, to the extent that it stirred political action and symbolized powerful ideas about American democracy.

In demonstrating the iconic nature of Coca-Cola, Weiner convincingly argues for the cultural importance of the soft drink in the lunch counter sit-ins of the post-World War II Civil Rights era. Following Breen's lead, Weiner sees the possibility for "participatory democracy" existing in consumer goods. In this case, democracy became the right to sit at a drugstore lunch counter and order a cold glass of Coke, something not available to African-Americans under the Jim Crow laws of the South. Being denied access to the lunch counter at Woolworths symbolized in part the denial of full citizenship to African-Americans (Weiner 1996).

There is plenty of work to be done exploring the cultural meanings of foods in food disturbances not only in the United States but globally as well. Historians of Europe, for example, have

employed the backdrop of World War I and II to detail fine accounts of bread riots in Russia and of women's protests over food scarcity in WWI Berlin and in 1942 Vichy France (Engel 1997; Davis 1996; Ryan 1989). Yet there is room for so much more. One cannot think of food disturbances in European countries without mentioning the late-1990s protests by the French over American tariffs on foie gras. Images of a ransacking of a McDonald's and of French chefs and restaurant owners throwing food at the French Parliament to demand lower taxes are prime moments for cultural analysis ("Chefs Protest Tax"; "Farmers Protest"). Also, ripe for exploration are the cultural and symbolic meanings of the rice, tortillas, onions, and bread of the 1990s food riots, as well as such food disturbances in history as the salt demonstrations in 1940s colonial India. Such examinations will reveal much about the ethical implications of food riots from a historical perspective.

Summary

A survey of histories of food riots reveals that scholars have understood public food disturbances in a number of illuminating ways, including as a preindustrial expression of collective action, as a gendered form of collective protest, and as a form of nationalistic display and identity tied to the consumption of material goods. Only a very few have employed a sustained, cultural exploration of the very foods at the core of the disturbance (the bread, meat, rice, or milk) – the deprivation of which stirs people to the point of collective action. Such an examination can provide rich information about the connection between food, cultural/national identity, and the ethics of policies that lead to scarcity and abundance.

Cross-References

- ▶ [Access to Land and the Right to Food](#)
- ▶ [Food and Class](#)
- ▶ [Food Boycotts](#)

- Free Trade and Protectionism in Food and Agriculture
- Judaism and Food
- Political Consumerism: Consumer Choice, Information, and Labeling
- War and Food

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Food Risk Communication

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Synonyms

Communication in the alimentation sector;
Communication on food issues; Food risk
discourse

Introduction

The alimentation sector, as other types of industries, has to constantly respond to the changing conditions of modern times. The most important determinants responsible for alternations are connected with the reality of a contemporary epoch. First of all, the twenty-first century is

influenced and shaped by the growing role of new technologies. Thus, the Internet, offering fast communication to a relatively large number of addressees, becomes an important medium in contacting current and potential stakeholders in the food industry. Secondly, the mobility of modern times concerns not only consumers but also food products since nowadays customers may have access to comestibles coming from very distant countries. In this case, such aspects as proper transportation, storage, and methods of dish preparations should be treated with great consideration. Thirdly, modern agriculture differs from the one that could have been observed in the previous centuries; the development of, among others, modern medicine, technology, and biology has changed the ways plants and animals are farmed. In addition, technological advancements have altered the ways of preparing, serving, and storing food. Furthermore, modern lifestyle has led to a new understanding of consumption and nutrition and the role of food in one's life. Taking all the mentioned issues into account, it is communication that plays a very important role in the alimentation sector, offering information how food is (and how should be) manufactured, transported, stored, and consumed. Analyzing all aspects of food issues, various hazards are connected with every stage of food production, distribution, and consumption, and, consequently, food risk communication is crucial in communicating alimentation challenges and threats to diversified groups of stakeholders, including, among others, food producers, public authorities, media, local communities, and various consumers.

Defining the Term Food Risk Communication

Discussing the place of communication in the discourse on alimentation threats, food risk communication, risk assessment, and risk management constitute the essence of food safety risk analysis. As far as the elements of food safety inquiry are concerned, risk assessment can be described as the process of evaluating risks by

applying both qualitative and quantitative approaches, coming from various disciplines, such as social studies, humanities, management, economics, biological and chemical domains, etc. Regarding risk management, it concerns the estimation of available options connected with risk avoidance and the assignment of control strategies to ensure protection. Since risk communication is needed to define and implement best management decisions (FAO/WHO 2001), interactions focusing on food risks are connected with creating and incorporating methods related to food management. Thus, food risk communication can be defined as a set of tools responsible for creating, implementing, executing, and controlling aims, strategies, and procedures to deal with food-related threats. Looking at this issue from the perspective of processes and stages, food risk communication is a term that encompasses various notions related to the chain of comestibles, especially the potential and real dangers of food production, preparation, distribution, storage, consumption, and utilization. Thus, food risk communication encompasses various forms of comestibles, from, e.g., the state of being a grain, through the periods of fruit and dish, to the stage of organic waste. All the mentioned “embodiments” of food are potentially subject to the discussion of challenges and threats in the sector of comestibles.

Elements of Food Risk Communication

As far as elements of risk communication are concerned, they can be divided into *care communication*, *consensus communication*, and *crisis communication*. In the case of care communication, discoursers have to take into account the lifestyle of diversified audience to adjust risk messages. Analyzing consensus communication, communicators have to observe the opinions, anxieties, and beliefs of stakeholders. Regarding crisis communication, the culture of a target audience should be taken into account in preparing and disseminating messages on crisis (Lundgren and McMakin 2009). Applying the mentioned typology, the following classification for food

risk communication can be created. *Food care communication* encompasses diversified risks related to food consumption. Thus, such notions as food selection, ways of preparing food, and places of consumption determine food care communication. Thus, consumers should be informed how improper ways of preparing dishes may lead to health hazards. The next element, *food consensus communication*, involves opinions, knowledge, and fears regarding food. Consequently, the ways risks are perceived by various stakeholders should be visible in the applied communication tools and strategies. Moreover, the discussion on threats should be tailored to stakeholders’ interests, knowledge, and capabilities. For example, information on food-borne diseases is constructed in a different way when directed at specialists and when the general public is addressed. On the other hand, in *food crisis communication*, speakers have to observe such issues as the culture of a target audience in communicating information on food risks. It involves, e.g., taking into account the type of farming in a given country, climate conditions that influence food production and storage, eating habits, and dietary preferences. Thus, the cross-cultural aspect of food risk communication involves taking into account individual and group differences as far as, e.g., the attitude to risk and the way it is communicated are concerned.

Participants in Food Risk Communication

The participants of discourse on food risks can be divided into different ways. One typology involves the role they play in the comestible chain. Private food producers include both individual farmers or producers who perform their duties mainly themselves as well as companies and manufacturers who operate on the food market on a large scale. Another group encompasses public authorities who have some executive power over food producers. Their activities in the food sector may involve, among others, introducing new legal regulations concerning comestibles or exercising control over food production.

The next important group constitutes of distributors who serve the function of intermediaries between producers and customers. Moreover, media belong to active participants in the food chain since both standard and novel methods of mass communication aim at informing individuals about challenges related to the food sector. A local community encompasses the group of stakeholders that is not necessarily involved actively in the food chain, but it is interested how the performance of food producers influences their community (potential pollution of the local environment, more jobs for local people, etc.). It should be stated, however, that many food stakeholders constitute consumers themselves. This type of participants includes the group of active users of a food product as well as the category of potential customers who may opt for it in the future. Customers can be further subcategorized by taking such aspects into consideration as age, gender, marital and economic status, etc. Another method of classifying contributors to food risk communication is connected with how active various stakeholders in the discourse on food threats are and which stage of information dissemination they participate in. For example, food health authorities play an active role in creating information on risks, whereas media, including new social media, are responsible for information spread. It should also be stated that the role of participants should not be limited by any factors. For example, knowledge of a language should not restrict the access to important information. Thus, in the case when individuals represent different linguistic communities, attention should be focused on how messages should be communicated to address various language groups. The same concerns people with disabilities. Messages should be prepared and disseminated in the ways that make disadvantaged groups access the data on food risks. In addition, an important notion in food risk communication is related to the position of interlocutors. Thus, in the case of food risk discourse, it should enhance the dialogue between food authorities and food stakeholders. Since active communication with stakeholders is especially important in risk and crisis communication

(Bielenia-Grajewska 2011; Lundgren and McMakin 2009), mutual engagement in discourse is crucial in food-related risk situations, such as food poisoning and food-borne diseases.

Topics in Food Risk Communication

Popular topics in food risk communication involve the following issues: probability that past food-related problems may reappear, dangers related with different stages in food cycles, effects of food-related risks, and trust in food-related aspects of modern life. As far as the scope of interest is concerned, communication regarding food risks concerns various issues, such as food irradiation (Thompson and Knight 2006), genetically modified food (Qin and Brown 2006), food recall (Nucci et al. 2009), food contamination (Jacob et al. 2011), food-borne diseases (Bielenia-Grajewska 2014), food allergies (Rachul and Caulfield 2011), and food safety regulations (Winickoff and Bushey 2010). The interest in topics depends on the target audience; there are issues that are potentially directed at the general audience, whereas other notions focus on the needs and expectations of a selected community. Some of them attract a relatively large number of stakeholders (e.g., food-borne diseases, food additives), whereas some of them receive the attention of an interested community (e.g., food poisoning in a local bar or a canteen). For example, taking into account, e.g., the contamination of food for babies, the groups primarily interested in this issue are parents, babysitters, owners of nurseries or kindergartens, and others connected in some way with feeding young children. It should be stated, however, that a topic that was supposed to be of local interest often becomes an issue of global interest. It may be the case of food-borne diseases that start in a small locus (a bar, a canteen, a shop) and then turn out to affect a relatively large number of individuals, located in various settings and coming from different backgrounds. Taking into account the mentioned topics discussed in the literature of risks related to agriculture and food business, several of them have received broad coverage in the press. Discussions on them are often

accompanied by information campaigns on risks and threats related to food consumption conducted by either producers or public authorities. Topics that engage a relatively large number of potential interested parties are food-borne diseases, such as *Escherichia coli*, BSE (bovine spongiform encephalopathy), salmonella, or listeria, that receive broad coverage in the international press when new cases are reported. Another popular discussion point is the role of modern technological advancements in food production. These topics include GMO (genetically modified food), the role of pesticides in farming, and the usage of additives in food.

Selected Cases of Food Risk Communication

The cases related to food risk communication can be classified, among others, by taking into account their nature. One of them is the coverage of diseases that have rapid and violent outbreak. Food-borne diseases belong to this group. An example of food risk communication case can be the outbreak of *E. coli* epidemics in Germany in May and June 2011. The epidemics started in Hamburg, and later 16 countries reported the cases of this rare serotype of *E. coli*. Many people were affected by the disease; at least 50 individuals died, more than 4,000 were sick, and 852 suffered from kidney-damaging hemolytic uremic syndrome (HUS). As far as finding the cause for outbreak is concerned, since patients reported eating vegetables, crude vegetables were the first suspects of the epidemics. Laboratory tests proved that pathogenic *E. coli* was on Spanish cucumbers and, consequently, these vegetables were first associated with this outbreak. However, further tests showed that the bacteria found in these cucumbers were not responsible for the epidemic outbreak. Thus, researchers and public authorities had to continue their investigation in searching for the comestibles that caused epidemics. The European health officials checked more than 10,000 samples of food, but the outbreak strain was not detected. Another method led to the uncover of the source of infection; checking bills from company cafeterias

where the patients were eating helped to discover that the served sprouts were the cause of illness. Thus, the investigation was further focused on how sprouts were infected. As far as food risk communication is concerned, some items turn out to be especially important in the coverage of this *E. coli* outbreak. First of all, sprouts were overlooked by patients in their description of what they have eaten. Thus, other food products were originally investigated by researchers and officials. Secondly, such information sources as menus, shopping lists, and bills are very important in investigating the sources of outbreak since they can be studied independently of what patients report (Flynn 2011). Thirdly, some vegetables were misidentified as the source of outbreak, and after further tests, the responsible factor of epidemics was found out. Thus, different channels of food risk communication were constantly updated to inform stakeholders about the newest findings related to the situation in focus and how investigation was conducted. It should also be added that due to the high mobility of people and products, information on *E. coli* outbreak received vast coverage in international media. Thus, this case shows that food risk communication should encompass different research materials as well as diversified information channels to keep the broad public informed on threats in the alimentation sector. Another group of cases is related to issues that are not as dynamic in character as the above-discussed example of food-borne disease but are characteristic of long-term influence on human beings. The examples include using additives in comestibles. These issues receive regular coverage in the press and in scientific publications, often following discussions on new regulations of colorants or preservatives, of natural and artificial origin, used in food production. Such data leads to customers being more informed about the food they consume and offer.

Food Risk Communication and Types of Risks

Food risk communication can be viewed from the perspective of threats related to domains

associated with different stages of the alimentation chains. Thus, one typology can encompass the risks associated with farming, food production, and food consumption. For example, *farming risks* can include various threats connected with the extensive use of pesticides, damages done by insects, or natural disasters. The second group, *food production risks*, encompasses the hazards connected with polluting or spoiling food in the processes of manufacturing comestibles. This element of typology includes producing food outside the factories (e.g., at home). The third category, *food consumption risks*, are associated with improper storing or serving food. The mentioned risks can be investigated further, by taking their nature into account. For example, *institutional risks* may enclose the decision of authorities (or its refusal) about subsidies or other forms of institutional help. *Market risks* include the factors responsible for successes or failures of products. For example, due to changing dietary preferences of the general public, there can be a lack of interest in some offered comestibles. In addition, *natural risks* environ threats connected with natural disasters or performance of animals. An example of such a risk can be the increase of population of some insects or animals that consume corn or the flood that damages the fields. *Financial risks* involve problems with access to credits, high interest rates, and irregular payment flows. An example of this type of risks is the delay in payments for sold food products. *Technological risks* involve the difficulties in having access to technological advancements. Apart from the external risks, food risk communication is also connected with threats on the personal level. *Individual risks* are directly connected with the performance of the person responsible for a given stage in food production. To such risks may belong the following examples: wrong decisions made by the farmer or a longer illness of a farmer (especially in the case of small farms run by one person). Food risk communication can also be discussed by taking into account types of risks. Since food risks can be classified into imaginary and real ones, the way they are communicated is also different. As far as the ones with no scientific record are

concerned, they comprise individuals' attitudes to some food products and their opinions about their negative effects. One of the unproven fears toward novel comestibles is called *neophobia*; individuals who are neophobic about new food think it may be toxic. It may concern toddlers and young children as well as adults. As far as the group of adolescents is concerned, neophobia is greater among old people and those of low educational level (Frewer 2012). In this case, the role of information is crucial in showing people facts connected with food that may help them opt for new comestibles. Another important notion is individuals' past experience with food. Satisfaction or dissatisfaction with previously eaten products determines their future selections. Apart from the mentioned social determinants, attitudes to risks are shaped by individual perceptions. Some people may think they are less prone to risks than other individuals, and some are more pessimistic about health concerns than average representatives of a given group. It is especially visible in the case of food-borne diseases and the attitude of affected parties to food risks. After becoming acquainted with news on food-borne diseases, individuals may feel that risks do not concern them since a different geographical region is mentioned or a different age group is described as the one who has suffered during pandemic outbreaks. The attitude to food risks also depends on individuals' health and dietary requirements. For example, people suffering from food allergies may find some substances dangerous for their health in a product being safe for other individuals. Another feature characteristic of risk perception is the tendency to shed responsibility on other people. According to some studies on the meat industry, customers think that farmers are more accountable for safety than they are in reality, whereas farmers think customers are more responsible than consumers believe they are. Consequently, farmers and consumers perceive their role in the food system as less responsible than it really is. In addition, consumers think that the highest responsibility is located at the middle level in the meat food chain, whereas farmers think that the later stages in food production are the most responsible ones (Erdem et al. 2012).

Sources of Information on Food Risks

Taking into account the type of information diversified stakeholders are looking for, various information sources can be enumerated. The channels that are used for communicating risks related to food consumption are different. Their selection depends on target stakeholders as well as the type of food risks that are going to be communicated. Discursive methods can be classified as traditional and modern ways of communicating food risks. The traditional ways of gathering information encompass, among others, books, scientific journals, and brochures, whereas the modern ones include social media and various online methods of communication. Regardless of the variety of information on food risks, food packages belong to the most often used sources to obtain data on food characteristics. Consumers read labels to search for details on expiry dates, list of ingredients, and characteristics of nutritional elements. Apart from labels, individuals may use scientific and press articles to access information on comestibles they are looking for. Risks are likely to become a topic of interest in media since they often rely on the both verbal and nonverbal elements that strengthen messages. As far as the strong visual impact is concerned, a text may include, e.g., pictures of suffering (Bennett 2001). Moreover, food risks concern everyone, directly or indirectly, depending on which type of food danger is taken into account. In addition, food risks are very difficult to judge, and the number of those who are likely to suffer is hard to estimate. Thus, the mentioned features also make it a more dramatic topic. With the growing popularity of new technologies and the Internet in the reality of the twenty-first century, such tools of communication as e-mails, discussion forums, and other forms of social networking become the place of information exchange on food risks. The Internet offers individuals the possibility to obtain data when they do not have traditional media (e.g., newspapers, radio programs) at their disposal, for example, during a trip. Moreover, such a piece of information can be distributed quickly and at relatively low cost (Bielenia-Grajewska 2011). Thus, online applications

facilitate food risk communication with a relatively large group of interested parties, without investing a great deal of time and money. It should be highlighted that in order to reach the highest possible number of stakeholders diversified methods and tools of communication should be employed. Thus, both standard and new forms of communication exchanges take part in effective food risk discourse. The selection of information medium depends, to a great extent, on individual characteristics. Food risks can be communicated in formal and informal ways. Informal communication (e.g., conversations in the workplace) about food safety can often have more impact on workers' behavior than formal forms of communications (e.g., e-mails sent to all employees).

Tools of Food Risk Communication

Effective food risk communication demands diversified and well-selected tools that allow for proper discourse. In order for the message to be created, communicated, and comprehended, communicators have to select such communication tools that will foster the understanding of food issues among diversified interested parties. Different linguistic, paralinguistic, and nonlinguistic elements of communication facilitate the understanding of food risks. As far as the linguistic dimension is concerned, figures of speech, such as different words or phrases describing the surrounding reality, shape the way risks are perceived and understood. Although both literal and nonliteral linguistic elements mirror and create the environment, figurative language that offers a novel understanding of regular words and phrases is often used in the discussion on new, difficult, or complicated matters. Thus, such tools as metaphors, similes, and idioms are often employed in food risk communication. Among symbolic methods of communication, metaphors constitute one of the most often used communication tools in the discourse on food risks. The reasons for the popularity of metaphors are different. One of them is related to the role of metaphors in journalism. Figurative

language induces interest in texts, and metaphors are important tools in the informational competition among journalists since the aim of a media person is to draw the attention of readers to his or her article. Thus, metaphor can be a tool for gaining information advantage and, consequently, a greater number of readership. Additionally, metaphors can also be used as an instrument of creating one's own journalistic identity, an outstanding writing style that can be easily recognized by readers. As far as the organizational dimension is concerned, metaphors shape the way organizations are perceived since metaphors provide a bridge that facilitates innovative thinking and a broad set of possibilities as well as enhances organizational capacity to prepare for crises (Cirka and Corrigan 2010). Taking into account different features of metaphors, some of them turn out to be especially outstanding in the discourse on food risks. For example, metaphors facilitate the understanding of novel or difficult concepts since they use well-known domains, easily perceivable by the general public (e.g., Bielenia-Grajewska 2009). The most popular metaphoric domains used in food-related communication are the ones of war, journey, and illness. The selection of metaphor domains depend on the result one wants to achieve. For example, if one wants to stress the prerequisite to be active in the face of food risks, then the warfare domain is used to highlight the necessity to fight with food-related hazards. Thus, consumers/patients are pictured in an active way, being able to respond to dangers. It should be stressed, however, that a war metaphor can also be used to show the power of food risks. For example, such verbs as *invade*, *attack*, and *fight* may stress the danger related to food risks (Bielenia-Grajewska 2014). Apart from metaphors, there are also other linguistic tools that facilitate food risk communication. One of them is the notion of numbers. Presenting real numerals in food-related discourse may make the content more appealing among the target audience. For example, information on the number of victims or people infected due to food poisoning may show the real danger. Additionally, the same figure can be presented by the use of numbers, percentage,

or fractions. In this case, different numerical representations can evoke different reactions among stakeholders. For example, 100,000 victims can be perceived in a different way than 0.5 % of an affected population, although they may concern the same health situations. Another important role is played by adjectives. Thus, the message on threats related to comestibles can be strengthened by such attributes as *dangerous*, *fatal*, or *lethal*. Moreover, information on food-related risk may be supported by quoting some scientific investigations, researchers, food authorities, or well-known scientific journals. A next crucial notion as far as the linguistic layer of food risk communication is concerned is the ability to tailor messages to the needs of target audience. Thus, the type of stakeholders should be taken into account, by respecting their abilities to encode messages. This aspect entails not only the type of words and the tone of messages but also such paralinguistic features as the color and size of fonts. Moreover, any texts on food risks often entail the presence of some visual elements that may determine the perception of written information among various readers. The application of drawings or photographs to text messages may strengthen or weaken the perception of the text itself. For example, the discourse on food-borne diseases is often accompanied by some pictures of animals or vegetables (depending on the type of food topics), people analyzing stool samples in laboratories, or dishes made from the selected food products. Since the picture of a healthy animal evokes different emotions than the visual representation of creatures suffering from some diseases, the selection of illustration may be used to calm or frighten the readers of texts on food risks.

Summary

Food risk communication is a multidimensional and multifactoral concept. It encompasses diverse food-related risks that are connected with all stages of food preparation and consumption and all types of stakeholders from the alimentation sector. Taking into account the tools of

food communication, there are various linguistic and nonlinguistic elements that facilitate the understanding of food risks among diversified public. The way they are used determines the perception of food risks among various stakeholders. As has been discussed, there are different food risks, and the way they are perceived and comprehended by the interested parties is determined by those responsible for food risk communication.

Cross-References

- [Company Identity in the Food Industry](#)
- [Corporate Social Responsibility and Food](#)
- [Food Labeling](#)
- [Geographical Indications, Food, and Culture](#)

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Food Risks

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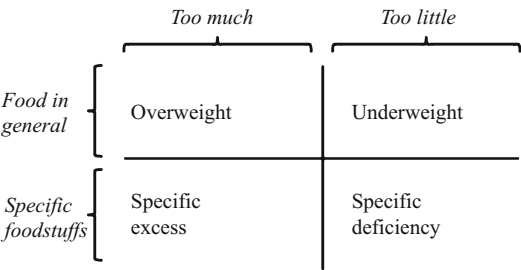
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Synonyms

Diet; Health effects of food; Health risks from food; Nutrition; Obesity; Overweight; Starvation; Underweight

Introduction

I will apply dietetic measures for the benefit of the sick according to my ability and judgment. *The Hippocratic Oath*



Food Risks, Fig. 1 The four major categories of food risks

Although the word “diet” had a wider meaning in ancient Greek than it has today, it certainly included the choice of food. This quote from the Hippocratic Oath confirms the important role for our health that has been ascribed to food for at least 2,500 years. Today the public is confronted with a bewildering mass of information about connections between food and health. Eating too much is unhealthy, but eating too little as anorectics do is equally harmful. There is a long list of (usually tasty) foodstuffs that are subject to health warnings and a similarly long list of (not always equally tasty) foods that are recommended. And then there are all the additives and pesticides, and other food risks like aflatoxin and Creutzfeldt–Jakob disease. It is not easy to orient oneself in this morass of food risk information.

Before turning to the ethical issues surrounding food risks, this entry will provide a résumé of current knowledge about food risks. For that purpose, a distinction will be made between four classes of food risks. Food risks can refer either to the total energy intake or to specific foodstuffs. They can also refer either to excesses or deficits. Combining these two distinctions provides the four categories shown in Fig. 1. The upper row contains the two risks referring to the total intake of food, as measured in an energy unit such as calories: overweight and underweight. On the bottom row, the other two types of food risks are found: excesses and deficiencies of specific food components.

Specific excesses can be divided into two subcategories. Some potential ingredients should be avoided altogether, such as solanine (a toxic compound found in green potatoes) and paraquat (a toxic pesticide). Others are harmless or even

beneficial in small amounts but toxic at higher levels. A classic example is vitamin A poisoning that may result from a diet rich in liver from some wild animals or from abundant intake of cod liver oil or vitamin supplements. The high frequency of hip fractures among elderly people in some European countries may be due to overconsumption of vitamin A (Lips 2003). However, on a global scale, vitamin A deficiency is still a much larger problem.

As a further complication, the effects of reducing a foodstuff depend on what it is replaced by. Hence, although saturated fat is a risk factor for ischemic heart disease, reductions in saturated fat do not seem to be beneficial. The reason is that people who cut down on saturated fat tend to eat more carbohydrates instead (Lim et al. 2012).

Global Risk Estimates

Causal connections between nutrition and health are difficult to determine, since effects may be delayed and since it is difficult to isolate the effects of a single food component. The Global Burden of Disease Study 2010, GBD 2010, provides a summary of the health effects of a large number of risk factors on a global scale (Lim et al. 2012). Its data for diet-related factors will be summarized in the two following sections. The calculated global number of excess deaths from each risk factor will serve as a numerical estimate of the magnitude of the risk. Since risks differ between populations and between persons, these estimates do not correspond to individual risks. Regional data, of which some will be given below, are somewhat less inadequate for that purpose.

These estimates only include risk factors for which data of sufficient quality are available. Other dietary risk factors than these may have important health effects are not yet known.

Underweight and Overweight

High body mass index (3.37 million deaths/year). Obesity or overweight is measured in terms of the

body mass index that is obtained by dividing the person's weight in kilograms by the square of her height in meters. It is usually assumed that a BMI of 18.5–25 kg/m² corresponds to optimal weight. In this study, the “most healthy” BMI for comparison purposes was set at 21–23 kg/m². Obesity is associated with substantially increased risk of a large number of diseases, including diabetes, ischemic heart disease, and several types of cancer.

A similar estimate for the year 1990 showed a smaller number of deaths due to high body mass index (1.96 million/year). Obesity is a growing problem not only in rich countries but also in countries such as India where malnutrition and food shortage is still a problem for significant parts of the population (Sarkar et al. 2012).

Obviously obesity does not depend on high energy intake alone but on the balance between energy intake and energy expenditure (exercise). For the present purposes, however, it can be counted as a diet-related disease, not least since lasting reduction in food energy intake is an important component of all adequate treatment programs for obesity.

Childhood underweight (0.86 million deaths/year). Childhood underweight increases the risk of various infectious diseases including malaria that terminate the lives of starving children. The corresponding estimate for 1990 was much higher (2.26 million/year). It should be emphasized that although the number of children dying from starvation has decreased substantially, lack of food is still a major cause of death in many countries, in particular in sub-Saharan Africa.

Too Much or Too Little of Special Foodstuffs

Diet high in processed meat (0.84 million deaths/year). Processed meat is smoked, cured, or salted, or contains chemical preservatives. This includes sausages, bacon, and ham. The major health risks are colon and rectum cancer and diabetes.

Diet high in red meat (0.04 million deaths/year). Red meat, as the term is used here, includes beef, pork, lamb, and goat but excludes processed

meat, poultry, and fish. The major health risks are colon and rectum cancer, diabetes, and ischemic heart disease. As the figures show (non-processed), red meat appears to be a much smaller risk factor than processed meat.

Diet high in sugar-sweetened beverages (0.30 million deaths/year). Soft drinks have been shown to give rise to diabetes mellitus and to obesity with its associated maladies such as cancers and cardiovascular diseases.

Diet high in trans-fatty acids (0.52 million deaths/year). Trans fat (unsaturated fat with *trans*-isomer fatty acid) occurs in nature, but most of the trans fat consumed is created through processing of vegetable oils. Trans fat is primarily used in fast food and bakery products. It has also been used to replace animal fat in products for vegetarians. It has been shown to give rise to ischemic heart disease.

Diet high in sodium (3.10 million deaths/year). Sodium (in practice sodium chloride, i.e., common salt) is an essential nutrient, but excess consumption increases blood pressure which leads to enhanced risk of several types of cardiovascular disease including ischemic heart disease. High intake of salt also increases the risk of stomach cancer.

Insufficient breastfeeding (0.55 million deaths/year). Breastfeeding contributes to developing the child's immune system. Babies who are insufficiently breastfed run increased risks of infectious diseases including diarrhea.

Maternal and infant iron deficiency (0.12 million deaths/year). Maternal iron deficiency leads to anemia also in the child. It contributes to both maternal and infant mortality.

Vitamin A deficiency in children (0.12 million deaths/year) increases the prevalence and severity of infections, including measles and intestinal infections. It is also a major cause of blindness.

Zinc deficiency (0.10 million deaths/year) increases the prevalence and severity of diarrhea and pneumonia.

Diet low in fruits (4.90 million deaths/year). Fruit consumption has been shown to decrease the risk of several types of cancer and cardiovascular disease including ischemic heart disease and stroke. The large number of deaths/year

associated with low intake of fruits depends both on the substantial positive health effects of fruit and on the large number of people who eat little or no fruit. Low intake of fruit is the only dietary risk factor in this study with a large difference between men and women. The number of deaths/year attributed to it was 1.5 times higher for men than for women. There are two major reasons for this difference: men eat less fruit than women and they are more often victims of cardiovascular disease.

Diet low in vegetables (1.80 million deaths/year). The health risks of low vegetable consumption are essentially the same as for fruits, namely, cancer and cardiovascular diseases. The large number of deaths/year is also explained in the same way as for fruits.

Diet low in whole grains (1.73 million deaths/year). Whole grains mean those cereal grains that contain cereal germ, endosperm, and bran in their natural proportions. (In refined grains only the endosperm is left.) Common sources are the whole grain variants of cereals, bread, pasta, and rice. A diet low in whole grains is associated with diabetes, ischemic heart disease, and cerebrovascular disease.

Diet low in fiber (0.74 million deaths/year). Fibers from all sources, including fruit, vegetables, legumes, and grains, decrease the risk of colon and rectum cancers and ischemic heart disease.

Diet low in nuts and seeds (2.47 million deaths/year). Consumption of nuts (also in the form of peanut butter) has been shown to have a protective effect against ischemic heart disease.

Diet low in milk (0.10 million deaths/year). Milk has been shown to decrease the risk of colon and rectum cancer (irrespective of whether it is non-, low-, or high-fat milk).

Diet low in calcium (0.13 million deaths/year). Calcium has a protective effect against colon, rectum, and prostate cancer. Milk, cheese, and other milk products are the major dietary sources.

Diet low in seafood omega-3 fatty acids (1.39 million deaths/year). The most important dietary sources of omega-3 fatty acids are cold water oily fish, such as salmon and herring. The effects of these substances are still under debate, but this

study accepts evidence of positive effects on the risk of ischemic heart disease.

Diet low in polyunsaturated fatty acids (0.53 million deaths/year). The major part of dietary polyunsaturated fatty acids is omega-6 fatty acids. They are present in seeds, nuts, and vegetable oils such as palm, soybean, rapeseed, and sunflower oil. Studies have shown that replacing saturated fatty acids by polyunsaturated ones reduces the risk of coronary heart disease (Jakobsen et al. 2009; Mozaffarian et al. 2010). However, these results are controversial since some researchers claim that omega-6 fatty acids have negative health effects.

Summary of the Evidence

The evidence reported above can be summed up in the four categories introduced in Fig. 1. The total number of lost deaths/year due to food risks is estimated at 23.71 million and distributed as follows between the four categories:

Overweight: 3.37 million deaths/year (14 %)

Underweight: 0.86 million deaths/year (4 %)

Specific excesses: 4.80 million deaths/year (20 %)

Specific deficiencies: 14.68 million deaths/year (62 %)

It should be noted that alcohol consumption has not been included in this summation since alcohol is not usually considered to be food. If it is included, then 4.86 million deaths/year should be added to the “specific excesses,” yielding a sum of 9.66 instead of 4.80 million deaths/year.

Food risks differ widely between different parts of the world. Regional information is only available in terms of DALY loss. DALY (deaths and disability-adjusted life years) is a measure constructed as a weighted sum of years lost and the estimated loss derived from years lived with disability. Table 1 shows how much the most important food-related risk factors were estimated to contribute to the global burden of disease in 1990 and 2010, measured as DALY loss. Hence in 1990, childhood underweight contributed 8 % of the global burden of disease whereas in 2010 it contributed 3 %. The remarkable changes from

Food Risks, Table 1 Major contributions of food risks to the global burden of disease in 1990 and 2010, as measured in DALYs, a weighted sum of years lost and the estimated loss from years with disability. The percentages indicate how much of the total burden of disease a risk factor contributes to. The risk factors included are those among the top 20 risk factors for the respective year that are food-related

Whole world 1990	Whole world 2010
8 % childhood underweight	4 % too little fruits
5 % too little breastfeeding	4 % high body mass index
3 % too little fruits	3 % childhood underweight
2 % too little iron	3 % too much sodium
2 % high body mass index	2 % too little nuts and seeds
2 % too much sodium	2 % too little iron
2 % too little nuts and seeds	2 % too little breastfeeding
2 % too little vegetables	2 % too little whole grains
2 % too little Vitamin A	2 % too little vegetables
1 % too little whole grains	1 % too little omega-3 fat
1 % too little zinc	
1 % too little omega-3 fat	

1990 to 2010 are mostly due to economic and social progress in the third world. Table 2 exhibits the corresponding information for some of the world's regions in 2010. As the table shows, the food risk pattern differs drastically between different parts of the world, with sub-Saharan Africa and Northern America as the two extremes.

Many details in these tables are uncertain, but the general picture that they display represents the currently best available information about food risks in the world. They therefore provide an adequate starting point for a discussion of food risks, seen as public health problems. Food risks on an individual level may of course deviate substantially from this picture and are best determined by a competent physician.

Ethical Issues

Historically anxieties about food have focused on two types of problem: lack of food and food contamination (Scholliers 2008). The solutions to these problems are simple, at least in principle: produce and distribute more food and remove the contaminants. Although both types of problem persist, the picture is now dominated by two

Food Risks, Table 2 Major contributions of food risks to the burden of disease in 2010, in different regions, measured as in Table 1. The risk factors included are those among the top 20 risk factors in the respective region that are food-related

China	South Asia (India, Pakistan, etc.)
9 % too little fruits	4 % childhood underweight
5 % too much sodium	3 % too little fruits
4 % high body mass index	3 % too little iron
3 % too little whole grains	2 % too little breastfeeding
2 % too little nuts and seeds	2 % too little nuts and seeds
2 % too little vegetables	2 % too much sodium
1 % too little fiber	1 % too little whole grains
1 % too little omega-3 fat	1 % too little vegetables
1 % too little iron	1 % high body mass index
Brazil and Paraguay	1 % too little omega-3 fat
7 % high body mass index	Bolivia, Ecuador, and Peru
4 % too little fruits	4 % high body mass index
4 % too much processed meat	3 % too little iron
3 % too much sodium	2 % too little breastfeeding
3 % too little nuts and seeds	2 % too little fruits
2 % too little whole grains	1 % too little nuts and seeds
2 % too little iron	1 % too much sodium
1 % too little vegetables	1 % too little vegetables
1 % too little omega-3 fat	1 % too much processed meat
North Africa and Middle East	1 % too little whole grains
8 % high body mass index	1 % childhood underweight
4 % too little fruits	Central sub-Saharan Africa
3 % too much sodium	Africa
3 % too little nuts and seeds	11 % childhood underweight
2 % too little iron	5 % too little breastfeeding
2 % too little whole grains	2 % too little iron
2 % too little breastfeeding	2 % vitamin A deficiency
2 % too little omega-3 fat	2 % too little zinc
1 % too much trans fat	1 % too little fruits
1 % too little vegetables	0.5 % too little nuts and seeds
USA and Canada	0.5 % too much sodium
10 % high body mass index	0.5 % high body mass index
5 % too little fruits	0.4 % too little whole grains
4 % too little nuts and seeds	Western Europe
3 % too much sodium	9 % high body mass index
3 % too much processed meat	4 % too little fruits
2 % too little vegetables	3 % too little nuts and seeds
2 % too much trans fat	3 % too much sodium
2 % too little omega-3 fat	2 % too much processed meat
2 % too little whole grains	2 % too little vegetables
1 % too little fiber	1 % too little omega-3 fat
1 % too much soft drinks	1 % too little whole grains
1 % too little polyunsaturated fat	1 % too little fiber
	1 % too little polyunsaturated fat

other types of problems: excess food consumption and improper balance between foodstuffs. The solutions to these problems are much less straightforward, since in both cases individual behaviors need to be changed.

It is important to recognize that food choices depend on much more than health considerations. The cost of food is a decisive factor for the vast majority of consumers. Social, religious, and cultural customs have a large role and so have family traditions. Increasingly, food choices reflect ethical standpoints such as vegetarianism, environmental concern, support for animal welfare, and solidarity with exploited farm workers. Any attempt to promote a more healthy diet will have to take the influence of non-nutritional preferences into account.

The major ethical problem facing dietary reform is that of paternalism, i.e., acting against people's will in what one believes to be their own interest. Urging a person to eat less or differently is an interference in her life, undertaken for her own good. Such interventions are commonly assumed to be both illiberal and disrespectful. However, there are two reasons why the paternalism problem in food risk policy may be less serious than it is often believed to be.

First, people do not make food choices only for themselves but also for their family and guests. When parents shape the tastes and food habits of their children, they also create conditions for their future health. Recommending parents to improve their children's diet is certainly an intrusion into family life, but it is not a paternalistic one (Hansson 2005). If the health of new generations is taken to be a national concern, then governmental and other public measures to promote healthier diets may be justified.

Second, an individual's food choices are much influenced by social and economic factors beyond her control. For instance, it would be misguided to see the current obesity epidemic as nothing more than the aggregate effect of a large number of individual choices to eat more. It is "extremely difficult to believe that people who are morbidly obese and who experience the social ostracism that goes along with it (not to mention the social inconvenience of just finding nice clothes that fit) want

to be that way" (Banja 2004, p. 43). A more credible explanation is that fattening food is better tasting, more accessible, more promoted, and less expensive than healthy food (Schwartz and Brownell 2007). This, of course, is a situation amenable to change through social reform. From an ethical point of view, such reform has the advantage of being less intrusive into private life than health campaigns directed at individuals. On the other hand, it may have the disadvantage of interfering more with corporate freedoms.

Food prices are influenceable and in most countries already much influenced by taxes, subsidies, and trade policies. The fact that healthy food is more expensive than unhealthy, energy-dense food is in all probability an important factor contributing to the obesity epidemic (Adler and Stewart 2009). In many cases, agricultural policy has contributed to price relations that inhibit healthy choices. The European Union's common agricultural policy has kept up prices of fruits and vegetables by destroying parts of the production. In 1993 this led to the destruction of more than half of French apples, 70 % of Italian pears, 50 % of Greek nectarines, 50 % of Spanish clementines, and 97 % of Spanish lemons (Lobstein 1998, p. 84). Poland's decreased mortality in coronary heart disease in the early 1990s has been attributed to reduced subsidies for animal fats that led to replacement of dietary saturated fats by polyunsaturated fats (Zatonski and Willett 2005). The unintended positive health effects of these economic and agricultural policies stand in stark contrast to the inefficiency of other countries' attempts to reduce coronary mortality through health policies operating with education and behavior change (Lock and McKee 2005). In Canada, policies maintaining high prices for poultry have prevented healthful replacement of red meat by poultry meats (Cash et al. 2006, p. 623).

Three Examples

The following three examples will serve to exemplify the ethical situations surrounding different types of food risks.

Vitamin A deficiency is common among children in developing countries. In recent years, the frequency of this deadly disease has been substantially reduced through interventions that have largely been funded by foreign aid agencies and charities. The introduction of carotene-rich sweet potatoes, fortification of sugar with vitamin A, and vitamin A supplementation for young children are among the measures that have been successful (Boy et al. 2009). From an ethical point of view, these are obviously commendable interventions. The victims of this food-related disease are small children, and if there is any paternalism involved in what it takes to save them, then that is about as unproblematic as any paternalistic intervention can be. The major ethical problem in this context is that a substantial number of children in need of vitamin supplementation do not yet receive it.

Trans-fatty acids have been introduced into industrially produced food for technical reasons. Trans fat replaces other, healthier fat products. It does not taste differently, and therefore a ban on trans fats affects producers rather than consumers. Such a ban falls in the same category as hygiene standards for food manufacturers and the prohibition of poisonous food additives. Although some voices have been raised against prohibition of trans fat, the concern has usually not been the ban itself but whether it could open up for interventions against unhealthy foodstuffs that consumers may wish to choose. In itself, a ban of trans fats appears to be ethically unproblematic (Resnik 2010; Rubel 2010).

Soft drinks now comprise almost 25 % of the daily energy intake of American teenagers. The colloquial expression “empty calories” seems to be adequate in the sense that consumption of soft drinks does not decrease energy intake through other foodstuffs. The strong association with diabetes and obesity only holds for sugar-sweetened soft drinks, not for the diet variants (Caballero 2007; Vartanian et al. 2007). However, soft drink producers strongly oppose any measures that would reduce the consumption of their sugar-sweetened products. There are strong indications that a “sugar tax” would have considerable positive health effects, but political support is weak

(Brownell et al. 2009; Wang et al. 2012). A major reason for political inertia seems to be that such taxes are perceived as paternalistic. However, corresponding taxes on tobacco products now have comparatively strong support. Arguably, the pros and cons of this and other potential antiobesity policies will have to be reassessed if child obesity does not recede in response to ethically less controversial measures such as education and public health campaigns.

The last of the three examples is the one that is most representative of the type of future ethical challenges that can be expected in food policies. Due to the changing nature of food risks, food policy increasingly involves difficult ethical choices between public health and the public’s free access to unhealthy food.

Summary

Overweight is a growing problem, also in developing countries, and it now kills more people than underweight. Excess of sodium (salt) and lack of healthy foodstuffs such as fruits, vegetables, whole grains, and nuts are other important contributors to the global burden of food-related risks. In poor countries, a healthy diet is still beyond the economic means of large segments of the population. Even in the rich industrialized countries, the lower prices and greater availability of unhealthy food contributes substantially to the obesity epidemic. In public health policy, a major problem is to find ways to promote healthy food choices without interfering unnecessarily in the private sphere of people’s everyday lives.

Cross-References

- [Eating and Nutrition](#)
- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Food Additives and International Trade](#)
- [Food and Class](#)
- [Food and Health Policy](#)
- [Food Risk Communication](#)
- [Obesity and Consumer Choice](#)

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Food Rituals

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Synonyms

Food and culture; Food practice; Moral food; Religious food

Introduction

The study of ritual food practices and morality is, fundamentally, rooted in religious practice and belief. Methodologically, anthropology and sociology are best suited for analyzing ritual actions, intentions, and the boundaries of practitioners' moral or ethical motivations. Religion becomes a central component of ritual actions involving food preparation (cooking) and consumption (eating) when a higher power or supernatural authority is intentionally made part of the ritual food process. In this way, cooking and eating take on meaning beyond nutritional and physical sustenance, becoming modes for interacting with the spiritual or transcendent. There are three fundamental ways in which this occurs. First, an individual or community chooses a certain type of food as a sacramental or sacrificial source of nourishment. Second, a specific food is avoided or considered

taboo and is forbidden in ritual food practice. Third, fasting or abstinence from eating a certain food, or all foods, is undertaken as a form of negative ritual food practice. In each instance, ritual actions are performed which designate the significance of the foods that are eaten or avoided, usually with the goal of religious merit or atonement in mind.

History

The study of food and ritual began in earnest with the advancement of sociological and anthropological methods to understand foreign cultures and their ritualized behaviors in the early to mid-twentieth century. This study of ritual, implemented primarily by Western intellectuals, was fuelled by an ever-increasing globalized sense of the world and its inhabitants, albeit it often an ethnocentric one. Ritual practices (what will be broadly defined here as recurring spiritually motivated and intentional practices) were analyzed for content, efficacy, and outcome in a way that they had not previously been studied. Although food practices were not the only ritualized actions under investigation at this time, they were (and remain) central to sociological and anthropological studies of culture. Food, a fundamental aspect of life, is a universal cultural topic, as all people eat to survive, but at times have different interpretations of what types of food it is appropriate or not appropriate to eat. The designation between food that is acceptable and that which is not typically transcends the edible and inedible and is determined by some system of moral or ethical classification.

Sociologist Émile Durkheim demonstrated this distinction in his early twentieth-century study of religious life in which he noted that many of the indigenous communities that he analyzed had a collective self-image rooted in a totem figure, usually an animal (Durkheim 1995). The totem animal, as reflective of the communal consciousness, took on great power and meaning, and it became taboo to eat those animals that were sacred to the community. As sociological and anthropological approaches shifted away from the “armchair” and into the

field, scholars like interpretive anthropologist Victor Turner turned their focus toward the ways in which religion and ritual could develop into “symbolic system[s]...that both express and shape social reality” (Morris 2006). In this reciprocal model, food practices become a means for understanding culture while also impacting how cultures view themselves.

A student of E.E. Evans-Pritchard, British anthropologist Mary Douglas is among the best-known scholars of food and ritual in the twentieth century. Douglas, striving to find cross-cultural meaning in dietary practices, turned to food and dirt as symbols of social and spiritual purity and defilement (Douglas 1966). This social system of food classification recalls Durkheim’s understanding of totem and taboo, in which the totem animal is to be avoided as food, while other animals are acceptable sources of nourishment.

The study of food and ritual continues to gain momentum through the work of anthropologists like Gillian Feeley-Harnik and religionists like Wade Clark Roof (Feeley-Harnik 1995; Roof 2000). In her work on food and anthropology, Feeley-Harnik notes the value of earlier studies of food and ritual, concurring with Claude Lévi-Strauss and Douglas that it is not enough when studying cultures to reduce their food practices and consumption to mere cultural symbols (Feeley-Harnik 1995). Food practices are instead deeply intertwined with other innate human actions like sex and language and, like these, can be performed in ways that are interpreted as being acceptable or taboo depending upon a culture and what is socially acceptable in it. Roof’s study is one that applies theories of ritual action to the cultural role of barbeque in the modern-day southern United States. For Roof the widespread prevalence of barbequing pork in the south has made the pig a kind of southern totemic figure, one that permeates local food culture from marketing to communal gatherings and is thus ritually prepared (Roof 2000).

Food Ritual Analysis: Ethical Parameters

Whether symbolic or actualized, ritual food preparation and consumption are often ethically

imbued. This happens in two ways, as moral standards are either projected onto the community by outsiders who observe them or are established within the community itself. Instances of these ethical parameters for ritual food practices can be applied to all three categories for ritual food analysis: (1) food as a sacramental or sacrificial source of nourishment, (2) the avoidance of specific foods as forbidden or taboo, and (3) fasting or abstinence from eating a certain food, or all foods, as a form of negative ritual food practice.

Sacramental Nourishment

Indigenous Traditions

Sacramental or sacrificial food practices are performed the world over, as individuals and communities strive to connect with, or even to imbibe the divine. These practices can be found particularly in indigenous traditions that have totem animals and in the Eucharistic practices of Christian churches. When a totem for a community is an animal (for instance, in an aboriginal community that identifies with and treats as sacred the kangaroo), contact with the totem animal may be taboo or off-limits because of its elevated position, or the animal may (rarely) be sacrificially eaten so that the community might ingest some of its power (Freud 1946). When the totem is eaten, it is important that it only be ingested by members of the community, as its sacred power is believed to be connected to them alone. For most communities, a collective identity is crucial for their survival as a unit, and the ritualized eating of their sacred animal becomes one way in which this group character is maintained. By performing the rituals associated with the cooking and eating of the totem animal, the community is able to reach into their shared past, participating in and perpetuating their own sacred myth (Eliade 1987).

Christianity

Many of the same principles hold true in the Christian tradition, as the Eucharistic meal is considered by participants to be powerful and is a way for individuals to collectively participate in and affirm their place within the church

community. For Christian churches, the sacramental food (bread and wine) has different meaning depending upon which denomination one participates in. In the Roman Catholic Church, the ritual practice of the Eucharist is considered by members to be a process of transformation. The doctrine of transubstantiation means that for Catholics the communion elements of bread and wine are changed by the ritual actions of the priest, converting these elements in essence to the actual body and blood of Jesus Christ. The belief that the food elements are literally transformed into flesh and blood presents many ethical issues for the standards that determine the ways in which these food elements are handled and distributed. According to the tradition, this means that only a priest has the authority and ability to preside over the ritual process, that the bread and wine are not more than mere food and drink until after the ceremony is performed, that after being transformed the elements cannot be abused or discarded (other than to be ingested), and that only a select population (baptized, practicing Catholics) are permitted to touch and eat them. The ritual food and drink are only supposed to be consumed by those who have a clear conscience and with the proper spiritual intention.

As sacred food, the Eucharist is also central to ritual life in Protestant Christian churches. A historical point of contention between the Eucharistic practices of the Roman Catholic Church and its Protestant sister churches rests on the limitations of who can participate in the ritual. Protestant churches generally hold that the Roman Catholic Church's approach to the Eucharistic ritual is not in-line with the message of inclusivity central to the Christian tradition. For Protestant churches, this means a necessary ethical shift from the concept of transubstantiation in the ritual process to one of consubstantiation, or the belief that the presence of Jesus Christ in the Eucharist is more symbolic than literal. This consubstantiative approach to the Eucharistic meal led to a number of differences in ritual, including the ability for ordained women to perform the rite, for all believers to participate in the meal (and not just baptized Protestants), and to less formalized preparation, treatment, and storage of the food elements.

Taboo Foods

Judaism

For a number of the world's religious traditions, there are also foods that are designated as being taboo or forbidden. In Judaism, Islam, and eastern traditions like Hinduism and Jainism, specific foods are off-limits, and ritualized food preparation practices are put into place to ensure ethical consumption. As Douglas noted, in the Jewish tradition, special attention is paid to the dietary laws found in the Old Testament book of Leviticus (Douglas 1966). These laws are the foundation for what is considered to be kosher, or *kashrut*, and therefore morally acceptable for consumption. In order for foods to be pure, rather than defiled and unfit to eat, the process of their production must be certified by a rabbi or approved organization. In this religiously systematic way, their production becomes ritualized.

For foods to be considered kosher, their production and content follow a strict set of ethical criteria. Kosher animal products must be in good health before being slaughtered and have to be killed in a humane way. The blood from these animals has to be completely drained before they are able to be cooked and eaten. There are restrictions as to which foods meat and dairy can be mixed with, and they are not to be consumed together. While some foods made by non-Jews are permissible, those following a strict kosher diet try to only eat foods that have been prepared within the dietary parameters of the tradition. Food choice, production, preparation, and consumption become religiously ritualized through the kosher diet, which is practiced in different degrees by Conservative, Reform, and Orthodox Jews.

For Jews, the moral and ritual process of food production is carried beyond the butcher shop or factory and into the home. In the Jewish tradition, domestic ritual meals take place each week on *Shabbat*, and several times a year as a way of reaffirming one's faith and place within the Jewish past and wider Jewish community. Perhaps the best example of this type of food ritual is the observance of Passover, in which Jews recall, in part through a ritualized meal, the Old Testament Exodus story of the freedom of the Israelites from

slavery in Egypt. Symbolic foods are eaten as part of this Passover *Seder* meal, including unleavened bread called *matzoh*, bitter herbs, lamb, and wine, with each item standing for a specific part of the Israelites' story.

Islam

In some ways similar to Jewish kosher dietary laws, many adherents of the Muslim tradition follow the food restrictions of *halal*. Halal dietary laws are firm and include the avoidance of pork and alcohol, in addition to not being able to eat the blood of any animal, and having to eat only humanely slaughtered animals. Like kosher dietary laws, halal food standards for production are highly organized and require certification to ensure that foods are spiritually and ethically pure for the Muslims buying them. In both the Jewish and Muslim traditions, all ingredients for processed food items have to be carefully chosen and labeled to ensure that even food additives are within the limitations of what can be safely and morally eaten.

Beyond physical production and ingredients, certified kosher and halal foods must be prepared with the right spiritual intentions in mind. In these traditions and many others, dietary laws are taken from divine scripture (the Qur'an in this case) and are believed to be directions for eating and food preparation as given directly to humans by God. Both methods of dietary guidance are therefore aimed at beneficial physical and spiritual nourishment. This is why so much attention is paid to the process of production. For a food item to remain ritually pure, it must be made with the least bit of harm and a heightened awareness of source.

Hinduism/Jainism

In the Hindu tradition, food has an "essence" – spiritual and social meaning beyond nourishment (Khare 1992). In India, food has traditionally been connected to caste as well as ritual life. In a tradition in which one's *dharma*, or moral duty, is central, eating in Hinduism became an act of adhering to cultural and thus spiritual order. Hindu dietary laws can be traced to holy books within the tradition. Food is a central topic in the

Laws of Manu, an early Indian text outlining the laws that governed all aspects of cut- repetitive life. Acceptable and taboo foods are outlined for the “twice-born” man (males born into the three higher Hindu castes) so that he can successfully navigate through dietary rituals and restrictions in order to uphold his dharma and maintain social and religious harmony (The Laws of Manu 1991). Special attention is also given to ritual actions that must be performed when some foods (certain birds and animals in particular) are prepared to be sacrificially eaten.

Like kosher and halal dietary laws for what is acceptable and what is taboo (based on spiritually ritualized food preparation practices), in Hinduism, there are certain foods that almost all adherents avoid, while there are others that only the strictest followers do not eat. For instance, many Hindus completely avoid eating beef out of religious and cultural respect for the cow. This practice extends for some into total vegetarianism, rooted in the belief that killing animals for food results in a bad karmic, or cumulative moral condition based on behavior or action. In the Hindu tradition, there is also an emphasis on treating all foods ritually because everything in life can potentially be considered a sacrificial offering to the divine (Bhagavad Gita 1986). To offer food to divinity is to communicate with the transcendent in a way that connects the sacred and mundane. In approaching all food practices as sacred, Hinduism invites adherents to partake in a primordial ritual of spiritual and physical nourishment that reaffirms belief in a natural hierarchy between human and divine (Morris 2006).

The Jain tradition, with its roots in earlier Indian spirituality, takes an even stronger stance on nonviolence, or *ahimsa*, with regard to what foods it is appropriate or not appropriate to eat. Jain ascetics take this to the extreme, avoiding killing in their consumption to the greatest extent possible. The men and women who take up Jain monastic life vow first to only eat that which is given to them, so as to not personally harm any creatures, large or minute, in the process of food preparation. Jain ascetics are vegetarians, trying to avoid accruing bad karma by eschewing meat

and root vegetables (foods in which the entire plant dies when harvested), and only consuming strained water in order to minimize their effect on even the smallest bugs that might pass undetected through their diet. In sharing food with ascetics, the laity engage in the ritual process and are also able to work off their karma. Sharing food with ascetics thus becomes repetitive a mutually beneficial spiritual act. For the Jain laity, dietary practices are not as strict, but food remains sacralized. Though lay eating practices are not as ritualized as those of the ascetics who strain their liquid and accept food offerings, Jain lay people must navigate through issues of nonviolence in their worldly lives. As part of their spiritual commitments, Jain laity are not even permitted to take jobs that might cause harm, including butchery.

Fasting Rituals

Fasting, or abstaining from eating specific foods or all foods, is a cross-cultural phenomenon in the spiritual lives of many. To fast is to sacrifice eating, usually with the goal of some degree of spiritual purification. Although the practice of fasting fundamentally means an avoidance of food, it is nonetheless an aspect of ritualized food practice. Fasting in world religions typically takes place during periods of spiritual reflection or atonement like Passover (Judaism), Lent (Christianity), and Ramadan (Islam) and is by its cyclical nature ritualistic.

Like sacramental and taboo foods, definitions for fasting are different across cultures and traditions. For instance, in her study of the eating habits of medieval women, Caroline Walker Bynum reveals how fasting became a vehicle for piety – in stark contrast to the abundance of Catholic feast days during the period (Bynum 1988). For the men and women who chose to lead contemplative lives in the monasteries and cloisters of the Roman Catholic Church at this time, fasting was a way to strip an already austere life of one of its remaining pleasures (food) so as to show total attention and devotion to God. Fasting is not only a practice of ascetics however but one also undertaken by the laity.

While Protestant Christian denominations do not discourage the practice of fasting as part of

religious life, the role of fasting in Protestantism is historically not as prominent as it is in Catholicism. Fasting in the Roman Catholic Church, whether it is before receiving the Eucharistic elements as a measure of spiritual purification or abstaining from meat and not eating between meals on Fridays as a practice of penitence during the liturgical season of Lent prior to Easter, is a ritualized restriction or avoidance of food for religious purposes. By fasting, the Catholic hopes to bring herself or himself closer to God through self-sacrifice. In the Jewish tradition, fasting is also a spiritual exercise and a means of reparation. Jewish fasting is undertaken in particular on holy days like Yom Kippur (the Jewish Day of Atonement) as an expression of faith. In both Judaism and Christianity, ritual fasting is only required of those who are physically healthy enough to not eat for extended periods of time. Traditionally, rules for fasting are less severe for children, pregnant women, the ill, and the elderly, although these individuals are encouraged to participate in the fasting ritual to the extent in which they are able.

Ritual fasting is one of the five pillars of Islam and is practiced during the Muslim holy month of Ramadan, which commemorates the time in which the Qur'an was revealed to be the Muslims' Holy Scripture. Adherents fast from dawn to dusk each day for the entire month as an exercise in self-purification. Fasting is also part of the ritual lives of religious practitioners in eastern traditions. While extreme fasting is sometimes assumed by *sadhus*, or Hindu holy men, Buddhist monastics take a different approach. In the Buddhist tradition, it is believed that the historical Buddha, Siddhartha Gautama, in the sixth-century B.C.E. took up a life of grueling asceticism in order to become enlightened. In the process, he discovered a fundamental doctrine of Buddhism, the "middle path" or "middle way," in which a life of overindulgence or a life of excessive asceticism is not conducive to achieving enlightenment. Rather, the Buddha taught that it was necessary to live somewhere in between. This "middle path" applies to ritual food practices in Buddhism. Ascetics in the tradition are often given their food by the laity (with

the laity gaining merit for feeding the monks) and, according to the *Vinaya*, or rules for Buddhist monastic life, vow to only eat before midday each day and to fast the rest of the time. They eat only what is necessary to be healthy and to survive.

Summary

Ritual food practices are often social and cultural manifestations of spiritual belief and adherence. The three primary categories in which these ritual practices can be consigned are (1) sacramental or sacrificial food practices (like the Christian Eucharistic meal), (2) the avoidance of taboo or forbidden foods (like beef in Hinduism), and (3) fasting or abstaining from food as a form of spiritual reflection and atonement (like Muslims during the holy month of Ramadan). From early studies of ritual food practices a century ago to scholarship of the present day, anthropologists and sociologists have worked to reveal the underlying religious, ethical, and moral implications of ritualized food practices in different cultures. Regardless of tradition, ritual dietary practices can serve as a means for cross-cultural study, as food and eating are significant to all people across time.

Cross-References

- ▶ [Christianity and Food](#)
- ▶ [Ethnicity, Ethnic Identity, and Food](#)
- ▶ [Food Preparation, Cooking, and Ritual in Judaism](#)
- ▶ [Hinduism and Food](#)
- ▶ [Islam and Food](#)
- ▶ [Jainism and Food](#)

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Food Safety

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Synonyms

Food regulation; Food risks; Health; Responsibility and liability; Risk assessment; Toxicology

Introduction

The term “food safety” has come to be associated with a variety of technical and regulatory mechanisms designed to minimize the risk of morbidity and mortality associated with human consumption of food. The ethics of food safety comprises philosophical questions that arise in connection with conceptualization of risks tied to food consumption, the assignment of responsibility and liability for precautionary measures and for actualized harms, and interpretive ambiguity that occurs in the performance of regulatory

standards and precautionary measures, including enforcement. More broadly, the emergence of food safety as a regulatory and conceptual paradigm is typical of the social, political, and cultural themes that define late capitalism and globalization. In this connection, contestation over the safety of food has become an element in broader forms of resistance to power relations that exist within the contemporary food system. Following a brief overview of emerging legal regimes, each of these four domains for examining the ethics of food safety is discussed below.

Food Safety and Regulation

Regulation of food processing and handling on grounds of safety dates back to the last decades of the nineteenth century. Legal codes for food safety emerged in part as a response to industrialized processing and food retailing: long-distance shipment of meats and grains, canning, chemical preservatives, the creation of branded foods, and the grocery industry. In each case, technology created new opportunity of adulteration of foods – an age-old problem that had previously been addressed under the legal regime of merchantability and caveat emptor. Louis Pasteur’s work on microbial contamination and the development of technical means to control it reinforced a conception of food safety associated with the notion of purity. At the same time, chemists such as Frederick Schlink began to accumulate data on risks of preservatives and additives intended to increase the sensory appeal of processed foods. The net result has been the creation of national and local agencies charged with overseeing various aspects of the food system for the purpose of protecting public health (Vileisis 2008).

Food safety regimes are in fact a piecemeal aggregation of laws and government agencies, mostly created in response to episodes of public outrage. The US Food and Drug Administration was famously created in the wake of Upton Sinclair’s colorful (but sickening) portrayal of abuse in the meatpacking industry. Inspection of imported foods often continues to be done by

agencies originally formed to regulate commerce and protect local farmers. Legal oversight extended to farming practice in the wake of Rachel Carson's *Silent Spring*, exposing the risks of chemical pesticides, and has grown to include rules requiring whole food-chain traceability of foods in the wake of mad cow disease and other incidents of contamination in Europe. The Codex Alimentarius is an agency within the Food and Agriculture Organization (FAO) of the United Nations that was initially formed to facilitate international coordination of food safety standards and which now operates in conjunction with the World Trade Organization. Meanwhile, inspection of restaurants or food service facilities remains a responsibility of public health authorities that may operate at a regional or municipal level (Millstone and Van Zwanenberg 2002).

Food Safety Risks

There is an obvious sense in which knowledge of whether foods can be consumed with inordinate risk of injury or death must be very nearly as old as civilization itself. Even in prehistory, humans must have had an implicit recognition of toxic potential. It may have been codified in terms of simple edibility and may have been reinforced by cultural or religious dietary norms. Some have speculated that kosher dietary laws may have evolved in part as a response to food safety risks (Regenstein and Regenstein 2001). The idea of edibility took further shape as an ideal of purity. Pasteur's development of the germ theory bolstered the idea that food safety could be achieved through limiting contamination by microbes. Works such as *100,000,000 Guinea Pigs* and *Silent Spring* further reinforced this way of understanding food safety. The idea that purity and naturalness are bound tightly to safety continues to influence many nonscientists' views on food safety (Thompson 2007).

Within toxicology, risk is conceptualized as function of *hazard* and *exposure*. A hazard is defined by the mechanism that induces harm to an organism. In the case of food safety, for example, it is important to distinguish between the

acute toxicity that would be associated with caustic substances, poisons, and some allergens that trigger rapid and extreme inflammatory responses and those that occur either through multiplication of organisms (such as *Salmonella* or *E. coli* O157:H7) or through accumulation in cells. Carcinogens and mutagens cause harm by disrupting ordinary cellular functions, and both endocrine disruptors and prions are believed to cause harm because their molecular shape triggers disease processes in the body. Toxins in this last class may not exhibit harmful impacts for years.

Exposure concerns the probability or likelihood that hazards will actually materialize. Exposure typically varies according to the amount or degree of physical contact with a toxin (e.g., the dose), but one key area of uncertainty in food safety risk assessment concerns the question of whether a given toxin exhibits a threshold or minimum dose for inducing any harmful effects. Following influential work by Bruce Ames, the view on some mutagens is that purity – or lack of contamination and physical contact – may not be an accurate way to conceptualize risk or to formulate strategic responses to some food risks. Carcinogens – the target of the FDA's Delaney Clause (see Vileisis 2008) – may occur naturally and become disease agents within a matrix that also contains anti-mutagens capable of offsetting the cellular mechanisms that cause cancer (Ames 1983). Hormesis – a process by which some chemicals that are essential nutrients at low levels become toxic at higher levels – also introduces uncertainty into the quantification of exposures. Such uncertainties in food safety can be exploited by industry-supported risk assessments (Elliott 2011).

Quantified food safety risks are amenable to different ethically based management strategies. The dominant philosophy of industrialized food safety agencies adapts utilitarian cost-benefit reasoning by starting with quantified risk assessments as a measure of food safety value. A food safety decision is viewed as not ethically justified unless based on scientifically measured risk (e.g., a quantitative estimate of hazard and exposure). However, food safety agencies do not generally

calculate a trade-off between risk and benefit (though there are exceptions: the US Environmental Protection Agency does take benefits to farmers into consideration when evaluating pesticides). Instead, they adopt the *de minimis* rule: food-borne risks should be as low as is practically feasible. Emphasis on practical feasibility has led to the widespread use of Hazard Analysis and Critical Control Points (HACCP) as a risk management strategy within the food industry (Gaworski et al. 2006).

The science-based *de minimis* risk approach to food safety has been faulted for relying too heavily on expert judgment. In contrast, an extension of the informed consent principle used to manage risks to the subjects of medical research would call for measures that place ordinary consumers into a better position to apply their own values. Such an approach might rely on labels or values-based standards to provide opportunities for individuals to avoid foods based on whatever considerations they believe to be important. Judgments about safety might here be treated on a par with religious values or political values that relate to food choice (Thompson 2002). Alternatively, some authors have argued for more involvement of nonscientists in risk assessment or in the policy development phase of food safety regulation (Millstone 2009). In a similar vein, social impacts might be incorporated into food safety assessments along with more traditional toxicological hazards (Dreyer et al. 2010).

Safety of genetically engineered crops is the most widely discussed risk issue in the ethics of food safety literature. The debate over “substantial equivalence” is a key point of contestation. Although not strictly a principle of risk management, the doctrine of substantial equivalence was developed as a basis for deciding when genetically engineered crops required a fully developed risk analysis on food safety grounds. The terms and requirements of substantial equivalence are themselves debated in the literature, but the basic idea is that this decision should be based on whether the active protein created by a newly introduced transgene either has appeared previously in foods that are Generally Recognized As Safe (GRAS) or has itself been found safe in

previous tests. Advocates have claimed that this test is sufficiently powerful to insure that genetically modified crops are at least as safe as the most genetically similar non-modified variety (Kearns and Mayers 1999). Critics have claimed that reliance on substantial equivalence will fail to detect inadvertent creation of novel proteins as a result of the process of genetic modification (Millstone et al. 1999).

Many who have opposed the introduction of genetically modified organisms (GMOs) have advanced “the precautionary principle” as the basis of their argument. Developed initially as a principle for the management of environmental risks, the precautionary principle states that lack of full scientific certainty should not be used as a basis for taking precautionary action. In the context of food safety, precautionary reasoning might provide a basis for taking steps to remove or control potential hazards well before the science has addressed some of the uncertainties discussed above. In the case of mad cow disease, for example, a precautionary stance might have provided a basis for steps to regulate beef well before the United Kingdom’s food safety agency decided to do so (Millstone and van Zwanenberg 2001). Applied to GMOs, the precautionary stance justifies a suite of policy responses taken in Europe (Levidow 2001). Gary Comstock has provided an extensive ethics-based discussion of the GMO issue and the precautionary principle in which he concludes that the most obvious ways to apply precaution lead to logical inconsistencies (Comstock 2010).

Responsibility and Liability

There are numerous points in the food supply chain that extends from the primary producer to the final consumer where responsibility for food safety might be distributed. A review of the food safety literature in 2003 showed that many of the most damaging microbial contaminants to food are most effectively controlled during the final stages of food preparation and consumption (Redmond and Griffith 2003). Such findings support wide-ranging educational efforts on

appropriate storage and handling procedures and on the role of high cooking temperatures in destroying microorganisms that are the source of many food safety hazards. They can also be used to support the claim that food preparers bear the brunt of ethical responsibility for assuring safe food and should shoulder the liability when injuries arise. Alternatively, the rise of the regulatory regimes for food safety described above can be taken to imply that the primary responsibility for food safety resides with the state. In either case, the distribution of ethical responsibility might be portrayed as a way for industry to shift the responsibility for safe food away from its own shoulders and to reposition it on other actors in the food system (see Nestle 2002). At the same time, supermarkets and chain restaurants have also been in the process of developing their private standards for assuring the safety of products in their retail outlets. In part as a result of inaction by state agencies and also as response to the decline in consumers' confidence in science-based regulatory agencies, the private sector has become more involved in the development of technology and enforcement procedures (Hatanaka et al. 2005; Havinga 2006).

Food safety assurance is becoming a profession and food safety professionals are increasingly being placed in positions of internal oversight within food industry firms. Though versed in scientific principles, these food safety professionals must combine a practical understanding of inspection and HACCP procedures with skills of personnel management. They are often at the key juncture where pressures for filling orders and making profits may challenge the performance of sanitary procedures that are crucial for food safety. These individuals occupy a frontline position of responsibility for the protection of public health but may have little status within their company. There is thus a new and as yet not well-studied area of professional ethics associated with this group of employees within the food industry (Mather and McNiel 2006). In this context, ethical responsibility will encompass questions of corruption, fraud, and whistleblowing that have yet to be studied in the scholarly literature.

Similar issues of professional ethics apply to regulators and inspectors in the public sector. The 2006 contamination of powdered milk in China provides a case study. Melamine is a chemical that has been shown to exhibit toxic potential at sufficiently high doses. During a period of rapid growth in the Chinese dairy industry, producers of powdered milk adulterated the product with melamine in an effort to mask quality deficiencies and to frustrate tests that would have revealed low protein content and general poor quality. The practice was accompanied by bribery of inspectors and high-level officials in the Chinese food safety agency (Pei et al. 2011). Zenobia Chan and Wing-Fu Lai have argued that the melamine incident must be interpreted as an issue of ethics. The failure goes beyond one of law and policy in their view and implies the need for a wider appreciation that achieving food safety and protecting health are responsibilities grounded in ethical norms (Chan and Lai 2009).

Interpretive Ambiguity

While the Chinese melamine contamination case is an example of unambiguously unethical conduct on the part of many actors, the implementation of food safety policy and procedure is in fact fraught with numerous opportunities for differences in interpretation and work style. These ambiguities have practical significance in posing contrasting and sometimes incompatible forms of practice. They can also turn upon points of philosophical and ethical significance. Although national food safety regimes display significant overlap in the description of their elements, structure and policy, the implementation of this framework differs significantly from one nation to another. Some countries are far more responsive to input from nonexperts, while in other countries, any influence from sources other than the scientific community is viewed as political interference in an objective, scientific process (Lodge 2011). Food industry firms that introduce new food safety mechanisms may expect that these procedures will protect them from both legal liability and public censure, yet the plethora of

styles and practices that exist for pursuing food safety across the food industry virtually insures that corporations will be viewed as irresponsible actors and as potential threats to public safety (Maloni and Brown 2006).

Even fairly mundane food safety procedures can exhibit philosophically significant patterns of indistinctness and opportunities for ethically based analysis. Although cases such as the Chinese melamine contamination incident suggest that ethics calls for strict implementation of procedures that have no place for compromise, in fact, almost all implementation procedures require judgment. Employee compliance with crucial food safety rules may depend upon managerial supervision that emphasizes education and improvement over compliance. Food safety inspectors display distinct styles in deciding when to “write up” technical violations or to use them as opportunities to help managers or small companies improve their procedures. Food safety, in short, can be envisioned as an opportunity for cooperative collaboration between overseers and practitioners as readily as it can be viewed as an enforcement activity focused on strict compliance. This ambiguity becomes especially significant when the firms in question have relatively little economic power or may represent efforts by individuals who are typically marginalized by larger corporate actors in the food system. While an ethic of food safety requires that public health must not be endangered, there are nonetheless opportunities for improving safety and health by helping private sector actors achieve their business-oriented goals (Buckley 2013).

Food Safety as Culture

The conceptualization of food safety provides an instance of more general social phenomena that have been described as “risk society” by Ulrich Beck and as “discipline and power” by Michel Foucault. Like practices associated with health and sexuality, food has been a target for the emergence of scientific disciplines that regulate or “discipline” a host of individual and social practices. In building disciplinary practice

around replicable results and statistical significance, these sciences normalize social practice in a manner that, while perhaps socially beneficial and justifiable, nevertheless excludes and marginalizes activities, traditions, and processes of food production, preparation, and consumption that have value to some individuals and groups. In this manner, scientific disciplines for defining and implementing food safety become part of a nexus of power relationships in which some individuals and groups inevitably find themselves caught up. In this respect, food safety is typical of key developments in other domains of society that have been studied by Foucault (Zwart 2000).

Beck’s work has emphasized how the expansion of science into virtually all quarters of life and the growth in scientific literacy and scientific thinking has actually promoted a level of sophistication and skepticism that has undermined the public’s confidence in science-based institutions (Beck 1992). Clearly, food safety stands at the forefront of such “reflexive modernization,” as Beck calls it, although the science of food safety has expanded markedly over the last century and public governance institutions have been built upon it. The idea that trust, specifically either in science or in food safety regulatory institutions, is eroding is a frequent theme in recent food safety research (see Almas 1999; Knight and Warland 2005). Paul Thompson has argued that the themes of cultural transformation and risk can be addressed from an ethics perspective utilizing the work of Annette Baier. Here it becomes crucial to tease apart the difference between being trustworthy and being trusted and the question of whether the social relationship is even amenable to trust, in the first place. The types of disciplinary power relationships studied by Foucault are more fruitfully understood through an ethical analysis of resistance, rather than a failure of trust (Thompson 2007).

Summary

Although relatively few philosophers have undertaken systematic studies of ethics and food

safety, the topics surveyed above demonstrate that food safety is ripe for more nuanced philosophical scholarship, as well as more development of extended case studies. The field of food safety professional ethics is an especially important example of an area where new studies are needed. At the same time, the technical complexity of food safety science and toxicology suggests that some of the most useful philosophical work will come out of the philosophy of science (see, e.g., Elliott 2011). While social scientists are developing a strong literature in food safety policy, the creation of a strong literature reflecting the insights and conceptual tools of philosophical ethics largely awaits future developments.

Cross-References

- Food Labeling
- Food Legislation and Regulation: EU, UN, WTO and Private Regulation
- Food Risk Communication
- Food Risks
- GM Food, Nutrition, Safety, and Health

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Food Security

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Synonyms

Food security; The right to food

Introduction

Food security, despite its simple label, is an immensely complex concept, which has been defined in different but similar ways. Some estimate that approximately 200 definitions and 450 indicators of food security exist (Smith et al. 1992). Currently, the common definition applies: food security is a situation that “exists

when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO 1996).

Food insecurity may occur because of the lack of availability of food, insufficient purchasing power, and inability to produce food and feed themselves at the household level. Additionally, inadequate care, especially for women and children, insufficient health service, and unhealthy environment that are closely connected to inadequate education and other societal factors are also the underlying determinants for food and nutrition status. Food insecurity may be chronic, seasonal, or transitory.

The Evolutionary History of Food Security

Food Security Before the 1990s

As a concept, food security has evolved since it was first developed in the 1970s. Then, the focus was on increasing availability and stability of world food supply to meet the growing demand. In 1981, the Noble Laureate, Amartya Sen, with his groundbreaking thesis on capability changed the focus from availability to food to access to food. Based on the series of studies in India, he argued that to say something about food supply is to say more than just commodity only, but about relationships between persons and that community (Sen 1981). This means that individual food security was primarily dependent on their possibility to access food, labor-based, trade-based, transfer-based, or other entitlement relationships. A shift was therefore made from national level to household/individual level (Maxwell 1996).

The food security agenda in the 1990s was also further broadened by health and nutrition research, which highlighted the fact that reciprocal and synergetic linkages exist between food intake and nutritional well-being (De Rose et al. 1998). The development allowed nonfood causes of food security to be looked into, such as inadequate care – particularly children who need not only sufficient healthy food but also

somebody to feed them. Since then, food security is connected with wider goals, such as adequate nutrition or nutrition security, adequate care, and adequate prevention and control diseases. The changes in defining the substantive meaning of food security are to a certain extent reflected in the transformation regarding the ways in which international community addresses the issue of feeding the world.

The World Food Summit's Approach on Food Security

Hitherto there have been three World Food Summits organized by Food and Agriculture Organization (FAO). In the World Food Summit, 13–17 November 1996, Member States adopted the Rome Declaration on World Food Security. The declaration mentions the new formula for defining food security at global, national, household, and individual levels. It is asserted that “food security is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” This definition is the current working prescription applied on food security.

The Rome Declaration was completed with a Plan of Action that aims to lay the foundations for diverse paths to a common objective of food security. The Plan of Action contains seven commitment areas with a total of 27 objectives and actions relating to:

- (i) Ensuring and enabling political, social, and economic environment most conducive to achieving food security for all
- (ii) Implementing policies aimed at eradicating poverty and inequality and improving physical and economic access to food by all
- (iii) Pursuing participatory and sustainable policies and practices in high and low potential areas
- (iv) Striving to ensure that trade policies are conducive to fostering food security for all through a fair market-oriented world trade system
- (v) Endeavoring to prevent and prepare for natural and human-made disasters and meet transitory and emergency food requirements in ways that encourage recovery,

rehabilitation, development, and a capacity to satisfy future needs

- (vi) Promoting optimal allocation and use of public and private investments to foster human resources, sustainable agricultural systems, and rural development in high and low potential areas
- (vii) Implementing, monitoring, and following up the Plan of Action at all levels in cooperation with the international community

By the end of the World Summit, two important commitments were agreed upon. The first is to halve the number of undernourished people no later than 2015. The second is a commitment “to clarify the content of the right to adequate food and the fundamental right of everyone to be free from hunger.” As to the latter, a concrete response came from the United Nations, which in the same year adopted the General Comment No. 12 on the Right to Food. As to the first commitment, the ambition was later reaffirmed in the Millennium Declaration adopted by the UN General Assembly in 2000.

Additionally, the Summit has created further discussions on international trade and food security. The recommendation for establishing a Working Group for Trade and Food security was adopted at the 1996 Singapore WTO Ministerial Conference.

In 2001, once again upon invitation of FAO, the second World Food Summit was organized. The Summit resulted, among others, in giving the mandate to FAO to install the Intergovernmental Working Group (IGWG) that was tasked to support the Member States' efforts to achieve the progressive realization of the right to adequate food in the context of national food security. After series of meetings in the period March 2003–September 2004, the Working Group delivered the final version of “the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security.” The guidelines give practical directions on 19 topics, based upon three underlying dimensions of the right to food: adequacy, availability, and accessibility.

The third World Food Summit was held in November 2009: the World Summit on Food

Security. In the final declaration, the goal to halve the number of people who suffer from hunger or malnutrition by 2015, which was also set during the first World Food Summit, was reaffirmed, and the declaration contained commitments and actions that would lead to food security.

Indicators for Food Security

FAO uses the indicators derived from the definition of food security itself, which include several specific measurements derived from the concepts of availability and access. Utilization is added to clarify the concept of access, by referring to households' use of the food to which they have access to, and individuals' ability to absorb nutrients – the conversion efficiency of food by the body. From the normative content of food security, some scholars propose additional indicators, adequacy and sustainability (Oshoug et al. 1994). Adequacy refers to nutritional adequacy, food safety and quality, and cultural acceptability. Sustainability entails environmental sustainability and social sustainability.

The most common indicators of food security revolve around measures of food consumption (Bouis 1993). A good measure requires data collected at the household level including the household size, age, and sex of individuals, as well as physical size and activity levels.

Another indicator is the use of coping strategies, which suggest that coping behaviors formed a set of patterns that could be monitored in famine situations (Frankenberger 1992). Coping strategies indicators can be decomposed to analyze separately those behaviors that increase the short-term availability of food and rationing behaviors aimed at dealing with outright short-term insufficiency of food (Maxwell et al. 1999).

Advocating the dietary diversity as food security indicator is not something new. In this approach, it is argued that households with low levels of dietary diversity are likely to have low level of consumption per person and low caloric availability. As such, dietary diversity can play a role in identifying the food insecure, monitoring changes in circumstances, and assessing impacts of interventions (Hoddinott and Yohannes 2002).

The Right to Food

What Is the Right to Food?

The human right to food is an older concept than food security. It received international recognition since 1948, with the adoption of the Universal Declaration of Human Rights. Article 25(1) stipulates that “everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including *food*, clothing, housing, and medical care and necessary social service.” The International Covenant on Economic, Social and Cultural Rights, adopted in 1966 and entered into force in 1976, recognizes in Article 11 “the right of everyone to an adequate *food*, clothing and housing.”

This recognition has repeatedly been incorporated in numerous normative instruments in international law, some of which are binding on states which have ratified them or can be applied as customary law.

Substantive and Procedural Contents of the Right to Food

On the right to food, Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) stipulates:

1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.
2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:
 - (a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by

developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

- (b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

The General Comment defines the term “adequate food” more precisely and points out the different types of obligations for Member States resulting from the right to food. In Paragraph 8 of the General Comment No. 12, the Committee on Economic, Social and Cultural Rights has concluded that the “core content” of the right to adequate food implies ensuring:

The availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture; The accessibility of such food in ways that are sustainable and that do not interfere with the enjoyment of other human rights.

Like any other human rights, the state is the duty-bearer of the right to food. There are two ways on how state parties should approach their obligation. First is that state parties must act *immediately* for instance in relation to nondiscriminatory measures and to mitigate and alleviate hunger in emergency times. Second is that state parties to the ICESCR are required to take steps to *progressively* achieve the right to adequate food, also known as the principle of progressive realization. The principle compels the state parties to move ‘as expeditiously as possible’ toward this goal. Article 2(1) of the ICESCR further asserts the state parties to:

...take steps, individually and through international assistance and co-operation, especially economic and technical, the maximum of its available resources, with a view to achieving progressively the full realisation of the rights recognised in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.

By ratifying the ICESCR and other international treaties recognizing the right to food, states agree to be bound to three categories of state obligation: the obligation to respect, protect, and

fulfil. The state obligation *to respect* requires states not to take any measures that would result in preventing individuals from having access to adequate food and to feed themselves. Indeed, the right to adequate food is primarily to be realized by right holders themselves through their economic and other activities. The state obligation *to protect* implies that states take measures to ensure that third parties (individuals, armed groups, enterprises, etc.) do not deprive individuals of access to adequate food. Under this obligation, the state could be held liable for violations of the right to adequate food committed by non-state actors. The state obligation *to fulfil* demands proactive measures from the state to facilitate and provide access to food. For example, as a last resort, states must provide food whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal.

Current Implementation of the Right to Food

At the international level, the implementation and the current development of the right to food mostly rely on the work done by the Committee on Economic, Social and Cultural Rights and the Human Rights Council, which was before 2006 known as the Commission on Human Rights.

The Committee on Economic, Social and Cultural Rights, established in 1985, is responsible, among others, to monitor the implementation of economic, social, and cultural rights by receiving and assessing state reports. All ratifying states are obliged to submit regular report on adopted measures and progresses made in achieving the observance of the ICESCR rights, every 5 years. The Committee examines each reports and addresses its concerns and recommendation in the form of concluding observation. The Human Rights Council has mandated several working groups and expert individuals, referred to as “Special Rapporteur on the Right to Food,” to investigate current challenges and further provide recommendations to meet such challenges. To meet the mandates, the Special Rapporteur usually conducts country visits and performs studies on specific topics, such as agroecology, land rights, seeds, nutrition, or value chains.

In several countries, the right to food is recognized in the national constitutions. According to a FAO right to food study in 2011, the right to food is recognized explicitly in the constitution of 23 countries. In addition, the right is recognized implicitly, for instance, by means of a broader right or by a directive principle, in the constitutions of 33 countries. Due to direct effect of international provisions, the right to food has effect in at least another 51 countries. Overall, the right to food is thus legally applicable in 107 countries (Knuth and Vidar 2011).

The current status of development of economic, social, and cultural rights in the United Nations is the establishment of an optional protocol to the ICESCR in 2008. Once entered into force, this protocol will empower the Committee on Economic, Social and Cultural Rights to also receive individual communications and interstate communications. At the time of writing, the protocol has been ratified by five states, which are half of its ten-ratification requirement.

The international profile of the right to food allows its realization to move beyond the national borders (Kent 2005).

Between the Right to Food and Food Security

There are some similarities between the concept of the right to food and food security, noting that both emphasize a situation, at the individual level, pertaining to food availability, accessibility, safety, and cultural acceptability.

It is observed that states recognized the concept of the right to food in both international documents pertaining to the food security. In Paragraph 1 of the Rome Declaration 1996, states “reaffirm the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger.” As such it was again reaffirmed in 2002, at the World Food Summit: Five Years Later, where states also agreed “to develop a set of guidelines to support Member States’ efforts to achieve the progressive

realization of the right to adequate food in the context of national food security.”

Regardless of such a concerted and long endeavor at international level, the meaning of food security in connection to the right to food is ambiguous. In an attempt to clarify the connection between the two requires one to compare the distinctive attribute of their objectives and procedures. With regard to the objectives, the motivation for achieving food security can be based on a number of grounds, ranging from moral grounds to more market-oriented motivations. Human rights, on the other hand, are exclusively based on the very idea of human dignity and autonomy which entails a priori values. Thus, from a human rights perspective, all other consideration would be secondary in nature. With regard to the subject of procedure, it looks at the nature of food security as part of international and/or national policy, rather than the legal concept as the right to food is (Alston and Tomasevski 1984). Such would imply recognizing the element of international treaty and customary international law of the right to food, with relatively clear and binding normative contents. Furthermore, the acknowledgement and internationally acceptance of the right to food, which are demonstrated by state ratifications, may conclude that as a human right, the right to food has a precise content. It can be violated and the violation can be the subject of judicial or quasi-judicial remedies (Mechlem 2004).

In conclusion, the concepts of food security and the right to food are closely linked to each other. It is in the procedural circumstances of the right to food that food security can be realized. Relying on the application of the doctrine of state obligation to respect, protect, and fulfil, one could expect a progressive realization of the right to food at the individual level. Furthermore, as the concepts of both food security and the right to food become more accepted and used interchangeably, realizing the right to food has been argued to include the application of the rights-based approach to food security (Barth-Eide 2005). This means applying good practices inspired by the human rights logic, namely, participation, accountability, nondiscrimination,

transparency, and empowerment into food security programs and policies. However, the right to food does not claim to eradicate hunger or to achieve food security faster, or to reduce the importance of experiences gained from food security policies. Indeed, considering the closeness of both concepts and the considerably similar international acceptance thereof, attempts to realize the right to food need to be integrated with existing experiences with food security, with additional new dimensions that pose some arbitrary limits to them.

Contemporary Challenges on Food Security

Scholars and analysts have generally defined three situations of food insecurity: chronic or long-term food insecurity, seasonal, and transitory. The first refers to a situation where people are unable to meet their minimum food requirement for sustained amount of time. The second and the third imply a temporary food insecure situation as a result of sudden drop in the ability to produce or acquire food, which can result from natural disasters or harvest failures.

Natural disasters such as floods, droughts, earthquakes, and other weather-related phenomena can affect food security, destroying, for example, physical and economic capitals of food stocks and harvests. The effects are particularly adverse for the poor. This is primarily the result of three factors. Firstly, most low-income countries are located in regions that happen to be at far higher risk of natural hazards. Secondly, within countries the poor are normally affected much more than others due to economic and social factors, including race, class, gender, and ethnicity. The majority of the poor cannot afford living in locations with lower risks, they live in poorly built houses, and women and children are often hit the hardest, bearing the brunt of food and nutrition security impacts. Thirdly, there may already initial discriminating practices towards the poor regarding the allocation of the targeting compensation for natural hazards (de Haen and Hemrich 2007).

As the impact of such events to food security can be long-lasting, establishing measures to reduce natural disaster risk and build resilience is being advocated. The aim is to develop the ability of a system, community, or society to adapt to shocks in order to maintain an acceptable level of functioning. Crucial in such endeavor is to adopt measures that aim not only to eradicate the immediate catastrophic impacts but also to integrate those efforts into food security strategies as part of overall poverty reduction (Skoufias 2003).

Indeed, while food security can result from unfortunate events, as a social phenomenon, its root of causes is often structural, manifested in persistent status of vulnerability. This implies investigating events as well as intrinsic characteristics of exposed groups of people to determine who will be affected and to what degree (Dilley and Boudreau 2001). Vulnerability approach emerged from the realization that the underlying vulnerability status of a population is a more important determinant of the extent and duration of a food security crisis, and thus relevant for adopting its solutions, than the discrete natural hazards or sudden drop of food stocks that may trigger food security (Prowe 2003).

In addition to vulnerability framework, the Household Livelihood Security (HHLS) framework grew out of a food security perspective but is based on the observation that food is not the only basic need. A livelihood “comprises the capabilities, assets (resources, claims, and access) and activities required for a means of living; a livelihood that is sustainable can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation” (Frankenberger 2003). Livelihood security, then, refers to adequate and sustainable access to income and resources to meet basic needs. This means to include a wide range of issues, such as land tenure, sustainable agriculture, potable water, health facilities, educational opportunities, involvement in policymaking, and time for community participation. Livelihoods include a range of on-farm and off-farm activities that together provide a variety

of procurement strategies to make a living. Notably, the status of each individual and household's livelihoods is based on the household's endowments and its position in the legal, political, and social fabric of society (Baro and Deubel 2006).

Consequently, political and economic interventions on food security as well as humanitarian food aid may be not directly related to food itself. Power relations influencing the distribution of land, military insecurity, and political oppression impeding people to produce food are a case in point. Additionally, the increasing roles of private actors, as well as the relationship between state and market, is dominantly influencing the governance of food security policies at the national level (Hospes and Hadiprayitno 2010). Pollution affecting the safety of food and food production are another case in point. Against this framework, the future of food security is closely connected to the complexity of law and practice that govern the arrangements of food production, distribution, consumption, and sustainability, as well as accountable economic growth policies and active preparedness measures.

Summary

Several major shifts in food security studies and policies have occurred since the 1970s. First, the unit of analysis has moved from the global/national level to the local/household/individual level. Second, the scope of analysis has shifted from a "food availability" approach to an emphasis on the performance and sustainability of household access to livelihoods. Third, subjective perceptions of food security among local populations now complement objectively measurable indicators of food security.

International organizations, national governments, and nongovernmental organizations who are responsible and assuming the tasks to carry out the food security programs and policies in the world hold a wide variety of opinions and have developed a wide variety of frameworks for tackling the issue of food security. These frameworks are congruous with specific scientific approaches to food security and act as frameworks for orienting policies.

The parallel between food security and the right to food is particularly relevant as the concept of "adequate" food has been further elaborated along and beyond the lines quoted above on food security. Both concepts argue that on the one hand the availability at all times is relevant and on the other hand adequacy is understood to mean sufficient to satisfy dietary needs, free from adverse substances, and acceptable in a given culture. While food security offers its flexibility and adaptability into different measurable indicators and policy measures, the right to food advances the concerted effort of eradicating hunger as legal obligation, to which some limits and requirements apply to hold the duty-bearer, state accountable, and protect the entitlements of right-holder, the individual.

Current challenges pertaining to climate change; natural disaster; pollution; corruption; decreasing availability of land, water, and other resources; as well as the impact of food security to nutrition and health status particularly to vulnerable groups are analyzed and addressed using different approaches. Frameworks on vulnerability and household livelihood security are only few that have been advocated to provide solutions as well as to understand the complexity of persistent problem of food security.

Cross-References

- [Extraterritorial Obligations of States and the Right to Food](#)
- [Food Security in Systemic Context](#)
- [Right to Food in International Law](#)

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Food Security and International Trade

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Synonyms

Famine; Food insecurity; Hunger; Malnutrition; Starvation

Introduction

International trade has the potential to significantly affect food security outcomes. Changing production and consumption patterns that result from increased international trade flows affect income levels and income distribution, which are the fundamental determinants of food security. The debate over the role of international trade in food security is often framed as a debate over the ethics of international trade; such a framework misdirects the debate onto an unproductive path. There is (almost) universal agreement on the objective of universal food security, and there is very little gray area in the ethics surrounding this objective. The debate about international trade's role in achieving food security is more productively framed as a debate over the effects of international trade

on food security. These effects are complex and difficult to identify, however, and most studies do not provide conclusive results.

Measuring Food Security

Food security is an evolving concept. The most commonly cited definition is from the Food and Agricultural Organization's (FAO) (2001) State of Food Insecurity, which describes food security as existing "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life." This is a broad definition that captures many important innovations in measuring and defining food security. The evolving understanding of food security has resulted in new ways to measure food security and generated new perspectives on the effects of trade and policy strategies to address food security. Three important structural changes in the understanding of food security are described here.

The first important change is a movement from food security indicators based on food supply to indicators based on peoples' access to food. Food security was historically assessed at the national level by comparing a country's estimated supply of food (measured by aggregating domestic production, imports, carry-over stocks, and food aid) per capita to an approximation of an individual's minimum caloric requirements (e.g., the average number of calories required for a moderate level of daily activity). If available caloric supply per capita was greater than or equal to this estimated level of need, then a country could be said to be food secure.

The fundamental drawback of food security measures based on national supply is that they abstract from issues of intranational distribution. Most developing countries are characterized by wide income inequality, and periods of high food prices can reduce access for low-income people in a country that would be viewed as having sufficient quantities of food per capita, if measured at an aggregate level.

Sen (1981) formalized the concept of access or "entitlements" to food and showed that measures of food supply at the national, or even regional, level are not sufficient indicators of food security. Individuals' access to sufficient quantities of food determines their food security status. This access was first understood to mean sufficient income to purchase food at prevailing prices, but has since taken on a broader interpretation to include social access (e.g., intra-household distribution) and access to safe and nutritious food.

The units of analysis in food security studies have narrowed to better measure food access in recognition of the entitlement concept. Household surveys have become important tools in assessing food security at a more micro level than national supply data would allow. Surveys are evolving over time to include components of intra-household distribution, which provide researchers and policymakers with information on allocation of food between male, female, and child members of a household.

A second important structural change has been the use of anthropomorphic measures, such as stunting and low weight, in assessing food security status. These measures provide information about outputs of food security (i.e., current status) instead of just inputs into food security (i.e., food supplies and purchasing power). Anthropomorphic measures can provide accurate snapshots of the current state of food security, but are necessarily backward looking and do not consider the potential for future entitlement failures or subjective feelings of future food access.

A third major change in the analysis of food security has been an increased emphasis on micronutrient deficiencies. Traditional measures of food security that were based on available calories neglected the importance of micronutrients and could have overlooked "hidden hunger" (IFPRI 2010). Deficiencies of important nutrients such as iodine, iron, vitamin A, and zinc have serious short-term health consequences and can generate long-term developmental delays and deficits. These include anemia, susceptibility to infections, and blindness in the short run and reduced cognitive capacity in the long run.

Despite significantly different approaches (see Masset (2011) for a discussion of some methodological issues), most international measures of food security report progress in reducing the prevalence and severity of global food insecurity. The FAO's (2011) State of Food Insecurity in the World reports decreasing rates of undernourishment in all aggregated geographic regions, though not all countries, since 1990. Global undernourishment is estimated to have decreased by 19 % since 1990. Likewise, IFPRI's Global Hunger Index (2011) reports lower hunger scores in all regions (but not all countries) than in 1990. Several Asian countries have made enormous progress in improving food security, led by large changes in China and South East Asia. Latin American and Caribbean countries have also made significant progress, led by sharp declines in hunger in Brazil. African progress has been mixed, with worsening situations in the Democratic Republic of Congo and the Ivory Coast.

The Links Between Food Security and International Trade

Discussion about attaining food security at a national level is often framed as ethical debates over domestic food self-sufficiency versus openness to international trade. Ideology often overtakes such debates, but if the ethical objective is to improve food security outcomes, then it is more useful to center the debate on international trade's effects on food security. The effects are complex and there are several confounding factors that can cloud the identification of causal relationships. The important avenues through which international trade can affect food security are discussed below.

1. Specialization and Income Growth

One of the core tenets of economic theory is that countries that are free to trade with each other will specialize in the production of products in which they have comparative advantages. Specialization will increase production and generate higher total income in both countries. Higher income, when viewed through the lens of Sen's

entitlements, should result in better economic access to food and improved food security. This argument extends to countries that adjust their production patterns away from food; higher income that is generated by more efficiently producing and exporting nonfood products can be used to import more food than was available prior to undertaking international trade. Lower domestic food production need not reduce food security – the linkages run from specialization to income growth to poverty reduction to improved food security.

Specialization involves reallocating resources and necessarily increases demand for some inputs and reduces demand for others. Such reallocation changes relative factor payments (wages to laborers, rent to land and capital owners) and generates winners and losers in the short run. A large portion of poor, food-insecure households derive the majority of their income from wage labor, so the direction of real wage movements after liberalization will have important effects on food security. As a country specializes in production of products that are labor-intensive, demand for laborers will increase and there will be upward pressure on wages. Such specialization could, however, reduce demand for land, thereby reducing rental rates and income to landowners. It is impossible to generalize the effect of liberalization on wages across countries, as each country's experience will depend on the directions of specialization.

2. Terms of Trade and Food Prices

The relative prices of imports to exports will change as countries remove, or reduce, trade-distorting policies. Again, it is impossible to generalize the direction of food prices across countries because of the complicated nature of distortionary policies that are commonly found in agricultural industries and the incomplete nature of trade agreements. For example, consider a liberalizing agreement to reduce import barriers between trading partners. As import barriers are reduced in large importing countries, demand for imported food will increase, thereby increasing the world price of food; this is expected to increase income and improve food

security for net food producers and worsen food security for net food consumers. The effects of broad-based multilateral trade agreements (in the tradition of World Trade Organization agreements) on food prices are much more difficult to identify. The World Trade Organization's (WTO) Uruguay Round agreements (which include the Uruguay Round Agreement on Agriculture) and the Doha Development Agenda (DDA) proposals include disciplines on a wide range of trade-distorting policies. Lower import barriers in large countries are expected to exert upward pressure on world food prices, but these effects would be dampened by lower levels of domestic support in developed countries. Disciplines on other trade-distorting policies, such as food safety regulations and export competition, further complicate the analysis. The net effects of a new round of trade liberalization on food prices would depend on the breadth (coverage of a range of policies) and depth (size of cuts to distortionary policies) of new rules. Computable general equilibrium models that incorporate DDA proposals generally predict increased prices for staple food commodities (see discussion, below).

3. Foreign Direct Investment

International integration can also involve closer investment ties between trading partners, which manifests as foreign direct investment (FDI). More than 2,700 bilateral investment treaties have been signed (UNCTAD 2010) and many preferential integration agreements extend beyond trade in goods to include rules on FDI. The primary avenue through which FDI can improve food security in developing countries is income growth as a result of technology transfer from developed countries. Foreign direct investment brings modern technology and production methods to relatively inefficient industries in developing countries and can increase productivity, and therefore income, in host nations. The ownership of the proceeds from increased productivity is an important factor in determining the benefits of FDI, however. It can be difficult to find a balance in which the innovating foreign firm receives sufficient returns to justify the FDI and workers in the host country receive a portion of

the fruits of higher productivity. See Saggi (2002) for a survey of FDI and technology transfer.

The acquisition of agricultural land by foreign firms and state governments has received a great deal of attention in media sources (von Braun and Meinzen-Dick 2009) and led to public pressure to block some proposed projects. State actors, including China, South Korea, and several Middle East states, have been motivated to acquire foreign agricultural land in attempts to stabilize future food supplies. Though such projects have the potential to improve productivity in low-productivity host nations, this form of FDI has been controversial because of concerns about foreign investors' commitments to control environmental impacts and concerns about the insecurity of land tenure in many developing countries. Such land is often formally owned by the state, and inhabitants who use the land without formal title may be forced to relocate.

4. Stability

Shocks to agricultural production are inherently covariate across producers – weather, pest, or violence shocks that affect one producer are likely to affect all producers in the surrounding area. The covariate nature of shocks makes production of food in any one geographic area unstable and a population that relies only on regional production is vulnerable to production failures that could significantly affect market supply and prices. Reliance on regionally produced food is one end of the trading spectrum, with global free trade marking the other end. A population that acquires food supplies from a global market without trade barriers is necessarily less vulnerable to production-induced supply and price volatility, because a larger market diversifies the production risks that affect agriculture. A globally integrated food market would transmit price signals from locations with shortages to locations with surpluses and trigger arbitrage-induced movements of commodities.

The food crisis of 2008 laid bare one of the important downside risks that developing countries face by increasing their dependence on foreign food supplies. Several governments in net food exporting developing countries imposed export restrictions on food in attempts to

constrain domestic food price inflation. Such policies are necessarily beggar-thy-neighbor because lower world supply applies upward pressure on world prices and negatively impacts net food-importing countries. Net food-importing developing countries that had historically relied on these products were forced to either pay higher prices or find alternative sources. This raises a clear ethical question for governments that impose export restrictions, but such decisions are political and it may be unrealistic to expect that concerns about negative effects on trading partners will trump domestic political pressure in times of high food prices.

World Trade Organization disciplines on export restrictions did not apply to the types of policies that were implemented over the past few years (Headey 2010), and such anti-trade behavior remains unchecked. Trust in the global food trading system has been shaken by these policies and there have been movements in several countries to reduce reliance on imported food. It is important to note that restricting exports (anti-trade policies) form the core of the problem, not the opening of importing countries to food trade (pro-trade policies).

Economic theory, and some empirical evidence, suggests that free trade will increase income growth, reduce poverty, and stabilize food availability and prices. It is important to note, however, that these predictions are made in the theoretical vacuum of a first-best world in which there are no deviations from best policies. If one or more of the foundational assumptions of these models is violated, then accurate predictions about, for example, lower import barriers improving food security cannot be made. This is the basis of Lipsey and Lancaster's (1956) theory of the second best, which is crucial to understanding the effects of international trade agreements. WTO agreements allow implementation periods over which countries can adjust policies to adhere to their obligations, and not all industries are not liberalized to the same degree (e.g., trade-distorting policies in agricultural industries were not subject to many disciplines prior to the 1995 Uruguay Round Agreement on Agriculture). Such complications make it very difficult to

project, even at a theoretical level, what will happen to income and food security in the short term as trade is liberalized. The case of export restrictions is a clear example of this – net food-importing countries that lowered food import barriers in anticipation of lower and more stable prices were met with new anti-trade export restrictions in exporting countries. This sequence of events may have worsened food security in some importing countries in the short run.

International Agreements

The trade rules that are most relevant to food security in developing countries can be found in the agreements of the WTO. The WTO is an international organization that oversees a range of trade-related agreements between 157 member countries, several of which are developing countries in which food insecurity is prevalent. The primary motivation for countries to pursue multilateral trade agreements under the WTO is to provide a stable and predictable rules-based international trading environment in which countries can specialize and reap the gains from trade. Most WTO agreements have been designed to reduce the prevalence of trade-distorting policies (i.e., policies that change producer and consumer behavior in a way that affects trade flows) in member countries. The WTO does not have a development, or food security, mandate (like international organizations such as the International Fund for Agricultural Development or IFPRI), but the policy reforms required of its member countries can have significant effects on income and welfare. The principle on which WTO negotiations rests is that freer trade will induce specialization, which will in turn increase incomes and improve food security outcomes.

The Uruguay Round Agreement on Agriculture (URAA), entered into force in 1995, is the WTO agreement that is most directly linked to issues of food security. The URAA spells out member countries' obligations with respect to food trade and domestic agricultural support policies, and its disciplines are categorized into three pillars. Market access rules outline the maximum

tariff rates that member countries agree to place on other members' imported products. Such rules could positively affect food security in two ways: first by increasing income in developing countries' export industries (through lower tariff barriers into developed countries) and second by decreasing the price of food imports into developing countries (through lower tariff barriers into developing countries). Producers in developing countries will, however, face more competition from international producers as import barriers fall.

The second pillar contains disciplines on domestic support measures that governments provide to agricultural producers. Domestic support is typically very low (and sometimes negative, through taxation policies) in developing countries, and these disciplines are most relevant to developed member countries. Lower domestic support in developed countries can reduce production levels, thereby increasing world prices; this can have offsetting effects on food security by increasing world food prices and by making exports from developing countries more competitive on the world market. The third pillar concerns export competition and contains rules on subsidies and export credit guarantees. It is most relevant for developed-country policies – the European Union accounts for almost all of global agricultural export subsidies. Export subsidies are used by exporting countries to unload domestically produced surplus commodities that are uncompetitive at world prices. A reduction in such subsidies could increase the prices for such products in importing developing countries but also render production from developing countries, from where exports are not subsidized, more competitive in global markets.

World Trade Organization member countries recognized that trade policy reforms could have negative short-term effects on food security in some net food-importing developing countries. This led to the Marrakech Decision (WTO undated) that acknowledged this possibility and has framed DDA round of trade negotiations. The proposals that have emerged from DDA negotiations target deeper and wider cuts in agricultural tariff barriers and domestic support measures and

include binding disciplines on food aid shipments. International food aid is widely viewed to have been used as a tool of surplus disposal by some donor countries, and competing exporters are seeking to limit the circumstances in which food aid shipments would be allowed. New rules on food aid will be difficult to enforce and are becoming less relevant as most donors have transitioned away from using food aid as a vent for disposing of surplus commodities (Cardwell 2008).

Several developing-country WTO members believe that they were not provided the market access to developed-country markets that was promised in UR negotiations because of “dirty tariffication” (in which tariff rates are inflated so that mandated tariff rate cuts do not result in improved market access) by developed countries. This practice did not violate member countries' obligations, but was outside the spirit of the WTO's liberalizing agenda and has been viewed as unethical by some commentators. Developing countries have responded by taking firmer bargaining positions in DDA negotiations, which has contributed to the glacial pace of progress. One result of developing countries' stance is that they are likely to continue to receive “special and differential” treatment in future WTO agreements, in which they are granted extended implementation periods and special provisions for least-developed countries.

Other agreements in the WTO can also significantly affect food security. Disciplines on nonagricultural market access (NAMA) have the potential to impact trade flows more significantly than agricultural rules because the value of global nonagricultural trade far exceeds the value of agricultural trade. Access to developed countries' services and manufacturing markets can have important income effects in developing countries with burgeoning nonagricultural sectors. Note, however, that trade barriers in nonagricultural industries are much lower, on average, than for agricultural industries. The effects of future NAMA policy changes will likely be smaller than the effects of changes to trade-distorting agricultural policies because there are fewer reforms to be made.

There has been a proliferation of preferential trade agreements (PTAs) – sometimes referred to as regional trade agreements – in recent years, in which two or more countries agree to preferential trade barriers. There are currently more than 240 such agreements in force, and many involve blocs of developing countries. The effects of PTAs on food security vary, depending on the breadth and depth of their coverage. Some PTAs provide deep integration across countries by eliminating most trade barriers (e.g., the Southern Common Market, MERCOSUR), while others are narrow in scope and do not liberalize trade across a wide range of industries (e.g., the Southern African Development Community, SADC). The effects on food security will be proportional to the level of integration with trading partners. There are two important differences between PTAs and multilateral agreements that differentiate their effects on food security. First, most PTAs do not contain provisions for reduced domestic support to agricultural industries. This means that distortionary subsidies that induce overproduction in some countries may not be affected by PTAs. Second, some of the largest effects of multilateral trade agreements are expected to arise from improved access to developed-country markets. Preferential trade agreements that are struck between developing countries will not provide such access.

Evidence on Food Security and International Trade

The path of causal links from international trade to food security is long and complicated. There are several intermediate and confounding factors that have to go right for increased trade to improve food security outcomes. The nature of economics as a social science makes the identification of these effects difficult. Economic analyses of international trade policies cannot be conducted within the framework of repeatable randomized controlled trials that cleanly identify cause (change in trade policy) and effect (change in food security status). Instead, economists rely on observational data to infer causal links through

statistical studies. These studies leave much to be desired in the identification of the effects of international trade on food security. Three approaches to identifying the links have been summarized.

Case studies that describe individual countries', or regions', food security status before and after trade liberalization can be instructive about selective experiences but are problematic from an analytical perspective. Case studies are not internally valid, meaning that they do not control for the range of confounding factors that could impact food security outside the effects of trade changes. Nor are case studies externally valid; any conclusions drawn from such studies are relevant only to the case being studied. The very specific conditions of the market in which the study was conducted would not generalize across countries with different policies in different time periods. Policy prescriptions that are based on such analyses are viewed with caution because of these limitations.

Simulation models use economic theory and statistically estimated parameters to evaluate the expected effects of trade liberalization scenarios *ex ante*. These analyses better control for confounding factors by using parameters that have been estimated in statistical models. Simulation models typically take one of two forms (Abler 2006). Partial-equilibrium models simulate market behavior in disaggregated sectors to estimate the welfare effects of trade liberalization. Partial-equilibrium models are useful because trade liberalization occurs across industries that are very different, and such disaggregation allows for the modeling of industry-specific peculiarities. The primary drawback of partial-equilibrium models is that they do not allow for interindustry connections, which can be very important in the links from trade to income growth to food security.

Computable general equilibrium models also use econometrically estimated parameters to analyze trade liberalization scenarios *ex ante* but do so in a framework that aggregates across commodity groups and includes several, or all, sectors of the economy. These models include interindustry connections and can generate estimated income effects, from which poverty and

food security estimates can be derived. Computable general equilibrium models are the most commonly used tools for estimating the effects of international trade agreements, and several organizations manage large-scale models of this kind (e.g., GTAP at Purdue University and the MIRAGE model at IFPRI).

Anderson et al. (2006) use the World Bank's LINKAGE model to show that trade liberalization, as outlined in the DDA negotiations, would reduce poverty, particularly in developing countries. They do not explicitly estimate food security status, but the estimated reductions in poverty can be extrapolated to generate positive effects on food security. Hertel and Winters (2006) provide an overview of GTAP-based studies that estimate the effects of a DDA agreement on poverty. They find mixed short-term effects (increased poverty in some countries, decreased in others) and reduced poverty in the long run. Note that a link from poverty reduction to food security (through entitlements) must be made for one to draw conclusions about food security from such studies.

A third approach is to analyze the effects of trade liberalization *ex post* by econometrically modeling a measure of poverty or food security as a function of the implementation of international trade agreements. One such study (Bezuneh and Yiheyis 2009) finds that food availability decreased in the short run after trade agreements, but long-term effects are uncertain. The findings of such studies must be viewed with caution, however, because of the difficulty in identifying the effects of trade agreements on food security. There are important methodological problems in identifying cause and effect in econometric models of this type. Also, Bezuneh and Yiheyis (2009) use national food availability (production plus imports plus food aid) as a dependent variable; food supply is not an accurate representation of food security.

Summary

The ethics of food security are clear; the pursuit of universal food security is almost unanimously

viewed as valuable. The role of international trade in food security is not clear, but it is important to analyze its effects scientifically instead of ideologically. Such analyses are necessarily incomplete, and the empirical evidence on the effects of increased international trade on food security is mixed. There are compelling theoretical reasons to believe that more international trade will improve food security outcomes in the long term, but pronouncements on the prospective effects of future trade agreements must be made with caution. International trade agreements are piecemeal and are implemented in countries with a wide range of economic conditions that may not conform to the simplifying theoretical assumptions of economic models.

Cross-References

- ▶ [Agricultural and Food Products in Preferential Trade Agreements](#)
- ▶ [Food and Agricultural Trade and National Sovereignty](#)
- ▶ [Food Assistance and International Trade](#)
- ▶ [Food Security](#)
- ▶ [Food Security and Rural Education](#)
- ▶ [Free Trade and Protectionism in Food and Agriculture](#)
- ▶ [Multilateral Trade Organizations, Food, and Agriculture](#)
- ▶ [Trade and Development in the Food and Agricultural Sectors](#)
- ▶ [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Food Security and Rural Education

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Synonyms

Agriculture; Community; Education; Food; Rural; Schools

Introduction

The purpose of this chapter is to consider how rural education, and rural schools more particularly, might contribute towards food security. The practice and policy context for this is Australia which, it is recognized, has points of distinction when compared to other countries. Notwithstanding, there are ways to generalize from the specificity of the Australian context, including through a set of principles for progressing an ethics of sustainability which are presented and considered later.

Why an ethics of sustainability? Why link it with food production, food security, and schools in rural contexts? Fundamentally because profiling an ethics of sustainability brings together critical matters of choice with regard to purpose, and principally *moral* purpose, and taking action to “do what is right, to do what is required” in the light of overwhelming evidence. Food production and distribution and security challenges confronting the globe underpinned by unprecedented population growth rates are an instance of overwhelming evidence *for something to be done differently*. Kurlansky’s deeply insightful and disturbing book on the biography of the cod and its demise overtime – “abundance turned to scarcity through determined short sightedness” (Kurlansky 1997) – epitomizes how a potentially sustainable resource has been pushed to the brink of extinction by an absence of an ethics of sustainability to inform and govern choices.

Schools and education are used to reinforce values and attitudes about national priorities as well as deal with emerging challenges and problems. Put another way, schools induct the young into society and nurture their agency; they are also used to “fix problems.” Drawing on nearly half a century in education working from pre-school through tertiary levels, some illustrations are as follows: sex education to deal with sexuality and sexually transmitted diseases, consumer education to make students more informed consumers, environmental education to bring the natural world into the foreground of thinking and action, parent education for preschoolers to

ensure children get a “better start to life,” and so forth.

link with food through curriculum specializations).

Context and Dimensions

Australia comprises six states and two territories, each of which has an elected parliament as well as a national government. It has a population of 22.5 million, the majority of who live in the three most populous states – New South Wales, Victoria, and Queensland – and a land mass of 7.5 million square kilometers. Distance and very low population density are two of the dominant challenges of ensuring all children can access schooling. Under the Constitution, the states and territories are essentially responsible for providing and managing schools. In recent years though, the national government has played an increasingly important role in education, principally through its financial powers and by developing coalitions of support for national initiatives like the Australian Curriculum, the public release of school performance data, and literacy and numeracy testing.

There are approximately 9,500 schools in Australia for 3.5 million full-time equivalent students from preschool through year 12. Direct responsibility for running schools is vested in the states and territories. As well, there are three main schooling sectors – government (6,743 schools), catholic (1,708 schools), and independent (1,017 schools). Definitions of a rural school vary by jurisdiction and by sector. However, around 40–50 % of schools are in nonurban locations in communities which vary in size from about 100,000 to less than 100. In some locations, schools are literally in the corner of a farmer’s paddock. Most rural schools are government because governments are required by legislation to ensure children can access education. As well, most rural schools are in close proximity to a primary industry and, in some instances, have direct engagement with primary industries through agriculture topics and farm practices, aquaculture projects, and courses which provide support services for primary industry enterprises like technology studies and economics. (There are also a few urban schools which have a direct

Food Security

Food security is inextricably linked to the principal social, political, economic, and cultural dimensions of a society and particularly to environmental health, well-being, and sustainability because of the fundamental connection between nature and food. Flannery argues that “[o]ur search for sustainability . . . [is] the greatest challenge we have ever faced” (Flannery 2008). Pretty’s focus on sustainability and agriculture foregrounds human activity as central to understandings of it and highlights “not damaging the environment” (Pretty 2002). Goldie, Douglas, and Furnass draw upon the Brundtland Report of 1987 for their definition of sustainability: “the capacity of human systems to provide for the full range of human concerns in the long term” (Goldie et al. 2005). Their definition accentuates imperatives for survival.

Food production and food security are not discretionary items of national policy or of national productivity. As Pretty argues, “[w]ithout food, we are clearly nothing. It is not a lifestyle or add-on fashion statement. The choices we make about food affect both us, intrinsically, and nature, extrinsically. In effect, we eat the view and consume the landscape. Nature is amended and reshaped through our connections—both for good and bad” (Pretty 2002). Put another way, “will there be sufficient nutritious food available for nine billion people by the year 2050?” (Persley and Blight 2008). The majority of the food consumed daily in Australia is produced in rural areas. To illustrate, the Murray–Darling Basin, while comprising only 14 % of Australia’s landmass, supports around 42 % of Australia’s farms (Cullen 2005). Producing food, even where it has “gone the way of high tech,” still requires large numbers of highly skilled and semiskilled workers. Unlike mining, agriculture and horticulture are not as conducive to a fly-in/fly-out model of labor supply, even with the advent of agribusiness.

Ensuring that Australia remains a country that is food secure cannot be taken for granted. As Australia's population grows and changes over time and the impacts of climate change "kick in," new problems and opportunities will emerge. These changes, and others that food production and distribution are reliant on, provide new policy development and program opportunities for rural education, rural educators, and rural communities.

Rural Education and Food Security

Exploring new relationships and partnerships between rural education and food production and security has the potential to build new understandings and practices about them and also arrest, or at least slow, the marginalization of rural education and rural communities in relation to contributing to Australia's future. Rural education needs to partner with other essential human services like health services and local government and the private sector to address the challenges of ensuring that people who work in primary industries or who are directly impacted by the vibrancy and profitability of them can access high-quality education. As Allison concludes, following an analysis of the possibility of "'ordinary' landscapes or communities within which we live, work and educate", to reinvigorate ways of shaping the future "sustainability [of food production] immediately shifts the perception of 'ordinariness' of these... landscapes" and opens the way to new possibilities (Allison [n.d.](#)).

Linking rural schools and rural education with food production and food security creates new spaces of opportunity of an intellectual kind as well as a locational and physical kind. Intellectual in the sense of "pushing the envelope" of the broadly accepted roles and functions of schools in society. Physically in terms of how the spaces provided for schooling in rural communities – classrooms, specialist learning areas, offices, playing fields, and so forth – might be enjoined in the "big project" of food production and food security.

Soja provides theoretical tools to assist with reconceptualizing the role and function of schools, of education in rural contexts. He argues that the preferencing given to social and historical perspectives on issues is key to understanding why space and spatiality are virtually absent from critical discourse on major matters like food and food security (Soja [1996](#)). Thinking differently about space and spatiality according to Soja may produce insights about phenomena, such as transforming rural schools to play a significant part in progressing food production and food security. This "thinking differently" Soja calls "Thirdspace," "a purposefully tentative and flexible term that attempts to capture what is actually a constantly shifting and changing milieu of ideas, appearances, and meanings" (Soja [1996](#)).

The central challenge of "Thirdspace" is to "begin to think about the *spatiality* of human life in much the same way that we have persistently approached life's intrinsic and richly revealing historical and social qualities: its *historicality* and *sociality*" (Soja [1996](#)). This is because, from Soja's perspective, while it can be assumed that "rightfully" there will always be historical and social dimensions brought to bear on issues or problems, there *is* more. Integral to "Thirdspace" is an invitation to "set aside the demands to make an either/or choice and contemplate instead the possibility of a both/and also logic..." (Soja [1996](#)).

Following are three brief case studies of rural schools in South Australia which illustrate various ways of engaging with local rural communities, food production, and education. For the Cowell Area School, it is aquaculture; for the Cleve Area School, broadacre cropping; and for Mypolonga Primary School, it is local horticultural produce coupled with tourism.

Cowell Area School enrolls students from pre-school age through year 12, the final year of secondary education in Australia. The school is located 500 km northwest of Adelaide (the capital of South Australia) in the township of Cowell which is situated on Franklin Harbour. The district population is approximately 1,070, and at the time of writing, the school had an enrolment of 178. The school has a community library – as do

all other area schools in the state – which serves the needs of students and adults of the community.

Over 20 years ago, it started becoming very clear that Cowell was essentially dying due to the impact of poor grain yields from drought and near-drought conditions and the added continuing drift of young people out of the town to greener pastures. Sitting on the town's doorstep, however, was a 49 km² pristine body of protected water, Franklin Harbour. There was also a local council keen to do whatever was necessary to save their town, a state government who was active in trying to support local communities take action, and a school leader willing to go beyond the confines of policy and established ways of being a school principal – ideal “raw materials” for a new venture in aquaculture.

The school's website tells the story:

The Aquaculture Course at Cowell Area School has grown from an idea put forward by a group of local oyster growers to a structured course undertaken over two years of senior secondary schooling.

In 1991 Cowell oyster growers initiated contact with Cowell Area School and requested a course that would suitably equip students for entry into the Aquaculture industry. 1992 was spent developing a curriculum, in consultation with local oyster, yabby, abalone, and fin-fish growers, Department of Education, TAFE (Training and Further Education), AFA (Australian Fisheries Academy) and SAFITC (South Australian Fishing Industry Training Council).

The course was appropriate for the industry, while still maintaining the educational outcomes of a senior secondary program. The first course was offered in 1993 and has continued to grow to this day, with a 90 % success rate of all students undertaking the course.

1999 saw the implementation of a full time farm manager (Tom Kenny) and a 0.5 time teacher to directly support students whilst in the classroom. Since 2000 the teaching position has been full time (1.0). Skills in aquaculture are gained through work placements within the industry, at the school's oyster lease and fish farming tanks at the school.

Aquaculture in Cowell is now a major local industry with an annual turnover of around \$5 million and employing 40 or more people. These achievements are due in no small way to the preparedness of the school to respond very positively when first approached about playing a formative role in providing skilled workers. Over time,

aquaculture courses available at the local school have changed to place greater emphasis on sustainability and particularly sustainable technologies. Critical to achieving these changes has been school leaders who have embraced a vision of education in a rural community as being more than just what happens inside the school fence. The success of Cowell Area School's engagement with aquaculture has been the catalyst for other schools in the region to review their programs and develop options and pathways for youth to transition into marine environment food production (<http://accia.cowell.as.sa.edu.au/cms/>).

Cleve Area School is located on the Eyre Peninsula approximately 600 km from the capital of South Australia. It provides education for students from entry through year 12 and has an enrolment of around 350 students. While providing local and district students with a broad and high-quality general education, the school also specializes in agriculture from years 10 to 12 with an emphasis on dryland farming. The school's website provides the following information on the specialization:

The Cleve Area School Certificate in Agriculture Course is offered to year 10, 11 and 12 students attending the school. Students can enter either at year 10 or 11 and will require a minimum of 2 years to complete the required Certificate II or III competencies.

The Cleve Certificate is delivered entirely at Cleve Area School's Sims Farm by Cleve Area School and Regional Skills Training (RST) Pty Ltd (Registered Training Organisation) staff. The course is nationally accredited, under the Australian Qualifications Framework.

The course prepares students for the following:

- tertiary study in the field of Agriculture;
- direct entry into the workforce;
- and/or further vocational training (eg Cert III & IV courses offered by Technical and Further Education, TAFE, or other Registered Training Organisations, RTOs).

The course does this by offering students both South Australian Certificate of Education (SACE) subjects and competency based learning. These dovetail together such that students gain one SACE unit for every 70 hours of learning in the Certificate II & III.

Cleve Area School's 400 Ha Sims Farm is used extensively to deliver the course. A self-replacing merino flock, prime lamb, and cereal cropping enterprises are run and studied by the students at Sims Farm. Students carry out as many of the day to day tasks involved in these as possible, and learn

to shear and crutch sheep. Students also have 'ownership' of a paddock where they plan and implement the cropping year by operating all of the necessary machinery (tractors, GPS guidance and mapping programs, airseeder, boomspray, harvester).

Workshops, day excursions, and guest speakers (from farmer groups, Primary Industries and Resources South Australia (PIRSA), Agribusinesses etc) are accessed as 'opportunities' arise. These provide excellent learning opportunities for students and an excellent way for students to build personal links with their future peers.

Camps are another highlight which aim to expose students to a broader range of agricultural environments and enterprises. In recent years year 11 students have travelled to New Zealand's south island, Northern Territory (Katherine and Darwin regions), Victoria's Wimmera district, South East, Northern SA's station country and Rangelands, Mid North & Barossa, and Kangaroo Island (<http://acacia.cleveas.sa.edu.au/cms/>).

Note: certificate levels are based upon the Australia Qualifications Framework which covers all formally recognized national education and training certification from entry-level workforce (Certificate 1) to doctoral level.

Studying agriculture – food production and food security – at the Cleve Area School “comes alive” because of high-quality teaching and through the school's “state-of-the-art” model farm which is based upon sustainable dryland practices. It is also assisted by the school having a boarding facility so students from outside the district can take the program.

Since 1975, there have been well over 400 graduates from the Cleve Area School Agriculture program. An estimated 60 % of these graduates have stayed in the district to work on farms or in agribusinesses. A further 20 % have gone onto tertiary education, and another 20 % returned to their out-of-district farms and other employment. The Cleve agriculture specialization directly supports a multimillion dollar broadacre farming enterprise and through this, employment in a wide range of commercial businesses and human services.

Mypolonga Primary School opened in 1916 and has an enrolment of 130 students. It is located in a fruit growing and dairy district near the banks of the River Murray, Australia's largest river.

The school has a shop which is the centerpiece for its community engagement around food and food products as well as other things. The website continues:

The School Shop started in 1994 in the disused Post Office across the road from the school. Originally selling student-made crafts, we quickly realised when a bus tour from the then Proud Mary, now Murray Expedition Paddle Steamer added the Shop to its itinerary, that we needed to source high quality, locally made crafts. (The students also make locally sourced dried fruit confection and sell jams and preserves on consignment.)

We sell locally made crafts, taking 20 % commission. Each class also makes their own produce. The Junior Primary class makes book marks, the Lower Middle Primary makes fridge magnets, the Middle Primary makes recipe books and the Upper Primary makes chocolate coated apricots and home-made lemon cordial.

We, the students are responsible for all financial record keeping. With a turnover of \$15,000 per year and over 30 consignors, we work hard to balance the books. We learn a lot about providing customer service, balancing the books and always improving what we do (<http://mypolongaps.sa.edu.au/wp/>).

Essentially, year 6 and 7 students (the final 2 years of primary school) engage with local people, as well as a few suppliers from the metropolitan area and some other schools in the district, to acquire stock for the shop, sell it, and ensure that suppliers are paid when their goods are sold. Profits go into school funds for special projects. Each student involved in the shop initiative is required to keep a computer inventory for each of their suppliers. They are also required to rotate through the various jobs of opening and running the shop, for example, greeting the tourists when they arrive each week, presenting them with complimentary samples to encourage purchases, ensuring shelves are well and attractively stocked, accurately counting and recording takings, and keeping the garden associated with the shop in good shape. Students are assessed on each of these tasks.

While the school's direct income may be modest by some scales, by others it is very significant. It is certainly very significant for the Mypolonga school and community because in and behind the dollars are countless stories that build and sustain

relationships across age groups and with people from the four corners of the globe and provide an “edge of difference” about what makes “our town and why we want it to endure.” As Wheatley and Kellner-Rogers assert, “[t]he future of community is best taught to us by life” (Wheatley and Kellner-Rogers 1998).

Discussion

Rural contexts have evolved and changed over time and will continue to do so. Looking forwards, there will need to be “an openness to ruralities that are quite different from those we are familiar with” (Cocklin and Dibden 2005). The capacity to accelerate the speed at which the evolution and change of rural contexts occurs has been dramatically increased through globalization – especially via ICT, interconnectedness, acceleration, dis-embedding, and standardization (Eriksen 2007) – and through the continued growth of the world’s population. The pressures these place upon the ways that community functions and on the environment, finite resources and relationships at a multitude of levels, are profoundly significant. The changes require – demand – a radical reframing of the role rural education, and rural communities might play in nation building and nation sustaining through food production and food security.

Education is a powerful and pervasive resource for perpetuating and for changing ways of thinking and perceiving, ways of being, and ways of doing and responding. Rural schools function as they do because of a complex mix of legislative requirements, policies, established practices, and expectations about “what schools should do.” The “givenness of schools,” however, is constructed and therefore is “open” and “available” for change. Put another way, rural schools are as they are because of a long history of decisions, and they would have been different than they are had different decisions been taken. Or in the words of Lefebvre quoted by Soja “(t)here is always *Other*” (my emphasis) (Soja 1996).

Transforming rural schools to become active agents in food production and security and

championing ethics of sustainability, either directly through primary production or via designing, teaching, assessing, and accrediting courses which prepare youth for careers in primary production and associated areas, are major undertakings. The undertaking falls most directly to school leaders. Staying with Soja’s theorizing, the primary challenge is to embrace the pursuit of *Other*. Doing this requires rural educational leaders spending time creating and seeking out opportunities that have the potential to disturb and shift the status quo towards some other state which they, and desirably others, believe is likely to be more beneficial for students, staff, and the community and the “big agendas” of food production, food security, and sustainability.

School leaders need to do this in many different ways including by questioning, by influencing meeting agendas, by developing links and alliances within and beyond the school, by moving around and through the school picking up clues, and by making suggestions as to “what might be done instead.” They also need to create and seek out opportunities that have the potential to shift the status quo by sharing images they have about the purpose and essence of education and by projecting a sense of control blended with a preparedness to enter into collaborations with others. As well, they need to draw upon the experiences and advice of colleagues and community and use various ways for reducing multidimensional possibilities into “manageable bits” to progress schooling transformations which contribute to overall deeper engagement with food production and food security efforts.

Principles which frame the global challenge and imperative of sustainability in light of the growing pressures on the planet, primarily through population growth, are also a resource for transforming rural schooling towards producing explicit learning about and for food production and food security. Principles “capture” the essences of issues and challenges and help to scope dimensions and complexities. They serve as bridging agents between the “big picture” and local contexts and provide indicators of the specific work required in order to change policies and practices. As well, principles are a basis for

taking the content of a particular context, evaluating and assessing the merits of them and then generalizing to other situations.

The following are principles that could help the transformation of rural schooling as being advocated:

1. The sustainability of rural contexts and communities and those who live and work in them is central to sustainability nationally and globally.
2. Rural contexts and communities require a productive blend of internal (or endogenous) and external (or exogenous) factors and resources to influence and facilitate sustainability.
3. Human services which are available, accessible, affordable, acceptable, and adaptable, at a local community level, are essential for the sustainability of rural contexts and communities.
4. Resourcing of human services for rural contexts and communities is an investment in sustainability.
5. Sustainability is more likely to be optimized when interconnections between human, natural, institutional, produced, and social forms of capital are recognized and used.
6. Sustainability is more likely to be optimized when government funding and accountability requirements are able to flexibly transcend portfolio boundaries.

As argued at the 2008 National Community Education Association in Dallas, Texas, rural schools are complex organizations, and processes of change, especially ones that challenge schools and school leaders to step outside conventional ways of functioning, can disturb and disrupt “taken-for-granted” patterns of behavior. For instance, what happens during a financial crisis when depositors withdraw their funds and trust in banks, so too a community can withdraw its support of a school if it is being seen to be not paying attention to “core business” – children and their learning. Using schools as a platform for progressing deep engagement of students in food production, food security, and the ethics of sustainability requires leaders to work across several change fronts simultaneously and iteratively. This in turn means that rural educational leaders

need to know and understand deeply the cultural contexts – or as MacGilchrist, Myers, and Reed would say, they need “contextual intelligence” (MacGilchrist et al. 2004). They also need to have a sound grasp of the main elements of school operations that, in essence, “define” what a school is and what sustains the work of a school and indeed that single a school out from all other organizational forms. Of primary importance, here are curriculum, pedagogy, care of and relationships with students, relationships with parents and community members, concern for standards, and concern for a school’s credibility.

In a book of contributions on the future of leadership by various authors, written to celebrate the life and work of Warren Bennis, Bennis has the privilege of authoring the final chapter. His last words in the chapter are especially pertinent for rural educators and leaders and the educational challenges of food production, food security, and the ethics of sustainability. While acknowledging how history had influenced his career, he particularly emphasized the power of “the spirit of *place*” (Bennis et al. 2001). This is a fundamental challenge for rural leaders, rural schools, and rural communities in pursuit of new purposes and realms of operation – to discern and harness the “spirit of *place*.”

Summary

Schools and education are used to reinforce values and attitudes about national priorities as well as deal with emerging challenges and problems. Put another way, schools “fix problems.” This chapter considers how rural education and rural schools more particularly might contribute towards food security and an ethics of sustainability. To do this, three brief case studies of rural schools which are engaged in various forms of food production education are presented and discussed. While the practice and policy context is Australia, principles for progressing an ethics of sustainability incorporated in the chapter are a basis for generalizing to other places.

Cross-References

- [Community-Supported Agriculture](#)
- [Economy of Agriculture and Food](#)
- [Food Ethics and Policies](#)
- [Sustainability of Food Production and Consumption](#)

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Food Security in Systemic Context

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Synonyms

Anti-hunger work; Emergency food; Food access; Food insecurity; Food justice; Food policy councils; Food sovereignty; Hunger; Right to food; Social and spatial contexts of food insecurity

Introduction

Food security has become an increasingly prominent topic in the last four decades, given escalating concerns related to volatile food prices, climate instability (and related crop unpredictability), and losses of resilience in agro-ecological and institutional food systems related to the restructuring of global agri-food regimes. While the most austere definitions of food security equate being food secure with the availability of some number of calories, more systemic definitions describe food security as being “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice” (Hamm and Bellows 2003, p. 37).

As the flagship organization attempting to coordinate international efforts to address hunger, the Food and Agriculture Organization of the United Nations has provided a central forum for discussions of food security, nominally since the inception of the World Food Programme in the early 1960s and the World Food Summit of 1974 (see also “► [Food Security](#)”). In this debut on the

world stage of anti-hunger politics, food security was defined as the “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (FAO 2003). Since that time, and the creation of the Committee on World Food Security as an intergovernmental body for developing and reviewing food security policies, the term’s meaning has been heavily contested, challenged, and transformed. The FAO’s accepted definition has changed multiple times in response to the complexity confronted in attempts to ensure food security through development (World Bank 2008). Similarly, the scale of assessment and policy has changed, from a focus on global and national scales to the household and individual. Current FAO food security approaches can be reviewed in the regular publication *The State of Food Insecurity in the World*, which has been published jointly almost every year since the 1996 World Food Summit by the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development, and the World Food Programme to discuss underlying causes of hunger and malnutrition and monitor progress toward hunger reduction targets established at the 1996 World Food Summit and the 2000 Millennium Summit.

In the wake of the catastrophic failures of food markets to feed people adequately in 2008 and 2011 (partially under the stress of speculation in food commodities), a critical minority of discussions on food security have shifted away from charity-based food aid – and even away from entrepreneurial promotions of market access for agricultural producers – toward consideration of the structural conditions that enable or disrupt food security. Generally, in the postcolonial period, after modern governments were supposed to have vanquished vulnerability to famine, the persistence – and, in fact, rise – of hunger as what the World Food Programme calls “the world’s greatest solvable problem” has complicated approaches to food security that focus largely on caloric availability in favor of more systemic approaches (see also “► [Food Assistance and International Trade](#),” “► [Food Security and](#)

[International Trade](#)”). This shift toward systemic understanding of food security has not only been from global to more local scales and from caloric sufficiency to *nutritional* sufficiency but also to an explicit emphasis on ensuring food security across time and the idea that food security should not be dependent on emergency food supply. Systemic approaches to food security focus not only on the prevention and amelioration of hunger, but on the challenges to the integrity of food cultures and moral economies posed by the commodification of food.

The following exploration of food security briefly touches on the genealogy of the term’s significant usage as well as some of the tensions around food security in agri-food practice and scholarship. It reviews key themes that help illuminate why this term has remained central to anti-hunger work while not entering public discourse in clear ways. It describes challenges involved in assessing what food security would mean and in securing it. It reviews paradigmatic analyses across a continuum of food security approaches. Finally, in the context of contemporary struggles over the legitimacy of different approaches to food security, commodification of food commons, and the right to food, this entry considers the relationship between the related strategies of food security and food sovereignty.

Understanding Food Security

As discussed in a few scenarios below, food security is a commonly understood concept, but one that is often understood in significantly different ways, leading to tensions over approaches to addressing food security and perhaps contributing to common underestimations of the persistence of food insecurity, even in wealthy societies and nations with food surpluses. Food security has been named as a human right in international governance regimes for over 50 years, most notably with the mention of food in the 1948 Declaration of Human Rights, and in other work of the United Nations, particularly via the programs and committees focused on food, described above,

and more recently via the office of the UN Special Rapporteur on the Right to Food.

Despite decades of attention to food security named as such, as well as considerable official consensus about the desirability of including the right to food as an unalienable human right (see also “► [Right to Food in International Law](#),” “► [Food Security](#)”), the concept remains a specialized one used mainly in professional circles related to hunger relief and community empowerment. A major report on *Perceptions of the U.S. Food System*, commissioned in 2005 by the Kellogg Foundation, identifies food security as one of a set of key ideas that “act as de facto, and sometimes deliberate and explicit, anchors of communications about food systems” (FrameWorks 2005, p. 61). The report concludes that the idea of “food security” is not well understood, like many paradigms used by specialists to describe food systems most people know well, at least in part, through everyday experience. Based on extensive public discourse research in the USA, the authors conclude that they (p. 6)

Are confident not only that the phrase is unfamiliar, but that it would strike people as puzzling, since they tend to feel little or no insecurity related to food. . . . In order to understand the idea of food security, in something like the way it is understood by experts, people would need to have more of a sense of the ownership of food production, who decides where and how to distribute food for sale, and how prices are set, for example.

They continue, highlighting how a lack of a conceptual understanding of food security means that (p. 7)

Members of the public are also unlikely to appreciate the different values messages offered by advocates which relate the food supply to democracy, community empowerment and social justice (related to redlining, for instance). Instead, given their current dominant patterns of thinking, people are likely to associate this term with safety against terrorism, food tampering or shortages – i.e. vivid, concrete and immediate types of danger that can easily be associated with food.

This emphasis on safety and protection is a common US distortion of the idea of “food security” as securing food from intentional or unintentional contamination, at all points along

the food chain. The FrameWorks study notes that this orientation toward security in everyday life makes people more likely to engage in defensive ignoring of food system problems than in cooperation to address the systemic problems that contribute to food insecurity.

If an emphasis on securing food against fear of contamination is one source of confusion stemming from the way that the concept of “food security” has been used in some discourses (most notably US government funding sources that provide grants for projects to secure food supply chains), security in the context of financialization has also entered popular vocabulary in the wake of the global financial crisis. Since the “security” as a financial instrument is not what is meant in the phrase “food security,” this form of food “security” is not examined here, except to note that such financialization of food appears to be an increasingly problematic threat to systemic food security, as the Institute for Agriculture and Trade Policy primer on Excessive Speculation in Agricultural Commodities explores in some detail.

In addition to further confusing popular understandings of “food security,” the successful propagation of both food safety and food financialization discourses underlines the tactical nature of food in political and economic domains: from war to colonialism to the maintenance of class hierarchies (or, in contrast, to the securing of sovereignty), control over means for securing sufficient food is a central necessity of social organization (see also “► [Land Acquisitions for Food and Fuel](#),” “► [Food Security and International Trade](#)”). When considering the ethics of misunderstanding food security, it is useful to recognize how much efforts to ensure – as well as define – food security are bound up within state and industry politics as well as geopolitics. As scholars from the social sciences and humanities have pointed out, utopian expectations related to “technocratic fixes” to the problem of food insecurity, such as the Green Revolution (and its contemporary manifestations), often substitute for sustained engagement with the social organization needed to ensure food access (Cullather 2010; Hinrichs 2013).

Systemic Understanding of Food Security

Systemic approaches to food security start with the position that striving for food security requires not only addressing the acute or chronic experience of food insufficiency but also the broader *social* and *spatial* contexts that contribute to being either food insecure or food secure. Historically, food security measures by both national governments and the FAO focused on increasing the availability of food through production increases and grain reserves (see also “► [Poverty and Basic Needs](#)”). Increasing food production is often touted as a remedy for starvation and a presumed guarantor of increased food security to be achieved, for example, via GMO use and agrochemical inputs to increase yields. Despite the logic of this approach to problems of acute and chronic food scarcity, though, work such as Amartya Sen’s on the causes of famine has shown that the relationship between food supply and food security is not straightforward: “starvation is the characteristic of some people not *having* enough food to eat. It is not the characteristic of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many *possible* causes. Whether and how starvation relates to food supply is a matter for factual investigation” (Sen 1981, p. 1).

Such work has only slowly helped complicate public discourse about the importance of power in securing food by revealing that famines have historically occurred in times when food was available and abundant (Sen 1981; Davis 2000). This dynamic continues today, with high rates of hunger persisting (estimates suggest world food insecurity above 10 %) despite contemporary production of more than enough food to feed the world population (even if concerns about future production keeping up with demand appear legitimate from many perspectives). Even in nations that stockpile row crops to buffer national sovereignty in cases of shortage (see also “► [Food Assistance and International Trade](#)”), supply-side approaches do not necessarily translate into food security. Emergency grain rations may be caloric without being nutritious, and many people

(particularly farmers, for whom yield-increasing technologies have translated into lower prices for their crops) cannot afford even subsidized food. Commodification poses an ongoing challenge to food security because as food, a necessity, becomes a commodity it can only be exchanged for money, thereby creating disadvantages for those with less financial resources.

As Nick Cullather explains in his exploration of the political dimensions of the Green Revolution, “With its 20-million-ton buffer stock of grain to preserve self-sufficiency, India has more undernourished citizens than any other nation, some 213 million without enough to eat. The paradox of plenty continues to underscore the fallacy of addressing hunger exclusively as a supply-side problem” (2010, p. 266). Many of the world’s least food secure people (the “bottom billion”) are current or recent food producers – in this light, rural to urban migration into the informal urban settlements that are projected to house a quarter of the world’s population in the next two decades can be seen in terms of structural ways that food insecurity is related to existing social structures. In addition, a recent FAO report revealed that one third of the food produced globally is wasted or lost each year. This suggests that food shortage (production shortfalls), food poverty (inadequate food availability), and food deprivation (malnutrition) are not causal problems, but are rather manifestations of social and spatial organizations that prevent access to food (DeRose et al. 1998).

Historically, communities organized a variety of mechanisms to ensure secure access to adequate food in times of food scarcity. For example, in preindustrial England, the existence of “common” land ensured that peasants, “commoners,” had access to grazing land. With the expansion of capitalism, these “common” social institutions have been dismantled as part of a general process of commodification in which social and economic spheres became increasingly integrated and dominated by market relations, and extractive commercial interests in food production serve to systematically dismantle elaborate institutional supports for food security, such as state

grain supplies and emergency distribution systems (Davis 2000). For small farmers, particularly in poorer countries, commodification of farming inputs, such as seeds, also creates barriers to access.

In the postcolonial period, pressures to intensify commodification of public resources have grown with the increasing dominance of neoliberal policies since the 1980s. Neoliberal policies were pressed upon indebted nation-states by international lenders such as the International Monetary Fund and its structural adjustment programs (McMichael 2011). Neoliberal reforms espoused the efficiency of markets and the benefits of trade liberalization, while condemning the distortions of state interventions; in other words, the market was entrusted to deliver food security by endowing individuals with choices and by breaking down barriers to trade through deregulation and privatization. In practice, the neoliberalization of agricultural and food policies in developing countries encouraged their orientation away from producing staple food crops toward crops for export, leading to increasing dependence upon imports of staple products (see also “► [Economy of Agriculture and Food](#),” “► [Multifunctionality of Agriculture and International Trade](#)”). Furthermore, the “free” trade doctrine has privileged Northern, industrialized countries at the expense of the rural poor in developing countries (Schanbacher 2010). Not only has this development strategy failed to deliver upon its promises, it has also led to increased food insecurity, as reliance on world markets exposes importing countries to spikes in food prices. Compelling research has now demonstrated that in response to the global food crisis of 2007–2008, countries with adequate food production, such as Mali, fared much better than countries like the Gambia or the Côte d’Ivoire, which are much more dependent on imports of staple crops (Moseley et al. 2010). However, adequate financial resources and sufficient food production at the national scale still do not guarantee food security for all communities, households, and individuals. In the USA, households headed by woman, as well as African Americans and Latinos/Latinas, experience food insecurity

at disproportionately higher levels than the rest of the population (Heldke 2009).

In summary, systemic examinations of food security often focus on the way that institutions, particularly those that many argue are a central part of important social contracts around food, have been eroded or completely eradicated through the commodification of common property regimes, colonial expansion, and more recently, neoliberal erosion of state supports for agricultural and entitlement programs and other social safety nets. These processes do not impact all groups equally; divisions based on gender, race, and class continue to shape food security. In addition, war and other conflicts along with degraded environments all continue to pose significant challenges and obstacles to achieving food security worldwide (see also “► [Food Security](#)”). As multiple scholars and food security activists have noted, narrow definitions of food security that do not consider these ongoing systematic challenges underestimate the structural dimensions that reproduce conditions of food insecurity.

The Challenge of Systemic Assessment

Even recognizing the importance of the way that social and spatial relations produce food insecurity for some, and food security for others, the dynamics of food security are very difficult to assess. DeRose, Messer, and Millman summarize this challenge in their review *Who’s Hungry? And How Do We Know?* “Given the definition of hunger as consumption of a diet inadequate to sustain good health and normal activity, growth, and development, an ideal measure of hunger would involve a comparison between the diet actually consumed and that required for these purposes ... however [one] encounters significant difficulties both in measuring or estimating the diet and in defining the requirements against which it should be compared,” not least because of the practical difficulty of measuring whether people are getting enough to eat and assessing what is “enough.” While food insecurity may have outcomes severe enough to be

measured (such as death rates), standards of what normal or adequate “growth” or development are difficult to define, given the wide range of possibility in healthy growth patterns (DeRose et al. 1998, p. 20).

Regardless of the complexity inherent within the concept of food security, what is often counted in assessments of food security is caloric intake, which is both easy to measure and emphasized by prevailing models of productivism in agri-food systems and allied paradigms of food aid. Although the FAO has developed more complex measurements of food security that attempt to integrate more subjective, qualitative, and also nutritional indicators (and to support food aid regimes that strengthen rather than undermine regional food security), systemic conceptualizations of food security that include social justice and sustainability are even more challenging to assess and evaluate. According to Hamm and Bellows (2003), a systemic approach requires that food security be assessed and evaluated through participatory research, which draws on community-generated knowledge to assess needs and formulate improvement strategies. Holistic measures and approaches that are defined by and for affected communities, in coordination with policy makers and researchers, have the potential to be both adjustable to each individual setting while providing information for cross-referencing between places.

The Food Security Continuum

Systemic action for food security builds beyond short-term emergency assistance to encompass long-term strategies to build a “sustainable food system that maximizes community self-reliance and social justice” (Hamm and Bellows 2003, p. 37). A prime example of a systemic approach across multiple scales and levels of food security is the Food Security Continuum, a framework developed in Canada and used by food policy councils and nonprofit organizations to identify and act upon both the immediate and long-term obstacles to achieving food security. The food policy councils and food security networks that

use this continuum framework (e.g., of Alberta and Newfoundland and Labrador) demonstrate their systemic approach by asserting that “food security is dependent on a healthy and sustainable food system” and committing to ensuring food security not only by providing emergency food aid but also by building capacity and adopting “systemic change strategies” in long-term food policy and activism. This three-part system also bears some resemblance to the three paradigms of food security Lisa Heldke laid out in her 2009 critical analysis of the central conceptions of food access: charity, co-responsibility, and rights. The following section outlines this three-pronged approach with illustrative examples and briefly discusses some tensions related to these various dimensions of approaches to food security and their integration in something like a “continuum.”

Charity, Emergency, and Short-Term Relief Strategies

By far, the most dominant approach to hunger relief and food insecurity is the charitable distribution of food through food banks, international donations, and other voluntary means (see also “► Food Assistance and International Trade”). Although charity may provide necessary immediate relief, it is problematic because it empowers the giver with a sentimentally satiated sense of *noblesse oblige*, and it signals that “benevolent gifts are just that – gifts – benefactors labor under no obligation to include recipients in decisions about the form gifts should take” (Heldke 2009, p. 216; Poppendieck 1999). In addition, charitable giving by itself does not address the causes of food insecurity. Consequently, although perhaps acutely motivating, charity will always be insufficient without capacity building at multiple scales as well as efforts to work for systemic change.

Nevertheless, some relief initiatives framed as charity might cultivate capacity building in the long term. For example, in the wake of Hurricane Sandy on the east coast of North America in late 2012, millions were left without power, water, heat, and adequate supplies. Tens of thousands were left homeless, but established

disaster-response organizations were unable or too slow to take adequate care of the vast affected area and its population. Occupy Sandy, an outgrowth of Occupy Wall Street, was collaboratively developed to provide warm meals, distribute supplies, and organize volunteers for assistance and cleanup activities. Although explicitly providing charity in the face of acute necessity, like much food security work, this initiative spurred capacity building, as volunteers got involved, as well as a systemic critique of existing state and nongovernmental organizations and their failure to ensure food security.

Capacity Building and Co-responsibility

A focus on capacity building sheds light on the fact that achieving food security relies on creating and sustaining social organizations that respect the integrity of food cultures. Capacity building can occur at a variety of scales, connecting *across* scales as systemic approaches recommend – potentially constructing relational dynamics that evoke the co-responsibility by both individuals and society for food security called for in Heldke's analysis (2009). In the USA, the community food security movement has been instrumental at mobilizing community-scale changes in food policy since the demise of most remaining federal supply management programs in the mid-1990s (between 1994 and 2012, the Community Food Security Coalition provided a focal bridge in the USA between grassroots organizers, nongovernmental organizations, foundations, and government community food security programs as a broad membership-based organization). However, an ongoing problem with capacity-building work related to food security initiatives has been that people who disproportionately experience food insecurity have been "the objects of [food security] work but not the leaders of it" (Slocum 2006, p. 330). In the USA and elsewhere, community food security initiatives risk replicating the institutionalized racism prevalent in the dominant society and the agri-food system by acting with disregard to the power and persistence of racism and white privilege (Slocum 2006), particularly when they are allied with charity models. Not only does this

social dynamic encumber food security, it disregards the relationality and webs of dependence that forge the food system, producing its variegated outcomes of food security for some and insecurity for others (Heldke 2009). Privilege and racism are relationally produced, and therefore, confronting them while building capacity for food security requires a cultivation of Heldke's paradigm of co-responsibility between people and places, as well as an antiracist practice that strives to eradicate systems of oppression and exclusion (Slocum 2006). Such critiques bring attention to how initiatives that frame and practice food security have implications for their capacity to generate change.

One of the most successful and well-publicized food security initiatives is the capacity-building system organized at the urban scale by the government of Belo Horizonte, Brazil (Rocha and Lessa 2009). With the goal of providing access to healthy food for all residents, reducing rural to urban migration due to rural impoverishment, and equitable community empowerment, this municipality has conducted a multifaceted program over the past two decades, including a number of subsidized "popular" restaurants that have served up to 5,500 inexpensive and healthy meals a day, nutrition programs in schools, subsidized food baskets of nonperishable goods, support for farmers' markets and alternative modes of distribution, and urban agriculture programs (Rocha and Lessa 2009). At the national scale, Brazil has built on this model to create a National System for Food and Nutrition Security, "SISAN, through which the State, with the participation of organized civil society, will formulate and implement policies, plans, programmes and actions towards ensuring the human right to adequate food" (quoted in Rocha and Lessa 2009, p. 397). This initiative has prompted replication across Latin America and, particularly because of the ways that it navigates the complex and interwoven dynamics of charity, co-responsibility, and rights, has increasingly been taken up as a model for other broad regional efforts (e.g., in Africa) highlighted extensively by the UN Special Rapporteur on the Right to Food, De Schutter, who, since his

appointment in 2008, has been a constant promoter of the systemic links between agroecological food production systems and the right to food.

System Change Strategies and Rights

The basic premise of the food system interventions in Belo Horizonte involves making food a basic right by providing many ways to access food and by promoting food-based livelihoods, confronting some of the limits of the commodification of food by providing some level of food security as a common benefit. By integrating key aspects of food production chains (small-scale rural production livelihoods, rural-urban linkages, food distribution, preparation, and service, both direct and through institutions), this model echoes the aspirations of the Food Security Continuum in strategically using responses to food security needs, charity impulses, and politicized rights discourses to effect systems change across a range of scales.

The much analyzed negotiation between participatory decision making in these examples and the determination to legitimize rights to food regardless of demonstrated worthiness addresses some of the limitations Heldke notes in her critique of rights-based as well as charity paradigms (2009, pp. 219–220). Robust trends suggest that popular attention will continue to focus on food price volatility, projected production shortfalls, food aid, land grabs, and the political economy of who controls the scale and scope of food provisioning and the policy that governs it. Both in wealthy countries, where the control of food has been extensively protected from market forces by policy and cultural norms, and also in poorer countries that have been subject to dramatic price fluctuations and labor regime shifts of contemporary food market regimes, individuals and societies struggle to come to terms with neoliberal efforts to continue to transform collective rights into individual rights and also to face the ramifications of opening to market dynamics the control of food (McMichael 2011). Alternative agri-food scholars point out tensions involved in rhetorics of free trade by nations with protected food economies, as well as in the significant

emergence and institutionalization of support for common moral economies that value food security in a range of ways beyond their economic value as commodities (Thompson 1971; Cullather 2010; Hinrichs 2013).

Conclusion: Moral Economies and Ecologies of Food Abundance and Scarcity

As a concept, food security potentially helps denaturalize hunger as inevitable by highlighting the social and spatial organizations that can promote or prevent food security. The concept can also be used to empower and illuminate alternative modes of social organization that help to maintain food security even in situations of scarcity (Thompson 1971; DeRose et al. 1998; Cullather 2010). A systemic approach to food security requires looking beyond food procurement to consider the food system holistically, in order to enact “sustainable community food production, processing, and availability” (Hamm and Bellows 2003, p. 42).

Various conceptualizations have been proposed to guide systemic thinking about the food system and to provide a pathway for change. Since the 1990s, food sovereignty, defined as “the RIGHT of peoples, countries, and state unions to define their agricultural and food policy without the ‘dumping’ of agricultural commodities into foreign countries” (Schanbacher 2010, p. 54), has emerged as a powerful conceptualization to counter the dominance of limited, economic, and paternalistic understandings of food security at the global scale. The growing global movement for food sovereignty prioritizes the values of sustainability; attention to social and power relations between producers and consumers, particularly at local and regional scales; and the rights of small-scale and indigenous farmers and peasants, especially to access productive resources. The focus on rights and entitlements differentiates food sovereignty from even the most progressive articulations of food security (and food justice), which focus centrally on

ensuring food access. In fact, food sovereignty was articulated, in part, as a critique of dominant narratives of food security, especially those utilized by the World Bank and other international institutions.

Some of its proponents have argued that food sovereignty promises a more radical conceptualization in framing food system change and therefore holds the greatest potential in unifying movements and achieving systemic changes to the food system. Systemic approaches toward food security (Hamm and Bellows 2003) are not incompatible with food sovereignty, suggesting that both could be used in a complementary manner as they articulate with systemic contexts, especially as agroecological methods are gaining respect as legitimate (if not always profitable or large scale) means for successfully ensuring global food security (see also the International Assessment of Agricultural Knowledge, Science, and Technology for Development).

Summary

This exploration of food security briefly touches on the genealogy of the term's significant usage, as well as some of the tensions around food security in agri-food practice and scholarship. It reviews key themes that help illuminate why this term has remained so central to anti-hunger work while not entering public discourse in clear ways. It describes challenges involved in assessing what food security would mean and in securing it. It reviews paradigmatic analyses across a continuum of food security approaches. Finally, in the context of contemporary struggles over the legitimacy of different approaches to food security, commodification of food commons, and the right to food, this entry considers the relationship between the related strategies of food security and food sovereignty.

Scholars have demonstrated that food security has not been a problem of food supply, but of access. Multiple processes contribute to food insecurity, such as commodification of food commons and the dismantling of social institutions that supported food security, as well as social

exclusion, marginalization, and alienation from foodland. Considerable scholarly effort has helped critically support work on food security, encouraging efforts to secure food access to move beyond the provision of emergency rations to address the systemic processes that prevent food security by building capacity through social institutions, understanding the relational processes that confer values to food, and negotiating across the many different cultures represented across any food system.

Cross-References

- [Economy of Agriculture and Food](#)
- [Food Assistance and International Trade](#)
- [Food Security and International Trade](#)
- [Land Acquisitions for Food and Fuel](#)
- [Multifunctionality of Agriculture and International Trade](#)
- [Poverty and Basic Needs](#)
- [Right to Food in International Law](#)

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Food Standards

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Synonyms

Exports; Food safety regulations; Global food system; International trade; Poverty alleviation; Sanitary; phytosanitary standards; Technical regulations

Introduction

Food safety standards are a part of technical regulations categorized as sanitary and phytosanitary (SPS) regulations that principally aim to ensure food safety of consumers and plant and animal health (Josling et al. 2004). Due to their potential adverse effect on international trade, however, the growing attention has recently been paid to food safety standards and other technical regulations as trade has been substantially liberalized through tariff reduction. Inherent difficulty in reaching a desirable policy solution regarding food safety standards lies in the fact that there are various losses and benefits associated with their application. Because food safety standards are designed to achieve the level of safety that is acceptable to the society, reduction or elimination of food safety standards to advance trade liberalization could conflict with this social objective. On the other hand, producers, particularly those in developing countries, may suffer from the additional production costs due to their compliance with food safety standards that are normally more stringent in developed country markets.

A quantitative assessment of the losses and benefits associated with various food safety standards would assist policy makers to determine appropriate levels of regulation. This justifies coordinated effort between social and natural science because food safety standards, economic outcomes, and consumer's safety are closely interconnected. Effort to synthesize the findings in the related academic fields such as economics, and food and biological science, would considerably benefit policy decisions.

This entry attempts to provide an integrated picture in regard to the economic and scientific aspects of food safety standards by drawing on studies on health risks of regulated chemical and microbiological elements and the impact of food safety standards on trade and producer's performance.

The subsequent section provides definitions and background for food safety standards. Section “[The Economic Analyses of Food Safety Standards on International Trade](#)” discusses the

economic impact of food safety standards on trade and producer's performance. Section "[Health Consequences of Food Safety Standards and Consumer's Perception](#)" discusses the impact of food safety standards (or food safety risks) on human health and the consumer's perception of foods safety risks. Section "[Summary](#)" summarizes the discussion and provides policy recommendations.

Food Safety Standards and Their Role

Food safety generally refers to the contents of various chemical and microbiological elements in food (Burlingame and Pineiro 2007). Food safety standards may be categorized into product standards that specify set of safety characteristics and their bounds of the food in the final form and process standards that define how the food should be produced. Product standards are applied typically in the form of numerical standards such as maximum residue limits. Process standards are sometimes more efficient than product standards in reducing food safety risks as appropriate production process can reduce incidence of contamination to microbial elements (Josling et al. 2004). Food safety standards also correct the information asymmetries about product attributes associated with food safety between producers and consumers as consumers are often not fully informed about product attributes.

The World Trade Organization (WTO) Agreements on SPS and technical barriers to trade (TBT) established in 1995 make sure that the member countries set technical regulations in line with the international standards, thereby preventing the technical regulations of member countries from constituting nontariff barriers (NTB) to trade. Major international standard setting bodies include the joint Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Codex Alimentarius Commission (Codex) for food safety and plant health and the World Organization for Animal Health (OIE) for food safety and animal health. The SPS and TBT agreements recognize the importance of food

safety standards as effective regulatory instruments to protect food-related safety, but require the regulating countries to submit scientific evidence to justify the regulations if they are more stringent than the international standards where exist.

The Economic Analyses of Food Safety Standards on International Trade

The Country-Level Evidence of the Effect of Food Safety Standards

Trade impact of food safety standards is one of the essential pieces of information for policy decisions. Since the stringency of food safety standards tends to be positively correlated with the stage of economic development as shown in Wilson and Otsuki (2003), developing countries tend to have difficulties in exporting to developed countries. Moreover, high dependency of developing country's income and employment on food production implies the high potential loss in food export from developing countries when they are required to comply with the level of food safety standards of developed countries. If trade loss is small, then stringent standards may be permitted. If trade loss is large enough, however, the levels of standards should be set with a particular care.

Otsuki et al. (2001a) analyzed the effect of the EU aflatoxin standards on imports of groundnuts from 15 major groundnut-exporting African countries. The aim of the study was to investigate the impact of the European Union's harmonization of maximum aflatoxin limit in imported foodstuffs in 2002. The limit was set at a very stringent level compared to the Codex's international standard, and it triggered serious concerns among exporters of food products. For example, a representative of the Gambia claimed that "the proposed standard would effectively restrict entry of the Gambia's groundnuts and essentially the groundnuts from producer countries in the European world to the EU" (World Trade Organization 1998). Otsuki et al. (2001a) aimed to examine whether a tightened food safety standard really reduced groundnut export from developing countries. Otsuki et al. (2001b) found the

trade-restricting effect holds for an expanded set of product – cereals, dried fruits, and nuts – in the same set of importing and exporting countries.

Xiong and Beghin (2012) reexamined the analysis of Otsuki et al. (2001a) by a theory-oriented gravity model. This study reported an insignificant net effect of EU aflatoxin standards on African groundnut exports. Importantly, their model allowed to decompose the supply and demand effects of standards, thereby accounting for the result as an interaction of these two effects; a demand-enhancing and trade-cost effects of standards may have been cancelled. Standards may attract demand by enhancing transmission of information on product characteristics and improving product safety and quality whereas constraining export supply by increasing compliance costs. Xiong and Beghin (2013) also reported similar results regarding the counteracting demand and supply effects of food safety standards for animal and plant products as a whole.

Wilson et al. (2003) found a negative effect of residue limit standards on tetracycline, as an antibiotic veterinary drug, on beef exports from the major beef-exporting countries. Wilson and Otsuki (2003) also found a negative effect of residue limit standards on chlorpyrifos, as a pesticide, on banana exports from the major banana-exporting countries. Anders and Caswell (2009) studied the impact of US HACCP standards on food trade from the top 37 suppliers of seafood using the standard gravity model. They found HACCP impeded exports from developing country exporters, but trade promoting for developed countries.

Disdier et al. (2008) examined the effect of TBT and SPS on agricultural and food imports from the OECD countries. They also compared the effect of a 1 % increase in the tariff equivalent of SPS/TBT on trade value between the cases of developing and OECD countries as exporters and found that tightening of SPS/TBT could lead to a moderate decrease (0.14 %) in trade.

Drogué and DeMaria (2012) studied the impact of pesticide residue limits of importing countries on apple and pear exports worldwide. They found that the more similar are the

regulations of importing and exporting countries, the greater the trade flows. Chile, South Africa, and Brazil (although insignificant) follow this pattern (trade promoting). Winchester et al. (2012) estimated the impact of pesticide residue standards on all plant products and found that the heterogeneity of the regulations can deter the trade of both developing and developed countries. Winchester et al. (2012) analyze the effect of bilaterally differing food safety standards on trade of all plant products.

The Microlevel Evidence of the Impact of Food Safety Standards

Capacity constraints that producers face in complying with food safety standards, typically in developed countries, may be significant as several case studies have descriptively demonstrated (see, e.g., Wilson and Abiola (2003) and Aloui and Kenny (2005)). Among quantitative analyses, Ragasa et al. (2011) investigated the effect of firm's compliance to food safety regulations using the survey data from seafood production firms in the Philippines. They estimated incrimination of production cost due to food safety standards is over 100 %. Maertens and Swinnen (2009) and Maertens et al. (2011) demonstrated that stringent food safety standards on fresh and processed fruits and vegetable in Senegal can rather increase developing country export to developed countries through increased employment of rural poor farmers in the export sector aiming at high-standard market.

The World Bank's TBT Survey Database of 17 developing countries on the firms' response to various technical barriers in their domestic and export markets revealed that for approximately 70 % of the surveyed developing country firms, the cost of testing and certification prevented them from exporting to major developed country markets. The firms tried to comply with the technical requirements by expanding their plant or equipment, redesigning products, and hiring labor for production/testing. The actual total compliance cost is, on average, 4.4 % of the firm's production cost – not prohibitively high, but it still presses down the firm's export. Maskus et al. (2013) quantified the amount of fixed costs

of compliance with various technical regulations and the degree of additional firm-level variable costs due to the technical regulations using the TBT Database. Chen et al. (2008) estimated firm-level export function of intensive and extensive margins using the same database. They identified the factors to promote the amount of export in a firm's total sales (intensive margin) and the number of export markets and products to be exported (extensive margin). Compliance with quality standards is found to increase the export amount as well as the number of export markets and products to be exported. On the contrary, standard certification procedures are found to reduce the number of export markets and products to be exported.

Health Consequences of Food Safety Standards and Consumer's Perception

Hazards and Health Relationship

Scientific research on relationships between an intake of regulated food safety hazards and health consequences is inconclusive in many cases. Based on scientific research, Etzel (2006) described potential effects of mycotoxins on child health, and they vary from vomiting to severe disease such as liver cancer. Sherif et al. (2009) provided a comprehensive survey on the relationship between a mycotoxins intake and child health, particularly in developing countries. They synopsized the major potential adverse health effect as poor growth and development and suppressed immune as well as cancer. However, they noted that risk assessment is complicated and is constrained by lack of data.

Otsuki et al. (2001b) compared the economic gains and loss of human lives from relaxing aflatoxin standards in the EU, based on JECFA is analysis of potential health effect of aflatoxin for two hypothetical levels (10 parts per billion (ppb) and 20 ppb).¹

Otsuki et al. (2001b) calculated the cancer death risks associated with different regulatory scenarios they examined – the new harmonized EU standard (2 ppb) and a Codex standard (9 ppb) in terms of an Aflatoxin B1 equivalent. Approximately 0.2 cancer deaths will be saved each year by tightening total aflatoxin standards by one ppb, if a linear relationship is assumed between cancer death risk and aflatoxin intake. Assuming that 60 % of all aflatoxins are in fact Aflatoxin B1, by adopting the average of the lower (50 ppb) and upper. For groundnuts, other nuts, dried and preserved fruits, and cereals for direct consumption, the difference between the codx and the new EU standards is 7 ppb. Provided that these foods fully account for the aflatoxin intake in the JECFA's scenario, this implies that the EU standard will result in 2.3 less cancer deaths per year than when the baseline level is taken.

This finding does not necessarily weaken the importance of food safety standards, but rather stresses the importance of consideration of both economic gains and effects on human health in setting standards. It also motivates the need for interdisciplinary research that directly combines economic and scientific analysis associated with a specific policy. It is also important that scientific research should update their findings with a more modern and advanced assessment methodologies as well as an increased availability of data to be used for the assessment.

Consumer's Perception of Food Safety Risks

Consumers play an important role in setting food safety standards because consumer's demand for safety would be reflected in actual regulations. Consumer's demand for food safety may be affected by publicly available information on the causality as well as subjective perception of food safety risks. Consumer's demand for food

¹ JECFA estimated that implementing a 10 ppb total aflatoxin standard leads to a risk of 39 cancer deaths per year per billion people, with an uncertainty range between 7 and 164 people. In comparison, a 20 ppb standard yields

a risk of 41 cancers per year per billion people with an uncertainty range between 8 and 173 cancer deaths. This implies that reducing the standard from 20 to 10 ppb in countries where percentage of carriers of hepatitis B1 is around 1 % (e.g., members of the European community) would result in a drop in the population risk of approximately two cancer deaths a year per billion people.

safety does not necessarily reflect the fact that scientific risk assessment has found because of the presence of subjective perception of risks. This subjective perception of risks also involves unknown future risks. Risk aversion of consumers against unknown future risks leads to precautionarity. Therefore, the targeted level of food safety will depend on whether the level should be based purely on the scientific facts or on consumer's perception of risks. This deviation tends to be greater when consumers are not precisely informed of the scientific facts. The health effect of food safety hazards may vary across individuals, locality, and countries (Sherif et al. 2009). Reaction to food safety hazards also may be heterogeneous.

Hypothetical valuation of consumer's willingness to pay for food quality and safety tends to yield a large estimate of price premium due to the so-called hypothetical bias (Caswell and Joseph 2007). This consumer's tendency may at least partly account for the demand for country-level food safety regulations that are far more stringent than the international standards. Furthermore, lack of information on food safety may reduce credibility of safety of imported products. Information on food quality and safety characteristics also plays an important role in affecting consumer's behavior (Caswell and Joseph 2007). In order to avoid excessive demand for food safety, it would be important to provide information on both product characteristics and their effects on human health.

Summary

The studies on the relationship between food safety standards and food trade generally find trade-off between them. However, some of them also find a demand-enhancing effect of tightened standards, implying a potential payoff to the suppliers from complying with the standards. The microlevel studies also suggest the existence of both the trade-cost effects and the demand-enhancing effects. Therefore, it is important to promote compliance of the suppliers to a certain level of food safety standards while avoiding to

impose unnecessarily stringent standards at the same time. Thus, it is important that the international standards are carefully set at the appropriate level which ensures a sufficient level of human, animal, and plant health without causing a significant loss of international trade and profits of suppliers. Such standards should be revised periodically reflecting an improved economic and scientific research. Also, it is important for international standards to cover a broader set of products and food safety hazards.

It is also important to provide consumers with information on food safety and quality characteristics in order for them to make an informed decision by providing information on product characteristics through labeling and information on the scientific fact on the health effects of food safety hazards. Thus, we can avoid departure of the standards based on risk assessment from those demanded by consumers, thereby achieving an efficient function of agricultural and food market.

Cross-References

- [Food Additives and International Trade](#)
- [Food Risks](#)
- [Informed Food choice](#)
- [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Food Waste

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Introduction

Food spoils: for centuries the fight against food decay has been central to the survival of human civilizations. Protected storage facilities, brining, freezing, drying, refrigerating, and more recently canning and adding chemical preservatives: by all means humans have tried, and to a point succeeded, to preserve food and keep it from spoiling. Yet, in the twenty-first century, the world is divided between countries that are still struggling to keep their food reserves safe, where populations struggle with hunger, and countries that overproduce and throw away up to 50 % of their agricultural production and whose populations struggle with overnutrition.

Current research on food waste, while growing, is still in a developing phase. A significant amount of applied research on the subject is targeted to the food industry, with the aim to reduce wastage during the production phases and control for damaging compounds in outgoing waste to limit pollution. In the last 10 years,

different projects and a worldwide round of new surveys helped creating a more detailed picture of how food goes wasted worldwide, but data are still fragmentary and likely to underestimate the size of the problem (FAO 2011; USDA 2009). A larger project on human waste (the WRAP project in GB) is now devoting more interest to food waste in particular; the University of Bologna has a large applied project on food waste reduction (Last Minute Market), but others (the Garbology project) just ended. At the same time numerous grassroots organizations and individual activists are engaging the subject. These last initiatives, as much as the bulk of the institutional programs, are mostly devoted to tackle household waste through educational tools (website, recipes, blogs).

Even if wasting food is occasionally used as a means to show power and wealth, there are also many well-ingrained cultural norms that strongly discourage it. In the nineteenth century, avoiding food waste was still a clear concern even for well-heeled urban households in the industrialized world. Household management manuals from the late 1800s offer suggestions to better manage iceboxes and home storage and recipes to make the most of leftovers (Strasser 1999). Industrialized countries were still fighting hunger in the twentieth century: the Great Depression after WWI, the famine in Europe during and after WWII, and even minimal rationing in the United States in the same period encouraged households to manage their food supply tightly. Governments on both sides of the ocean issued pamphlets and educational materials to help households (or, to be precise, the ladies of the houses) to be thrifty and avoid wasting food. Nowadays the many websites and pamphlets and books devoted to the same goal repeat very similar suggestions, yet household food waste adds up to about 100 Kg per person a year in North America, Europe, and Oceania. In these same countries, food losses throughout the food production chain total about 300 Kg per person each year: about 1/2 of it is discarded before even reaching the processing plants (FAO 2011).

Attitudes surrounding food waste tend to be idiosyncratic: wasting food is generally frowned

upon, yet the intertwined and frequently contradictory moral, economic, social, and institutional pulls that spur wasting make it difficult to estimate what could be an achievable level of waste and how to effectively reach it.

To understand food waste, it is important to look at different factors. The first part of this entry provides an analysis of the food distribution chain aimed at understanding at what stages waste occurs and what are the main causes for it. Subsequently, Boltanski and Thévenot's (2006) work on convention theory helps to highlight the various kinds of solution proposed to deal with food waste at different points of the chain in relation with the different kinds of moral values attached to waste within different polities. Within this framework, the social and environmental impacts of food waste are analyzed, and recent lines of research and public engagement are discussed.

Accounting for Food Waste?

Tons of edible food go wasted, and tons of food scraps head to landfills every day, posing challenges to those who handle them, increasing environmental pollution, and adding costs throughout the food production chain. At the same time, millions of people suffer from hunger: this striking paradox makes the issue of food waste central to the quest for global sustainability.

In a 2010 report, the European Commission (2010, p. 24) defines food waste as raw or cooked food materials that do not reach the final consumer or are discarded without being consumed, at anytime between farm and fork. The US Department of Agriculture (2009, p. 1) distinguishes between "three general types of losses: (1) loss from primary (e.g., farm) to retail weight; (2) loss at the retail level; (3) loss at the consumer level." These definitions connect food waste to the global food production and distribution chain, whose complexity makes the food waste problem daunting. Additional elements further compound the picture, because by wasting food we also deplete other resources. First, water waste and pollution are a crucial side effect of food waste and are present at every level of the food chain

(Lundqvist et al. 2008). Second, as food production is resource intensive, wasting food increases nonfood waste collateral to food production: fertilizer runoff, pollution caused by CAFOs and fish farms, the methane generated by food rotting in landfills, etc. Finally, we should account for a significant energy loss: about 230 trillion BTU a year in the United States alone are used to produce the amount of food that ends up in the landfill (Cuéllar and Webber 2010).

When and Where Is Food Wasted?

Food is wasted differently in different areas of the world: the most striking contrast is due to the fact that the industrialized world wastes little during the processing phases and a lot at the end of the chain (consumption). In less industrialized, developing, and underdeveloped countries, food waste is minimal at the consumption level and high during processing (FAO 2011). In these areas, faulty storage and antiquated processing methods appear to be the most relevant cause of food waste, combined with crumbling infrastructures, improper weather protection, and lack of investments in this sector (Smil 2004). Detailed research on food waste in the nonindustrialized world is still minimal, and while the food distribution chain and the distribution of waste in the industrialized world are better researched, most data available are still rough estimates (FAO 2011).

At each link in the supply chain, there are different elements that contribute to create waste. Exogenous and endogenous aspects affect waste throughout the production phase. Exogenous waste is created by non-preventable events: crop damage caused by weather or pests, animal illnesses, and so on. These are especially significant in the nonindustrialized world, but they can of course occur everywhere: global climate change is expected to exacerbate these issues. Endogenous waste is caused by the way the globalized food distribution system is set up. Interestingly, the amounts of food losses and/or wastage at the production level are not significantly different throughout the world, but the causes for loss and waste are very different.

Industrialized agricultural production is set up for *overproduction* because only the best quality produce will reach the market, and wholesalers and distributors need to have an array of producers ready to deliver at any given time (Stuart 2009). Produce that does not meet the aesthetic standards set up by either the buyers or national and international institutions will not be harvested, or it will be thrown back in the fields after harvest. For example, until 2011 the EU prohibited the sale of irregularly shaped, yet safe to eat, vegetables. Only in few cases soup kitchens and food pantries are able to distribute small parts of this lost harvest. On the distribution front, farmers who are not able to deliver their produce at the time required by the buyer risk not to be able to sell their crop at all, while overproduction in some areas might flood the market making it too expensive for some farmers to even harvest. Current estimates point out that about 50 % of farm production is discarded in industrialized countries before reaching the final consumer (FAO 2011).

Another wasteful sector is the fishing industry: in many cases bycatch fish cannot be brought to shore and is put back in the water even if dead; in the farm animals sector, intensive feeding operations expect a fixed degree of mortality despite the widespread use of antibiotics (Lundqvist et al. 2008; FAO 2011). Transportation is another link of the chain where both external and institutional factors determine waste: the presence of a proper infrastructure reduces waste and facilitates the movement of food. In countries where the infrastructure is poor, even durable food gets wasted in transport, and nondurable foods cannot be shipped at all. Significant amounts of food spoil during transportation in warm areas where refrigeration is not available and packaging is primitive (FAO 2011).

In the production phase, food waste, from peels to carcasses, is costly to dispose of and sometimes dangerous, but food processors have all the incentives to minimize waste. Industrialized meat packing plants, for example, increase the amount of meat that is not detached from the bones: hygienically safe methods to reduce waste have been developed, but – as the 2012 public

outrage against “pink slime” demonstrated – consumers are not necessarily keen to buy the final product.

At the marketing stage, in the industrialized world, the amount of food waste varies greatly with respect to the different categories (canned, frozen, packaged, fresh, dairy, etc.) of food sold. Fresh produce is the most perishable item on the shelves, followed by dairy products. Moreover, for marketing reasons, stores are compelled to keep the shelves overstocked, which promotes waste. Bigger chains as Walmart have developed very efficient ways to manage stocks and move the burden of disposing waste either on producers or consumers: they demand producers to manage their shelf space and keep it stocked and up to date and use price rebates to lure consumers into buying more than they need (Stuart 2009).

Food safety and hygienic standards and predetermined portions affect the amount of food wasted by institutions (schools, hospitals, prisons, etc.), where recycling and reuse of leftovers is impossible, portions are not necessarily geared to the needs of the recipients, and standardized menus leave little possibility of choice. The larger portions that proliferated in the last 15 years in the fast food industry have a similar effect.

Finally, about 30 % of the food households acquire goes wasted in the industrial world (WRAP – Waste & Resources Action Programme 2007; USDA 2009; FAO 2011). The large amount of food waste at this level has multiple causes. First and foremost, as long as food is cheap and provisions are abundant, households do not have huge incentives to waste less. Consumers are also confused by “best-before” and “sell-by” dates, which do not necessarily imply food is not edible after that date, but are frequently perceived as so. USDA (and other agencies) food safety tools for households support this tendency, as they encourage throwing away any food item that looks suspicious. Lack of knowledge on how to cook or reuse leftovers, the presence of kids in the household, lack of organization, and limited time to spend in the kitchen are also likely to increase food waste (WRAP 2007).

The Moral Economies of Food Waste

In a world where millions face hunger, wasting almost half of the food we produce looks ominous: it hurts human decency that people are starving while so much food goes wasted. This striking contrast drives much of the efforts of institution and activists alike, but solutions that only look at making the distribution chain more efficient or try to educate consumers to be thrifter might miss the point. While it is the contemporary presence of hunger and waste that mostly fuels moral calls (the infamous “bread lines knee deep in wheat” of Great Depression memory), reducing waste does not per se affect hunger and, in some cases, might even exacerbate it for people who rely on discarded food for their survival (Stuart 2009).

Boltanski and Thévenot’s (1991) work on justifications outlines several conflicting sets of values (moral worlds) that govern behavior in contemporary western societies. Boltanski and Thévenot outline six “worlds,” governed by distinct values: the Domestic world, the Civic world, the Industrial world, the Market world, the Inspired world, and the world of Fame. By analyzing how worth is attributed in the different contexts, they argue that conflicts arise when certain actions are evaluated according to principles pertaining to different worlds or when the set of values that justifies actions in one world is forced upon actions or things pertaining to another world. In our case, thriftiness would be a Domestic virtue that is frequently emphasized by food waste activists, but it has no value in the world of Fame, where conspicuous consumption is a way to acquire status, and it contradicts the goals and values of the Market world, where increasing consumers’ spending is a crucial goal. This perspective helps in highlighting some of the contradictions that affect food waste management and reduction in the industrialized world.

Conflicting Values Surrounding Food Waste

Value conflicts around food production, consumption, and waste are especially evident in the industrialized countries, as they stem out the

industrial agricultural processes and the commercial practices of the food industry at large. Revisiting the food chain within the framework of convention theory highlights the tensions within the different actors and sets of values governing the various links.

Most of the industrial food production chain is governed by the values of the Industrial world: here the higher common principle is efficiency, and “the ordering of the industrial world is based on the *efficiency* of beings, their *performance*, their *productivity* and the capacity to ensure *normal operations* and to respond usefully to *needs*” (Boltanski and Thévenot 1991, p. 204). The way waste is produced and treated at the production stages of the chain has mostly to do with efficiency and productivity: to stay on the safe side and secure enough production to cover possible exogenous losses, farmers tend to plant more. Quality standards – a measure of value in the Industrial world – influence how much of the crop can reach the market, and safety issues and the timing of subsequent crops discourage or prohibit gleaning. Farmers act in order to maximize their outcome and control costs: when a crop is overabundant, or partly damaged, it is cheaper to let it rot in the field than harvest it.

The processing sector has been so far the most effective and motivated to tackle waste, as at this stage it is difficult to pass it over other links in the chain and the economic advantages of wasting less and increased productivity are evident and valuable in the Industrial context. Upgrades and fine-tuning of the production cycles increase efficiency and lead to significant waste reduction, while repurposing scraps (peels, juices, meat scraps, etc.) as raw materials for pet products or nutraceuticals (Zall 2004) increases productivity and creates additional revenues. Waste management at this stage seems not to be afflicted by conflicting values, and it works well.

An interesting tension is visible at the marketing and distribution levels: appealing to Civic values of solidarity and responsibility, since the 1990s, producers, wholesalers, and retailers have relied on food banks to manage surpluses. By diverting damaged or nearly expired products to food banks and soup kitchens, wholesalers and

retailers do not only reduce their landfill bills but can obtain tax rebates and positive news coverage for free. Food banks are now a highly efficient industry in the United States and are gaining popularity in the EU too. In recent years more agricultural producers are also using this channel to dispose extra production or lesser quality produce. This solution fosters solidarity and provides an outlet for food otherwise destined to the landfill and contemporarily exacerbates the stigma against the poor as it delivers second-class food to those who do not have access to the market. It has been argued that it might also reduce the responsibility of governments in fighting poverty and of the food industry to better deal with systemic food wastage (Poppendieck 1999; Stuart 2009).

Other waste disposal programs appeal to environmental values to propose solutions that transform food scraps from waste to resource: experimental animal feed operations are tapping the restaurant industry and smaller retailers to convert leftovers and wasted food into – mostly – swine food. This practice is well developed in various Asian countries and used worldwide in small farming operations (Westendorf 2008). Biogas production through digesters is another option that is available and frequently used in agricultural setting as a way to dispose waste and produce energy for farms. Some restaurant chains (Baja fresh, Burgerville) are also setting up internal composting/biodigesting programs that collect the food and the recyclable plates and silverware used in their location, as part of environmentally conscious brand programs that exploit environmental values to increase market visibility.

Further contradictions appear at the consumption level: low food prices, large availability of food, and aggressive marketing campaigns do nothing to suggest the need for constraint; producers and distributors thrive on their ability to convince consumers to buy more, as this not only creates profits but also shifts the burden of waste disposal from the distributors to the consumers (Stuart 2009). On the other hand, interventions aimed at curbing consumers' waste are rarely aggressive and rely mostly on educational tools,

whose content did not change significantly since the Great Depression: they make appeals at Domestic values of thriftiness and decorum and Civic values of social responsibility. From the academic perspective, this is the most explored and debated link of the chain. National governments and government-sponsored groups, as well as a number of activists and academics, are studying domestic food waste and suggesting possible solutions consumers can pursue to reduce the amount of food they waste. One common finding is that households do not have a clear perception of how much food they waste, and they tend to underestimate it (WRAP 2007). Proposed solutions are addressed at the Domestic environment and foster decorum, thriftiness, and “household’s arts”: teaching how to use leftovers, storage management, and organizing grocery shopping are typical examples. Education alone, however, rarely changes behaviors when the surrounding infrastructure and the local culture are not conducive to waste reduction. The latest lines of research are looking at how effective the institutional educational projects are in changing consumers’ habits with respect to food waste, and reveal sobering findings. Appeal to Domestic values alone seems to bring little change: structural limitations such as lack of space to devote for separate garbage bins and tight schedules that favor take-out meals trump appeals to better organization, plus the low cost of food itself does not justify the extra effort unless higher orders of values are engaged. Increasing trust in institutions and a strong system of incentives and supporting tools are more effective tools to curb wastage (European Commission [DG ENV – Unit C2] 2010), moving the possible solutions to food wastage more in the realm of Civic engagement.

Finally, one specific group, acting freely outside the boundaries of institutions, seems to follow mostly the values pertaining to the Inspired world. Positioning themselves visibly outside institutional boundaries, freegan activists scavenge supermarkets’ garbage disposal areas to rescue wasted food, and groups such as Food Not Bombs distribute for free food they collect from stores at the end of the day. While some freegans

are moved mainly by necessity, many of them consider themselves activists fighting against the incongruences of capitalist society and present their activism against food waste as a cultural and political choice (Katz 2006; Stuart 2009).

An Institutional Problem

The conundrum surrounding food waste shows clearly in the contradictory policies that affect the food chain. At the beginning of the chain, values from the Industrial world (safety, efficiency, productivity, product quality) justify waste. Similar values promote waste reduction in the processing phases, but waste is justified again by Market values during distribution and marketing. Meanwhile, at the end of the chain, Domestic, Environmental, and Civic values ought to stimulate consumers and municipalities to save money and energy, reduce impacts, and protect the environment.

International governance bodies and national safety standards have powerful influence on food waste. For example, the European Union defines the rules for agricultural production for member states and sets up production quotas. If a state produces more than the quantity allotted, it is supposed to reduce the production, dispose the product, and pay a fine. Fishing regulations not only define how much each state is allowed to land but also notoriously demand bycatch to be discharged. This issue afflicts the fishing industry worldwide, with discard rates of more than 10 % (FAO 2011). Quality and safety standards also affect the agricultural production. For fear of contamination, leaf vegetables grown in fields where inspectors find wildlife tracks get discarded, slightly damaged items are not deemed fit for the market, and institutional and retailers’ quality standards reduce the amount of edible but aesthetically unpleasant fruits and vegetables that reach the shelves (Stuart 2009).

Once products reach the market, a relevant source of confusion and wastage is the dates stamped on perishable items. With the exception of few categories (meats, baby food, ready-to-eat salads), most food is still edible and safe well after the sell-by or best-before dates, but it gets discarded either by retailer or by consumers. The legislation defining the meaning and the

scope of “expiration” dates (best-before, use-by, sell-by, etc.) changes across countries (EU rules are different from US one and so forth), but consumers appear to be universally confused by these standards and tend to discard food after the date stamped on the package is passed or even when it is approaching (Strasser 1999; WRAP 2007; Stuart 2009).

Yet, the same institutions whose regulations foster waste production along the chain are affected by and concerned with overconsumption of energy, water, and fertilizers and the pollution generated by organic waste in landfills and as results of meat and fish processing. In few industrialized countries, landfill management practices have been implemented to harvest or burn methane, yet food still constitutes about 21 % of garbage dumped into landfills in the United States (EPA 2012), increasing the burden on municipalities as landfill costs increase. The methane that leaks out of landfills where organic material is left to rot also increases the environmental burden of food waste.

Rising costs of garbage disposal are driving better post-consumption food waste collections, but they require well-managed composting facilities and separate collection bins for organic waste. Enforcing separate collection proved effective in many EU countries, but southern Europe is still lagging behind, mostly due to lack of proper funding and citizens’ trust in the institutions responsible for managing the waste (European Commission [DG ENV – Unit C2] 2010), while public composting facilities are still rare in the United States where only 3 % of food waste is incinerated or composted (EPA 2012).

Summary

In a world where millions of people are still struggling with hunger, almost ½ of all food caught or produced ends up wasted throughout the production and distribution chain. Food is wasted differently in developing countries compared to the industrialized world. In areas where poverty is endemic and infrastructure rudimentary, most waste occurs in the early links in the chain. Crops are more easily damaged and frequently harvested too

early; rudimentary packaging and lack of refrigeration during transportation contribute to spoiling; lack of sanitation during processing phases further increases waste. In these areas, however, households waste very little.

In the industrialized world, food is wasted mostly at the very beginning and at the very end of the chain. Waste is high in the fields because the system is geared towards overproduction, and quality standards prevent farmers from providing the market with fruit or vegetables that are less than perfect. National and international regulations, constraint imposed by distributors, and price fluctuations also affect the amount of crops harvested. The other point in the chain where waste is significant in the industrialized world is at the consumption level: households waste about 30 % of the food they buy. Wasting food not only has huge impacts on our ability to feed the planet but also causes direct and indirect environmental damage, affects water supplies, and has a high impact on energy consumption.

While the debate around food waste is growing in the western world, most of it is centered on the last link of the chain: the individual consumer. Systemic causes are rarely taken into account, as the consumers are considered to be individually responsible for their (wasteful) behavior. However, current research suggests that institutional factors also have huge impacts. Moreover, the contrasting sets of values characterizing the various links of the food chain foster contrasting attitudes towards waste and make it difficult to evaluate what an acceptable level of waste could be and how to define it.

Cross-References

- [Food Labeling](#)
- [Food Standards](#)
- [Waste and Food](#)

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Food Waste and Consumer Ethics

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Synonyms

Consumption; Environment; Food loss; Justice; Nature

Introduction: Food Losses and Food Waste (Definitions)

The ethical issues related to food losses and food waste are very complex and to a large degree dependent upon at which part in the food supply chain they are identified. In this entry for reasons of clarity and space, the emphasis is placed on food waste occurring at consumer level and mainly on the discussion of the ethical responsibilities that can be said to exist at this stage. This can be justified as the largest percentage of waste occurs at consumer level. It is, however, important to remember that this waste is to varying degrees dependent on other factors such as retail strategies, production limitations, etc.

The definition of food waste is a contentious subject and often developed on a situational basis; definitions of food waste vary in what food waste consists of, how it is produced, at which stage of the food supply chain it originates, and where or what it is discarded from or generated by.

A study by the Swedish Institute for Food and Biotechnology (SIK) on behalf of the Food and Agriculture Organization of the United Nations (FAO), *Global Food Losses and Food Waste*, distinguishes between food losses and food waste (Gustavsson et al. 2011).

Food losses refer to the decrease in edible food mass throughout the part of the supply chain that specifically leads to edible food for human consumption. Thus, food losses take place at production, postharvest, and processing stages in the food supply chain (Parfitt et al. 2010). They are a major factor in developing countries where infrastructures and technologies are poor. Such definition of loss also includes biomass originally meant for human consumption but eventually used for some other purpose, such as fuel or animal feed.

Food waste generally refers to the deliberate discarding of food that is “fit for purpose and perfectly good to eat” (Knight and Davis 2007). This occurs in the latter part of the food chain, in food companies, wholesaling, retailing, and households and is mostly common in developed/wealthy countries.

Smil (2004) also includes overnutrition in the definition of food waste. Overnutrition in this context signifies the gap between the energy value of *consumed* food *per capita* and the energy value of food *needed per capita*. In the European Union, until 2000, food waste was defined by the Directive 75/442/EEC and considered as “any food substance, raw or cooked, which is discarded, or intended or required to be discarded.” This directive was replaced by Directive 2008/98/EC where there is no specific definition of food waste, but just a broad description of “categories of waste.”

Other issues that are closely related to food waste but are typically not discussed as food waste but rather as a question of sustainable use of resources are (excessive) transportation of foods and use of resources as water, arable land, fertilizers, energy, etc.

Attempts have been made over several decades to quantify global food waste, motivated partly by the wish to highlight it in relation to global malnutrition. Such assessments are currently reliant on limited datasets collected across the food supply chain (FSC) at different times and extrapolated to show the larger picture. Each study analyzes food waste in a different way making it difficult to use one study to corroborate another. For instance, one report uses a caloric evaluation of the entire food supply, while another evaluates waste only at the consumer level, combining in-home and out-of-home meals.

The most often quoted estimate is that “as much as half of all food grown is lost or wasted before and after it reaches the consumer” (Lundqvist et al. 2008). More precisely, per capita food wasted by consumers in Europe and North America is estimated to be around 95–115 kg/year, while this figure in sub-Saharan Africa and South/Southeast Asia is only 6–11 kg/year. Such estimates are difficult to scrutinize but highlight the need for greater resource efficiencies in the global FSC.

Food Waste: Estimations and Impacts

A research carried out by Smil provides a global overview of losses and waste that take place

“from field to fork.” On average, only 43 % of the products cultivated for food are actually consumed. Farmers are on a global average able to produce the equivalent of 4,600 kcal/capita/day. In addition to the losses because of inefficiencies in the harvesting, transportation, storage, and processing stages, which cause an initial reduction (600 kcal), the conversion of food production (mainly grains) into food intended for livestock has the most significant impact on the amount of daily kilocalories actually available for human consumption. This conversion causes a further net decrease of 1,200 kcal/capita.

While not really food waste per se, allocating food to animals raises many questions among those studying food security. Another issue along the same lines is the food used for companion animals that are not themselves used for food. Even though food for companion animals often contains e.g. parts of the carcass that is not usually used for human consumption, some resources suitable for human consumption is “lost” in the process. Finally, food retail distribution causes additional waste (equal to 800 kcal), leading to a usable caloric content of just 2,000 kcal (Smil 2004).

Volumes of food waste vary from country to country. In the United States losses at the farm level are about 15–35 %, depending on the industry (Jones 2004). For the fresh vegetable industry, losses are naturally higher at 20–25 %. The retail industry has high rates of waste at about 26 %, while supermarkets, surprisingly, only lose about 1 %. “Overall losses amount to somewhere around USD 90 to USD 100 billion a year” (Jones 2004) and “...households, in the US alone, throw away USD 48.3 billion worth of food each year” (Jones 2006). An average family of four persons in the United States wastes 60 kg of food per month (Martin 2008).

Food losses and wastage are also reported from Europe. According to a recent DG Environment study from the European Commission, the quantity of food discarded in the 27 Member Countries amounts to 89 million tons, or 180 kg per capita per year. Waste at home contributes the most significant percentage: it is equal to 42 % of the total and amounts to about 76 kg/year/person

(60 % of which could be avoided because constituted by edible food). The portion attributed to food processing (39 %) and the portion from catering and restaurant services (14 %) are also quite substantial (European Commission 2010).

On the national stage the level of food waste can be exemplified as follows: In the United Kingdom, Knight and Davis (2007) estimate that "...about five million tonnes of food goes into household waste" and that "...total consumer and industrial food waste reach 17 million tonnes annually." Reports from Sweden suggest that families with small children throw away about 25 % of the food they buy and that total losses and wastage in the food chain are close to 50 % (Kungl. Skogs-och Landbruksakademien 2007). Figures are, however, uncertain. The Dutch Ministry of Agriculture, Nature and Food Quality has estimated that Dutch consumers throw away approximately 8–11 % of food purchased (Parfitt et al. 2010), equating to 43–60 kg. As easily seen these numbers from different nations differ consistently. This is due both to national and regional differences in food culture, living patterns, prices, infrastructure, etc. and also to the lack of common methodologies and definitions.

Regardless of these methodological issues and the scientific uncertainty, it is important to recognize that food waste has significant consequences from a natural resource and environmental perspective.

In terms of food production, agriculture is responsible for a significant amount of total anthropogenic greenhouse gas emissions (GHG). Livestock production alone accounts for about 18 % of total GHG emissions according to conservative estimations (Steinfeld et al. 2006). In addition, there are substantial environmental costs associated with transport, storage, processing, packaging, and improper disposal of discarded food. If discarded food is used for landfills rather than being properly disposed of through, e.g., composting or for biogas production, the organic content will generate gases, including methane, which is a very potent GHG (Knight and Davis 2007). The GHG emissions attributed to food waste are calculated by

dividing by three the total GHG emissions contributed by the food system, which is estimated at 9,800–16,900 MtCO₂e/year (Vermeulen et al. 2012).

Wasting food also means wasting resources like:

- Energy (the calories in wasted food are never consumed, and therefore, the energy that went into growing, processing, packaging, and transporting food to the consumer is lost)
- Water (water losses accumulate as food is wasted before and after it reaches the consumer: calculations estimate that food waste accounts for more than a quarter of total fresh-water consumption globally)
- Land (arable land is used to produce food that is not consumed)
- Labor (the work of farmers to produce food is lost when food is discarded)

Besides environmental impacts, food waste also imposes an economic cost on consumers and retailers. Estimates for Great Britain also show that 30–40 % of the annual production of discarded food has an estimated economic value equivalent to about €18 billion.

Food Waste Along the Supply Chain: Causes and Consequences

Food waste in the food system occurs throughout the supply chain. Food is lost for a variety of reasons at each stage: on farms, during processing, distribution, and storage, in retail stores and food service operations, and in households. As mentioned in the beginning, the loss occurs at different stages in the process in countries in the developing and the industrialized world. However, the significant inefficiency of the food system at different levels has received virtually no attention to date, resulting in a dearth of data that could otherwise illuminate key drivers of the problem or possible solutions (Stuart 2009).

At the farm level, food loss falls into two categories: (1) food that is never harvested and (2) food that is lost between harvest and sale. Produce may not be harvested because of damage

caused by pests, disease, and weather or for economical reasons: if market prices are too low at the time of harvest, growers may leave some crops in the field because they will not have their costs covered after accounting for the costs of labor and transport. Another cause of unharvested produce is food safety scares (e.g., in 2008 a warning was issued by the Food and Drug Administration in the United States of possible salmonella contamination in tomatoes).

Once crops have been harvested, culling is the primary reasons for losses of fresh produce. Culling is the removal of products based on quality or appearance criteria, including specifications for size, color, weight, blemish level, and brix (a measure of sugar content). Quantities vary significantly by product and situation. Processing facilities generate food losses mostly through trimming, when both edible portions (skin, fat, peels, end pieces) and inedible portions (bones, pits) are removed from food. Overproduction, product and packaging damage, and technical malfunctions can also cause processing losses, though these may be difficult to avoid. Proper transport and handling of food are critical throughout the supply chain, particularly with perishable goods that require cold conditions. Inconsistent refrigeration is less of a problem today than in the past, but it still occurs when cooling systems malfunction or human errors cause the cooling chain to break down (Segrè and Gaiani 2011).

Most of the loss in retail operations is in perishables – baked goods, produce, meat, seafood, and, increasingly, ready-made foods. The USDA estimates that supermarkets lose \$15 billion annually in unsold fruits and vegetables alone. Unfortunately, the retail model views waste as a part of doing business. Some of the main drivers for in-store retail losses include overstocked product displays (customers tend to buy more from fully stocked displays); expectation of cosmetic perfection (retailers feel compelled to have only produce of perfect shape, size, and color); inadequate pack sizes; availability of fresh, ready food until closing time; and expired “sell-by” dates (products are discarded when they are near their sell-by dates). Products are also discarded

due to damaged packaging or promotions that have passed (postholiday discards are most common). At the retail and end-consumer stages of the supply chain, perishables make up the majority of food losses due to the high volume of consumption and the food’s tendency to spoil. In terms of total mass, fresh fruits and vegetables account for the largest losses, followed closely by dairy and meat/poultry/fish.

Drivers for household losses include lack of awareness and undervaluing of foods (cheap, available food has created behaviors that do not place high value on utilizing what is purchased), confusion over label dates (label dates on food are generally not regulated and do not indicate food safety), spoilage (food spoils in homes due to improper or suboptimal storage, poor visibility in refrigerators, partially used ingredients, and misjudged food needs), impulse and bulk purchases (store promotions leading to bulk purchases or purchases of unusual products often result in consumers buying foods outside their typical meal planning, which then gets discarded), lack of meal planning and shopping lists, and over-preparation (cooking portions have increased over time and large portions can lead to uneaten leftovers; Parfitt et al. 2010).

Ethical Aspects of Food Waste

Food waste is seen as so obviously ethically wrong that it is seldom spelled out what the ethical issues related to food waste are. There are however many interesting discussions hidden underneath, e.g., people’s gut reaction drawing into question whether food waste is not a necessary price to be paid for the culture of affluence in the Western world that by many are seen as part of the good human life. In this light food waste becomes more a clash of values creating ethical conflicts than a mere accidental and correctable side effect. Further food waste can be understood more as a symptom of deeper problems connected to the relation between humans and nature than just an issue in itself.

In the next paragraphs four areas where food waste raises ethical issues are presented. These

are food waste consequences for humans, food waste consequences for the environment, the relation between consumerism and food waste, and the relation between view of nature and food waste.

Consequences for Humans

Food waste can be considered an unnecessary waste of resources that could have benefited others. Food waste at the consumer level, however, can only seldom directly be utilized for helping people in need. Food thrown away in Western European households can hardly be made useful for those worse off in other places of the world. Indirectly though, a reduction of food waste could benefit those impoverished as the money saved from not wasting food could be directed towards them. Other factors than just a reduction in food waste are required. There is little gain for those in need of food, if the money saved from reducing food waste is directed towards other kinds of consumption such as buying more expensive cars, holidays, furniture, clothes, etc. in private households or building new societal infrastructure such as roads and shopping malls to accommodate a growing consumer society in the Western world. A reduction in food waste thus needs to be followed by other actions intended to benefit other human beings directly.

This raises the ethical question whether those who live in affluence are obligated not to waste food and instead use the saved resources to help others. If the answer to this is yes, the question then becomes: why is this so in the area of food waste, but not in other areas of consumption? Why is food so special that food waste seems self-evidently wrong, whereas the waste of resources connected, for example, to fashion is not debated to the same degree? And to what extent are humans compelled to change their consumption patterns to help those worse off than themselves (Aiken and LaFollette 1996)?

Consequences for the Environment

The production of food has negative environmental consequences. Much has been written on the consequences of different agricultural practices

on the environment especially focusing on animal production. Some of these consequences are detrimental to nature and the environment. Furthermore, if agricultural and animal products are not used for their primary purpose – i.e., to feed humans or animals – but are simply thrown away, this contributes to a waste of resources and a deeper pressure on the ecosystems: desertification; eutrophication; pollution of air, land, and water; depletion of scarce assets such as freshwater and phosphorous; and climate change are just some of the negative consequences that again have effects on humans (FAO 2011). As mentioned before, the problem is not simply solved by reducing food waste. Human beings consume and throw away food and material objects at a high speed. Reducing food waste in itself will not solve the problems, if not seen as part of a larger context focusing on reducing consumption in general.

Food Waste as Overconsumption

As described in the previous sections, there are many and often interwoven reasons for food waste. One that attracts special ethical attention is connected to affluence in Western societies that enables consumers to choose from a multitude of foods when they visit restaurants, canteens, supermarkets, and shops. The choice of the individual entails that all that is not selected risks ending up as food waste. Consumers indirectly pay for these products too as producers, retailers, canteens, etc. simply place the value of the expected waste on the products that are sold. Part of the money paid when shopping thus finance the multitude of choices we have when shopping and the luxury of not wondering what there might be to eat, but rather wondering what we would like to eat.

The question is: is this ethically wrong? Or could it be argued that it is up to consumer self-determination how they choose to spend their money? Obviously consumers are not supposed to spend money in ways that hurt other human beings, but as there are no predetermined restrictions or limits to wasting resources as energy, land, water, etc. as long as consumers are willing to pay for a system that entails food waste, it could

be argued that considering food waste as especially problematic seems arbitrary.

However, reasons for this reaction can be found. It is not that long ago – even in affluent Western societies – that food was sometimes a scarcity and hunger a sensation that most had felt. Throwing away food simply feels morally wrong, as it is such a tangible sign of richness bordering on decadence. While Western people eat whatever they want, they are confronted with news stories from not that far away where hunger is still a part of the everyday lives of nearly 900 million human beings. When dealing with a cultural phenomenon, it is hard not to react at such visible inequality in the world. Food waste thus becomes a symbol of human injustice that hits us right in the face (Edwards and Mercer 2007).

Nature and Food Waste

Another reason why food waste is experienced as ethically problematic is that it can be seen as disrespectful to the organisms, ecosystems, and biosphere that provided the food in the first place. Food is one of the most basic ways humans interact with the more-than-human nature that sustains their lives. Food is in that sense participation in the rhythm of life on the planet where humans constantly stand in a very intimate relation with the world. The strong reaction towards food misuse can thus be interpreted as pointing to deep-seated experiences of human existence as being closely knitted into the beings and rhythms of a nature that is valuable and worthy of respect and love for its own sake, experiences that point towards gratitude and community. Throwing away food is a rejection of this understanding of nature as a relational subject and a reduction of it to an external object with only an instrumental value. Respect for the fruits of the earth and thankfulness towards the abundance of life that surrounds us have found expression both within religion and philosophy. The poet Gary Snyder has expressed it this way: *Every meal is a sacrament* (Snyder 1990). Food waste can thus be interpreted as a kind of “sacrilege.”

The strong reactions towards food waste can thus be understood by the illumination the phenomenon throws on distance between those who

live in poverty and hunger and the ones living in affluence the distance between Western consumers and the more-than-human nature that they are embedded in. Food waste is not just an unfortunate by-product of Western culture, but a market-driven necessity in a culture of affluence. The distance between the way people relate to food in that culture and the way humans have related to food through the most of history is what makes the phenomenon so hard to accept.

Reacting to food waste on a personal level can be difficult as the discarding of food is often an unconscious/non-reasoned act. Following Ajzen's theory of planned behavior, this kind of food waste can thus be seen as an action based on social norms and identity, external conditions, and habits (Ajzen 1991). Wasting food has become in some cases a persistent habit, and as such, it is very often a non-reasoned action and therefore it is not immediately influenced by normative social discussions. Food waste is an integrated part of life in Western consumer societies, and to change this, more than moralizing is needed.

Here raising awareness of the problem and developing a more community-oriented way of thinking of the role of humans in the ecological systems could be seen as a solution. Drawing on different traditions within the broad framework of ethics of nature, spiritual sustainability, ecocentric thinking, etc., we suggest that developing what Goleman has labeled an *ecological intelligence* (Goleman 2009) could be a way to address the issue of food waste as the change in behavior needed is embedded within a cultural context that needs to be changed, if the problem is not to be the problem of the individual consumer fighting a hopeless battle against a culture of affluence.

Summary

The definition of food waste is a contested subject and often developed on a situational basis; definitions of food waste vary in what food waste consists of, how it is produced, at which stage of the food supply chain it originates, and where or what it is discarded from or generated by. Attempts have been made over several

decades to quantify global food waste: such assessments are currently reliant on limited datasets collected across the food supply chain (FSC) at different times and extrapolated to show the larger picture. The most often quoted estimate is that “as much as half of all food grown is lost or wasted before and after it reaches the consumer” (Lundqvist et al. 2008). Food waste has environmental, socioeconomic, and ethical impacts. There are many contributing factors to food waste. Most importantly, it seems to be not just an unfortunate by-product of Western culture, but a market-driven phenomenon in a culture of affluence. It is one of the most visible symbols of the distance between rich and poor and between consumers and the more-than-human lifeworld that they are embedded in and dependent on.

Cross-References

- [Climate Change, Ethics, and Food Production](#)
- [Economy of Agriculture and Food](#)
- [Food and Place](#)
- [Sustainability of Food Production and Consumption](#)

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Food Worlds, Film, and Gender

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Synonyms

Cinema and food; Femininity and food; Masculinity and food; Motion pictures and food; Sex and food

Introduction

Food and film are a recognized subfield in film scholarship (Ferry 2003; Keller 2006; Zimmerman 2010; Bower 2012; Baron et al. 2014), and food and gender are thoroughly explored in women's and gender studies (Allen 1984; Counihan 1999; Bordo 2003; Avakian and Haber 2005; Inness 2011). This entry brings together these two areas by way of the concept of "food worlds." I shall begin with a brief description of the concept "food world," describe existing scholarship on food and gender and on food and film, and then show that most films assume and illustrate gendered food worlds.

I am using the term "food world" to refer to the meanings that food and the activities surrounding food and eating have for a person. Each of us bears particular relationships to eating and food, and these relationships are shaped by our experiences, as well as biologically and culturally influenced likes and dislikes. Our relationships to food have to do with the procuring of food, preparation of food, and, most importantly for my purposes, attitudes to and emotions regarding food and eating. Our food worlds also include how much time we spend thinking about food. They are constituted by our feelings about our bodies and how much time we spend thinking about them. They include how we react to feelings of hunger; how we experience the sensations of fullness and emptiness, that is, the meanings of the physical sensations related to food and eating to us; and how we behave in response to those meanings. Is eating pleasurable? Anxiety producing? Different in different circumstances? One's relationship with food thus involves physical, emotional, and psychological aspects. It is this web of relationships between oneself and food that I call a "food world." We all inhabit food worlds, but our individual food worlds are different. Whether one is sensitive to these differences is also part of one's food world.

One's emotional relationship to food and eating is a significant part of one's food world. Both negative and positive emotions make up that world. Many feel negative emotions, such as "anxiety, guilt, fear, and shame" about "how we

eat, what we eat, and, above all, how much we eat" (Iggers 1996). Most people also feel positive emotions about eating and food. The planning and preparation of food can bring great pleasure, especially when we make food for those we love. Food can comfort, and the sensual pleasures of eating can be intense and fulfilling. Anthropologists have introduced the concept of "foodways" and have analyzed film from the perspective of foodways. Food worlds seem to be a subset of foodways and to focus more on the personal meaning of food than the foodways perspective.

Though each of us has our own food world, there are discernable patterns that link these worlds according to group membership. I am interested in the gendered patterns evident in the food worlds depicted in film. First, I will introduce food and gender and then discuss both of these in relation to film.

Food and Gender

Much has been written about gender and food, especially women and food. Susan Bordo's *Unbearable Weight* is a classic of this genre (2003). As she points out, the history of Western philosophy identifies women with the body more than it does men, and devalues the body in relation to the mind, thereby devaluing women. Women's identification with the body is identification with appetite and desire, which, in this history, threatens reason and rationality. Appetites must be controlled by reason. But, paradoxically, women, considered weak in reason, are culturally gifted with the role of control of appetites. This is very clear in traditional conceptions of heterosexual relationships, where women are supposed to control their sexuality, and that of males, by means of their refusal or acceptance. We also see this in the case of food and hunger. Women are not supposed to express hunger or the desire for sex or food. Their bodies are not supposed to be "excessive," though this seems directly related to heterosexual sexual attractiveness. It is more acceptable for a woman to be overweight if she is "beyond" youth. In Hollywood, everyone is eternally young, and so women are eternally thin.

These norms for women affected by them require constant monitoring of food intake, both the amount of food and the kind of food. Sandra Bartky describes the disciplining of the body required by heterosexual femininity (1990). The constant monitoring of one's body, its appearance, and the relation of this to eating is a part of this discipline. It is part of the heteronormative food world of a woman.

One might think that the "thin woman" obsession is peculiarly Western. It might once have been, but according to Bordo and others, this ideal has spread to much of the rest of the world, with the accompanying eating disorders and food-related behaviors. Bordo blames Western media, arguing that media images teach us how to see bodies. The availability and widespread consumption of Western media, including film, has altered preferred body types in cultures that previously accepted different body types. One oft-cited study showed that prior to the introduction of television to Fiji, there were almost no reports of eating disorders, and many women were substantial; thinness was ridiculed. After 3 years of exposure to *Baywatch*, young women showed eating disorders, and thinness was becoming the dominant body ideal (Becker 2004). The slim body ideal for girls and the muscled body ideal for boys are most influential among higher socioeconomic populations. As developing countries increase the middle classes, body dissatisfaction and eating disorders increase. Though much might be said about gender and food outside the United States, constraints on length require that this entry focus on food, gender, and film in the United States.

What about men and food? As Bordo pointed out in the 2003 edition of her book, body image problems are spreading to men. In fact, the dominant male body ideal, as displayed in magazines, television, and especially action films, is the lean and muscular body Morrison and Halton (2009). Such bodies need fuel to power their actions. In action films, where these bodies are most often displayed, men regard eating as fueling. Men are allowed to be hungry, to be thirsty, and to express and fulfill their desires. Men can eat and drink as much as they want, with not too much concern

about what is eaten. To be hungry, to have appetite, is to be masculine. To act so as to satisfy that hunger is also masculine.

There are exceptions to this, of course. Men are not supposed to be obese, though they may be overweight or out of shape with fewer negative social consequences than women. They may also be competent cooks, but only if they are professional, or semiprofessional. If they show too much interest in cooking and recipes, or are vegetarian or vegan, their masculinity may be questioned.

Food and Film

In bringing film into this analysis, one is faced with an enormous difficulty. It turns out that people hardly ever *eat* in movies. In a content analysis of the ten top-grossing Hollywood films between 1991 and 2000, researchers found that, although food did appear regularly in films, it was not typically the focus of the scene in which it appeared. Furthermore, it was rarely eaten by anyone in the scene. Alcohol was the most commonly appearing food or drink in these films and was much more likely to be ingested by someone than food Bell et al. (2005). But it is the ingestion of food that best shows us the gendered norms of eating behavior and attitudes toward food.

In his account of the genre of "food films," *Food in the Movies*, Steve Zimmerman makes this point. For most of the history of film, food was "ignored or hidden from view..." (Zimmerman 2010). This was in part for practical reasons. In the early days of film, prepared food would have had to sit under very hot lights for shot after shot and would not survive the treatment. But there are also aesthetic reasons for omitting eating from films. Eating ordinary meals makes for slow, uninteresting viewing. The main uses of food in films do not require eating.

One of the main uses of food in film is as a prop, that is, "something that's there while people do other things, like talk about love, family problems or matters more sinister" (Zimmerman 2010). In many films, a meal that is talked about or anticipated never arrives. In other cases, the food arrives, but is never actually

eaten. When one observes a film in which people sit down to a meal at a table – something very common in films – one will see that those at the table may take one bite, but hardly ever two. Most of those at the table eat nothing. As we all know, scenes of meals at tables are not usually about food or eating. They are about other things, such as conflict, relationships, community, or power.

Another common use of food in film is as a “transition (or time-compression) device” (Zimmerman 2010, Introduction). We might see the preparation of a meal, or the beginning of the meal, or the table being set and then the washing up. Another major way that food is used in film is “to enrich the narrative by imparting a deeper sense of meaning to the story that is being told. Often this is accomplished symbolically and metaphorically to call attention to a significant event or a person’s character, lifestyle, class, race or economic status” (Zimmerman 2010, Introduction). For example, in the film *The Upside of Anger* (2005), which contains many kitchen and dining room scenes, a boyfriend of whom the mother disapproves is shown loudly slurping his soup.

Zimmerman’s exhaustive analysis of the use of food and eating in US film does not pay much attention to the gendered portrayal of food and eating. He does point out that, for years, films portrayed food prepared in homes by women, whereas in posh restaurants, it was prepared by men. Though this has changed somewhat, the representation of men and women as professional chefs is quite different. (See below.)

Zimmerman’s analysis of food in film has been challenged by anthropologists using the concept of “foodways.” This concept includes both personal and sociopolitical aspects of food, though the emphasis seems to be on the latter. A book using foodways as an analytical perspective on film claims that the concept “denaturalizes a culture’s norms, values, and beliefs about food products, meal systems, and the procurement, preservation, preparation, presentation, consumption, and cleanup of food” (Baron et al. 2014, Chap. 1). Though this analysis of film does not challenge Zimmerman’s claim that there is little eating in films, it focuses more on the

sociopolitical aspects of food in film and how these reflect the social and economic structure of food generally. Interestingly, the book referenced above does not use gender in its analysis. However, we can make use of the notion that a gendered analysis of food in film denaturalizes gendered norms. The naturalness of the appearance of food scenes that do not call attention to the food, or the eating, allows us to examine them for the gendered norms that make them seem “natural.”

Food, Film, and Gender

What food worlds are represented in film? Here, I shall limit my analysis to US films and primarily to popular Hollywood films. According to popular films, women and men inhabit different food worlds: their pleasures in food, their anxieties about food, their intimate relationships with food, and their control of food differ, revealing the way that food, as so much else, is ruled by heteronormativity. Women rarely eat, though they often prepare food. When they do eat, they typically eat tiny amounts of low-fat or low-carb foods, often commenting on their eating. They do not, usually, seem to take pleasure in eating. This kind of eating is called “restrained eating” in medical scholarship. “Restrained eating refers to a persistent pattern of eating-related cognitions and behaviours in order to reduce or to maintain body weight” (Macht 2008, p. 2). It appears that, generally, women in film are restrained eaters, with all that that implies about their food worlds. Of course, there are exceptions, but such women are defeminized or represented as psychologically unstable. For example, the independent film *Disfigured* portrays an anorectic woman and an overweight woman, both of whom are psychologically troubled (2008).

The restraint of women eaters, especially at restaurants, is often remarked on negatively in comedies. One example of this is in the hit US film *Shallow Hal* (2001). The film stars Jack Black, a popular lead in Hollywood comedies. Black’s body does not correspond to the typical Hollywood male romantic lead, though the range of such bodies is broader than for female stars. He is shorter than most, and stockier. He is not lean

and muscled. In this film, he and a friend, played by actor Jason Alexander, who is also short and stocky, are hypercritical of the bodies of the women they are interested in. This is supposed to be amusing, since they are not supposed to be such prizes themselves, but their hypercriticism mirrors the way that many women evaluate their own bodies and the bodies of other women.

Hal meets a positive-thinking guru in an elevator, and the man puts a spell on him that makes him see the “inner beauty” of people. He is promised that the women he likes and finds attractive will also like him. What follows is supposed to be a critique of “lookism” and a hypercritical attitude to the appearance of women. Hal is shown dancing with beautiful, model-thin women. When we are shown the women from his friend’s perspective – the non-magical perspective – we see that they do not meet his hypercritical requirements for female beauty. He meets a woman named Rosemary Shanahan, played by Gwyneth Paltrow, and they begin to date. At a restaurant, Rosemary orders a cheeseburger, chili fries with cheese, and a milkshake. And then we hear a variation on one of the most common lines in films about women ordering in restaurants:

Hal: It’s nice to see a girl order a real meal. I can’t stand it when you guys order a glass of water and a crouton. It ruins the whole point of going out.

When we see Rosemary from an “objective” perspective, she is very overweight. One of the most offensive parts of the film is when Rosemary, who, remember, has “inner beauty” – she has been in the Peace Corps – takes Hal to a hospital where she volunteers with children. He sees the children as healthy and whole. He treats them as such and they have a great time. Eventually, the spell is removed, and Hal sees Rosemary’s body as it really is. He agrees to marry her anyway and go with her into the Peace Corps.

If the film is a critique of “lookism,” it undermines itself by portraying the people that Hal sees as beautiful, perfect, and healthy as “normal,” while their true appearance is contrasted as not conventionally beautiful and certainly not

perfect. This happens with the women he dances with and then when he returns to the children’s ward of the hospital and sees the injuries and effects of illness on the children. He is shocked and put off. It is also offensive in that it splits women into two groups: pretty, or not pretty, but funny, smart, and nice. So women can only be unattractive, good people, or attractive, bad people. Never is there any suggestion that Hal might not have a “normal” male body.

According to content analysis studies of films that earned more than \$250 million outside the United States between 1990 and 2007, the most common scenes of men and food involve men using eating or drinking to “share news or information or make plans” (Parasecoli 2009, p. 141). Very commonly, a woman is serving the food or drink. Men do not spend much time worrying about the type of food they eat, or its quality. Of course, these are men of action, not gourmands. But they represent the common heteromascularity seen and imitated around the world. This is the food world of ordinary guys and of lean, muscular men of action.

Both men and women are portrayed as chefs or bakers in films. However, the ways in which they are portrayed are quite different. In *Mostly Martha* (2001) and its US remake, *No Reservations*, a female chef in a restaurant is a perfectionist, obsessive about controlling her kitchen and the food she creates. Her boss requires her to go to an analyst because of her reactions to restaurant patrons who send their food back to the kitchen. She is “fixed,” not by the analyst, but by inheriting her sister’s child and by working with a male chef who is more emotional and sensual and eventually works his way into her life. Once she has sex, has a man, and has a child, she is a better cook and a better person. In other words, she is “feminized.” Interestingly, in the German version of this film, the male chef is Italian, making use of stereotypical conceptions of the Latin lover and the sensuality of Italian cooking as opposed to French or German nouvelle cuisine. In films, women who cook professionally are masculinized and unstable; they must be brought into the heteronormative fold to become “normal.”

A number of films about women who make food professionally involve the presence of magic in their food. They change other people's lives, always by infusing love, passion, and emotion. They do not seem to be able to do the same for themselves. Their fulfillment is in helping others. Examples include *The Mistress of Spices* (2005), *Chocolat* (2000), *Woman on Top* (2000), *The Recipe* (2010), *Like Water for Chocolate* (1992), and *Simply Irresistible* (1999).

Male chefs who are uninspired or otherwise lacking are often made whole by a return to their ethnic roots. For example, in *Today's Special* (2009), Samir is a classically trained chef whose food lacks inspiration, passion. It is "correct." To get the passion he lacks, he returns to his father's Indian restaurant, where an itinerant Indian immigrant taxi driver, who used to be a chef in Mumbai (among other things), provides Samir what he needs to find his inspiration in a combination of French and Indian food. In a man's case, it is a return to the ethnic family roots that gives him back the passion he needs to make truly inspired food.

When men are the makers of food, their ethnicity is often emphasized. Ang Lee's *Eat, Drink, Man, Woman* (1994) and the US remake, *Tortilla Soup* (2001), feature families without mothers and fathers who are professional chefs. In both films, the fathers are losing their sense of taste, even as they continue to prepare huge, complex meals of their respective ethnic traditions for their daughters. The fathers use their elaborate meals to try to hold on to their daughters, who are adults and are moving away, into their own lives. The loss of the sense of taste is a symbol of loss of self. The fathers are confused, losing the lives they have lived, unsure of how to move to the next stage of life, how to renegotiate their relationships with their daughters and others.

Interestingly, it is when a daughter takes up the father's expertise and cooks for her father that the men regain their sense of taste – like magic. So, once again, women are sensually connected with food. As in the films mentioned above, they imbue their creations with love, which acts on the loved ones to return sensuality and enjoyment – pleasure in the senses or joy itself.

According to popular films, women stop being reticent eaters only when they know they are going to die. Queen Latifah, as Georgia in *Last Holiday* (2006), makes exquisite meals following TV food programs, but only eats Lean Cuisine meals. She gives away the food she makes. She is also pleasure denying to herself in other ways. In the film, Georgia receives a diagnosis giving her just a few weeks to live. She takes all of her money and goes to a hotel in the mountains in Europe where one of her favorite chefs heads the kitchen. At dinner the first night, we see guests ordering food, but asking that certain ingredients be omitted. For example, one guest, a woman, asks whether they can make "the risotto without the dairy." As he receives these orders, the chef throws a fit, as people want his dishes with no fat, no this, no that. Georgia, however, orders everything on the menu just as it is described, and the chef is so delighted that he comes to meet her. She continues to eat rich, beautiful food, but only because she believes she is going to die. Her changed attitude toward the pleasures of eating is not resolved at the end of the film, when she learns that the diagnosis was incorrect, and she will not die any time soon.

In *Seeking a Friend for the End of the World* (2012), earthlings have just learned that the last attempt to save the earth from an asteroid has failed and that everyone will die in 2 weeks. At a dinner party, guests are asked how they will spend the remaining days of their lives. A single woman – portrayed as silly and vapid – says that one of the things she will do is "eat whatever I want, and not even care." This speaks volumes about her food world and that of many other women.

The gendered norms regarding food are largely true of norms about sex in film. In mainstream films, women are not supposed to desire sex, or to exhibit that desire, except under certain very specific conditions. Interestingly, when women eat like men and approach sex as men do, they are masculinized, and the two – food and sex – usually go together. In *La Femme Nikita* (1990) and its US remake, *Point of No Return* (1993), Nikita, a killer who is offered her freedom if she agrees to become an assassin for the

government, eats heartily, stuffing her face, shocking the man invited to share her meal. The meal is followed by an aggressive sexual overture, another sign of her masculinity. The man says that he is used to making the invitation, but goes along. The effect is to feminize him and masculinize her. She is, after all, a trained assassin. In her training to be an agent, she has been explicitly schooled in femininity, in the French film by Jeanne Moreau. Part of that training is learning how to eat – in public.

The close relationship between women's repression of appetites generally – eating and sex in particular – is evident in film portrayals of female vampires. They become masculine in their appetites. They feed voraciously, and they are sexually aggressive as well. Male vampires are also, but their predatory behavior, both sexual and food related, is not of a different kind from their ordinary masculine behavior, though many vampires are depicted as bisexual, which, for some, threatens their masculinity. Vampire women feed and feed, have sex with everyone, and never get fat or pregnant. They are not restrained eaters.

Summary

Though there is not much eating in films, what eating there is and the role of food in films reflect gendered food worlds. The identification of women with the body and appetites, and the responsibility of women to control those appetites, both for themselves and for men, is commonly portrayed in films. Women in films are “restrained eaters.” When they are not, they are depicted as masculinized and often as psychologically unstable. Women may cease to be restrained eaters when death is near. Men, on the other hand, eat whatever is available and eat as much as they want. The heterosexual food world for men in Hollywood films is one where eating is necessary, like refueling, but not worth much thought. Men are rarely the preparers or providers of the food they eat.

When men do think about food, they are either professional chefs or not heterosexual.

Rock Hudson's famous scene with Doris Day in *Pillow Talk* is a classic example of the latter. He is trying to make her uninterested in him, so he starts acting “gay;” one of the ways in which he does this is to show excessive interest in a recipe for a dip. Even today, in films, such codes are used, often still for comic effect.

Films in which men and women are chefs differ significantly. Women who are singularly focused on their craft are portrayed as masculine and as therefore abnormal. They must be re-feminized by male lovers, children, or nurturing. Male chefs are not feminized by their cooking, because being a chef is a traditionally masculine role. When male chefs lack passion in their craft, they get inspiration not from romantic love, but by returning to their ethnicity, often by way of their fathers, or by passing on their profession to their child, acting as the *pater familias*.

The relationships between eating, types of food, relationships to food, and gender in the movies reflect those of cultures at large. In film, as in life, food worlds are gendered.

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Food, Agriculture, and Trade Organizations

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Synonyms

Trade associations; Trade institutions; Trade groups

Introduction

Trade organizations establish and enforce the rules of trade. The exemplary example of such an organization is the World Trade Organization (WTO). Established in 1995, the WTO marked the first time that an international organization had the legal mandate to regulate trade between nations, a role previously under the purview of individual nations. The objective of the WTO is to replace national trade rules, such as tariffs and quotas, and prohibit nontariff trade barriers, such as technical barriers or rules of origin, with a single institutional framework designed to allow trade to flow “as smoothly, predictably, and freely as possible” (World Trade Organization 2013). Changes wrought by the WTO led to the deepening of market relations globally, including the expansion of global value chains (GVC), where production is integrated from start to finish (Busch and Bain 2004; Bair 2009). Here, large-scale corporations, such as a Walmart, source a significant proportion of their product from thousands of different suppliers around the globe. The development of the WTO and GVC has had two significant effects on trade: first, it has led to a massive expansion in global trade in food and agricultural products, and second, corporations themselves have emerged as important trade organizations, establishing and enforcing rules to regulate the trade within their value chains.

The shift in global rule setting and the concomitant expansion in global trade gave rise to a number of ethical concerns. In particular, the WTO and large-scale corporations became the target of antiglobalization critics who argued that these organizations favor enforceable rules that encourage global market expansion, while rules that promote social goals, such as human rights, environmental sustainability, and labor standards, were largely absent (Ruggie 2003). Critics argued that as a result, inequality and injustice both within and between countries is exacerbated due to the combined effects of, first, market integration globally that constrains the ability of nation-states to function and to regulate trade and, second, the growing dominance of organizations, such as the WTO, that advocate economic rather than social objectives (Little 2003). In other words, liberalized trade rules facilitated the mobility of capital and goods, but equivalent rules that could adequately regulate the negative consequences of international trade were absent (Clapp and Fuchs 2009).

Within this context, many nongovernmental organizations (NGOs) concluded that traditional campaigns for social, economic, and environmental justice and equity were no longer effective. Recognizing the weakened role of the nation-state in policing international trade, many NGOs turned their attention instead to try and change the practices and policies of those actors they held responsible: corporations (Ruggie 2003). Through campaigns for corporate social responsibility (CSR), the goal of NGOs was to compel individual companies to integrate rules and policies into their production and trading practices that would address social, economic, and environmental concerns. This strategy has proved remarkably successful at encouraging corporations to do so.

A useful concept for considering the ethical issues involved in global trade is governance. In contrast to government (legislative, executive, judicial)-centered analyses of regulation, scholars are increasingly interested in emphasizing transnational governance structures (Gary Gereffi 2005). Scholars use the concept of governance to investigate the multiple actors, sites, and forms of governing that regulate the global agrifood sector

(Higgins and Lawrence 2005, p. 13) and to consider its social, political, and ethical implications. Scholars who utilize this concept are particularly interested in considering how the regulatory boundaries between the state, market, and civil society have blurred and to analyze the development and role of novel actors and contexts through which governing occurs (such as global value chains, business and industry associations, or multi-stakeholder-led initiatives (MSIs)) (Higgins and Lawrence 2005; Smith and Mahutga 2009).

Governance structures and practices within global agrifood chains create a division of labor that effects how resources, as well as costs, risks, and rewards, are distributed among actors (Ponte and Gibbon 2005). From an ethical standpoint, therefore, a focus on governance is useful for understanding relationships of power and inequality within the agrifood sector including the distributional effects of global value chains (Ransom 2007; Bain 2010b; Prieto-Carrón and Larner 2010) and for helping to reveal the social relations bound up in the production of commodities (Guthman 2009). To accomplish this, governance scholars focus analytical attention on how actors and organizations use their power and authority to shape this division of labor within value chains as well as the tools, techniques, and activities, such as standards and audits, that they use to influence and coordinate the production, exchange, and consumption of food and agricultural products (Higgins and Larner 2010; Tallontire et al. 2011).

This entry examines two new nongovernmental organizational forms that have emerged to regulate trade and which explicitly seek to embody rules to advance socially responsible and ethical trade. The first example is the food retailer initiative, GLOBALG.A.P., and the second example is that of multi-stakeholder-led initiatives (MSIs) or “roundtables.” I discuss governance efforts by these organizations to develop standards and auditing systems that incorporate rules to address the social, economic, and environmental performance of corporations within the global marketplace. The entry then outlines some of the major ethical concerns that have emerged from these developments.

Historical Development of Trade Organizations

After World War II, international trade in food and agricultural products was limited by national tariffs, quotas, and a host of nontariff trade barriers, such as sanitary and phytosanitary measures, designed to protect domestic industries and agricultural sectors. The WTO's mandate was to devise rules for international trade that would facilitate global trade by reducing and even eliminating trade barriers. The WTO has international legal status with enforcement powers similar to the United Nations (UN), and its rules are binding on member states. Initially, the goal was to reduce and phase out tariffs and quotas. However, as states began to recognize that a proliferation in nontariff trade barriers could threaten the system, attention was turned to developing a series of subsidiary agreements. These agreements restrict the use of nontariff trade barriers through the establishment of consistent, harmonized, and transparent standards based on scientific principles and evidence, which are enforceable (Busch and Bain 2004). For example, the Sanitary and Phytosanitary (SPS) agreement established rules for meeting standards for food safety and animal and plant health that do not function as a trade barrier. To ensure that standards do not act as a trade barrier, the WTO expects individual countries to base their standards on those established by the Codex Alimentarius Commission (Codex), the World Organization for Animal Health (OIE), and the Secretariat of the International Plant Protection Convention (IPPC).

The liberalization of global rules on trade had a profound effect on market relations globally. Of particular significance was the expansion of global commodity or value chains. Rather than international, business-to-business, or the use of spot markets, trade is increasingly organized through value chains where production is integrated from start to finish at a regional or even global scale (Bair 2009). Scholars involved in global value chain analysis (GVCA) emphasize the importance of global buyers, especially retailers and brand-name companies, as key

organizations in the formation and regulation of global production, trade, and marketing (Gereffi et al. 1994; Bair 2009). These scholars argue that GVC are increasingly “buyer driven” rather than “producer driven.” In buyer-driven value chains, lead firms, such as retailers, play a central role in making and enforcing decisions about practices and structures in the global economy, even though they do not own any of the production or manufacturing facilities themselves.

Today, for example, large-scale retailers, such as Walmart or Tesco, directly source a significant proportion of their product especially fruits and vegetables from thousands of different suppliers around the globe. To ensure consistent quality (e.g., food safety) and quantity (year-round supply) of product within their value chain, retailers are directly engaged with governing their value chains, especially through the use of standards and third-party certification, thereby shaping the conditions under which food and agricultural products are produced and traded globally.

Corporate Social Responsibility

Concerns regarding the ethics of corporate behavior are especially pertinent within the agrifood sector since the sector arguably represents the convergence of human rights, animal rights, and community and environmental issues more than any sector. As supermarkets have globalized, their supply chains have become increasingly complex while at the same time demands by stakeholder communities have become more challenging to meet. This sector has to deal with concerns not only about food safety but also regarding environmental hazards, genetically modified organisms, the use of pesticides, child and forced labor, health and welfare issues related to agricultural laborers, and animal welfare (Barrientos and Dolan 2006).

NGOs have questioned the social and environmental impacts of global food production in a context where the capacity of individual nation-states to regulate trade as well as to govern public goods, such as food safety or worker welfare, within this trade has diminished (Barrientos

and Dolan 2006, p. 4). Instead, many NGOs have turned their attention to campaigns for CSR with the goal of advancing their social, ethical, and environmental objectives by compelling individual companies to change their production and trade practices wherever they happen to operate within the global marketplace. Today, the dominant philosophical belief is that in the era of globalization, it is the corporate sector that has “the global reach and capacity” as well as the “ability to make and implement decisions at a pace that neither government nor intergovernmental agencies can possibly match” (Ruggie 2003, p. 107).

It is important to note that there is no single, coherent definition of CSR and the vagueness of the concept has allowed it to be interpreted and adopted by different actors for different purposes (Blowfield and George 2005). Blowfield and George (2005, p. 503) argue that it is better to think of CSR as a concept that incorporates a range of theories and practice, which all recognize the following:

(a) that companies have a responsibility for their impact on society and the natural environment, sometimes beyond legal compliance and the liability of individuals; (b) that companies have a responsibility for the behaviour of others with whom they do business (e.g. within supply chains); and (c) that business needs to manage its relationship with wider society, whether for reasons of commercial viability or to add value to society.

Nor are NGO campaigns for CSR homogeneous. Rather, the strategies and goals tend to reflect the particular ideological perspective of the organization involved.

One of the most effective approaches early on was to publicly shame and stigmatize corporations into changing their behavior by publicizing cases of malpractice within their supply chains. These early campaigns were inspired by a number of high-profile social and environmental catastrophes in the mid-1990s including the toxic leak at a Union Carbide pesticide factory in Bhopal, India; the *Exxon Valdez* oil spill in Alaska; Shell Oil operations in Nigeria; the spread of genetically modified (GM) food and agricultural crops; continued tropical deforestation; and exposés of

sweatshop labor by major branded corporations, such as Nike and Gap (Utting 2005). Working on the idea that “high-profile brand-name corporations can run but they cannot hide” (Utting 2005, p. 380), these campaigns target highly visible, reputation-sensitive, corporate brands at the retail end of the supply chain, those with direct links to consumers. By focusing on brand names with high visibility or symbolic value, such as McDonalds, Starbucks, or Walmart, campaigns are more likely to attract media interest and resonate with the wider public (Bendell 2005; O’Rourke 2005). Below, I discuss two examples of CSR.

Business-Sector-Led Initiatives

Food retailing has become increasingly concentrated, resulting in a handful of major supermarkets in Western Europe, the UK, and the USA, wielding enormous power and influence in determining how food is produced, traded, and consumed (Campbell et al. 2006; Lawrence and Burch 2007; Vorley 2007). Ironically, the reliance by these retailers on centralized procurement systems has increased their vulnerability to activist and media campaigns spotlighting unethical practices within their global value chains (Barrientos and Dolan 2006; Konefal et al. 2007). Food retailers have found that their valuable brands can be severely damaged if they are linked with unethical practices, such as child labor, destructive environmental practices, or genetically modified organisms. Furthermore, public concerns about the ethics or safety of the food system – whether real or perceived – have the potential to negatively affect the entire industry, not just the firm or producers responsible. Ignoring social and environmental problems, and failure to demonstrate due diligence in finding or preventing such problems, can pose considerable reputational and financial risks not simply to an individual retailer but the industry as a whole.

To address this, retailers seek to control their global supply chains by incorporating requirements for CSR that suppliers are obliged to meet if they wish to participate in the global marketplace (Barrientos and Dolan 2006).

Retailers use institutions, such as standards and third-party certification, in addition to other criteria to determine what products get traded, which producers can participate in the value chain, and under what conditions. For example, Walmart has developed its “Live Better” campaign as part of its global responsibility initiative, which includes standards to ensure ethical sourcing within its global supply chains. UK food giant, Tesco, has its “Nurture” program that sets standards for Good Agricultural Practices, including rules regarding the environment and worker welfare.

From the perspective of corporations, voluntary self-regulation is preferable to control by the state and many businesses value CSR initiatives as a means of protecting their brand-name reputation and managing economic risk. Voluntarist approaches to regulate corporate behavior within the global agrifood system have also garnered support from governments, especially in the UK and Western Europe, and among international organizations, such as the European Union (EU) and the United Nations (UN).

A preeminent example is GLOBALG.A.P., a consortium of major food retailers who created and implemented a set of agrifood standards to govern trade within their value chains. Launched in 2001, GLOBALG.A.P. (called EurepGAP until 2007) was conceived by a group of supermarkets from the UK and Europe who were concerned with establishing a set of harmonized, independently verified standards intended to address public concerns about food safety, environmental impacts, and the health, safety, and welfare of workers and animals. The basis for collaboration reflected the desire by GLOBALG.A.P.’s founders to avoid a situation where each company was engaged with developing its own standards and auditing system. Not only would this prove enormously expensive and time-consuming but company-based standards could make it difficult to sustain guaranteed supplies of certified product from producers.

These retailers recognized that they had a common interest in creating a harmonized set of requirements that would facilitate global trade within their supply chains by ensuring that

supplies were interchangeable between companies (Bain 2010a). The intent was that GLOBALG.A.P. would function as a baseline standard with individual companies then free to develop additional standards and audit schemes (e.g., Tesco’s Nurture) if they wished to do so.

The protocol was originally focused on fresh fruit and vegetable suppliers but has since expanded into other crops (including coffee, tea, and flowers), livestock, and aquaculture. To participate in GLOBALG.A.P., producers are required to meet a broad array of food safety and quality standards as well as labor and environmental standards and, in the livestock sector, animal welfare standards. To demonstrate compliance, producers must be independently audited by a third-party certifier who is approved by GLOBALG.A.P. While these standards are not mandated by law and thus considered voluntary, the reality is that compliance with GLOBALG.A.P. has essentially become an “entry ticket” for trading within the UK and EU marketplace (Campbell et al. 2006; Fox and Vorley 2006). Consequently, producer participation in GLOBALG.A.P. has continued to grow since 2001 with GLOBALG.A.P. establishing itself as the world’s leading farm assurance program with some 130,000 producers from more than 110 countries certified in over 400 products (International Trade Centre 2013).

Multi-stakeholder-Led Initiatives

Business-led efforts to incorporate standards and codes of conduct for CSR within their trading relations have been significant. Yet, many proponents of CSR remained concerned about the lack of accountability, transparency, and participation within such efforts. Subsequently, in recent years, one of the most significant trends intended to enhance “stakeholder dialogue, participation, and partnership” (Bendell 2005, p. 362) within global value chains is multi-stakeholder-led initiatives (MSIs) or “roundtables” where a range of stakeholders concerned about the same issues sit down at the same table (Bailis and Baka 2011; German et al. 2011; Partzsch 2011). With MSI, nongovernmental organizations (NGOs) collaborate with businesses to

develop company codes of conduct, labor and environmental standards, and auditing systems designed to improve business practices within the global trading environment (O'Rourke 2005; Djama et al. 2011; Levidow 2013).

Proponents argue that since MSI are more inclusive than business-led initiatives, a broader range of interests and concerns can be addressed (Schouten and Glasbergen 2011). Many large-scale corporations are motivated to participate in these novel organizations as a means of harmonizing their global standards and establishing their public credibility as socially responsible, thereby minimizing social and economic risk (Ponte and Cheyns 2013). Examples of MSI within the agrifood sector include the Marine Stewardship Council's (MSC) Sustainable Fishing Programs, the Rainforest Alliance Certified Programs, and the UK's Ethical Trade Initiative (ETI).

Significantly, MSIs have flourished in the biofuels sector where the expansion in global trade in biofuels and the establishment of MSI have developed almost hand in hand. The rapid expansion in the production of biomass crops such as corn, palm, soy, and sugar in developing countries to produce biofuels, especially for the European market, has raised a number of complex ethical issues concerning food security, land grabs, water grabs, deforestation, loss of biodiversity, labor rights, and greenhouse gas (GHG) emissions (Selfa et al. [forthcoming](#)).

The establishment of the EU's Renewable Energy Directive (RED) in 2009 provided impetus to many MSIs. The RED includes several environmental sustainability criteria; however, its major focus is that 20 % of all energy and 10 % of transportation fuels will come from renewable sources by 2020 and that an initial 35 % GHG reduction will increase to 60 % for new biofuel installations by 2017 (Bailis and Baka 2011; Levidow 2013). In 2012, EU member states approved seven nongovernmental standards and certification schemes created to ensure that biofuels traded within the EU meet the RED sustainability rules, including the MSI's Roundtable on Responsible Soy (RTRS), the Roundtable on Sustainable Palm Oil (RSPO), and Bonsucro.

For example, Bonsucro is a MSI that has developed sustainability standards and certification for sugar and sugarcane ethanol production. Bonsucro's membership includes NGOs (e.g., the World Wildlife Fund and Solidaridad), sugarcane producers and ethanol production companies, and end-user companies, such as BP and Shell. Bonsucro excludes governments from its organization, which is the norm among MSIs (Ponte 2008; Cheyns 2011). Bonsucro explains on its website that its standards and certification will ensure "that a farmer sees better yields, human rights are respected, the planet benefits from better stewardship, the miller becomes more efficient, the trader gains more visibility, the end user greater transparency of origin, and we all...benefit from knowing that Bonsucro certified means 'sustainable'" (cited in Selfa et al. [forthcoming](#)).

Establishing Legitimacy

Despite efforts to incorporate CSR, the growing role of business, business associations, and MSI in determining the organization and rules of trade continues to pose important ethical concerns and dilemmas related to trade. One concern is the challenge that these organizations pose for democratic systems of government (Bendell 2005). Within this context, scholars have become increasingly interested in how such organizations establish legitimacy. Legitimacy is concerned with normative aspects of authority, who is understood to have the authority or right to rule and who is obligated (but willing) to obey that rule (Partzsch 2011).

Within liberal democracies, the state's authority to rule, and the willingness of its citizens to accept that rule, is derived from democratic norms (e.g., elections) whereby citizens can hold representatives accountable for their performance (Partzsch 2011). The challenge for non-state actors is how to gain approval from different stakeholder groups in society since rules imposed through the use of market power are vulnerable to challenge as undemocratic and therefore illegitimate (Clapp and Fuchs 2009; Higgins and Lerner 2010).

Discursive and communication practices are mechanisms through which organizations attempt to establish legitimacy (Gibbon and Ponte 2008; Clapp and Fuchs 2009; Higgins and Lerner 2010). Of particular interest to scholars is the importance of organizations appealing to technoscientific norms and values (Konefal and Hatanaka 2011) and “expert knowledge and practice” (Gibbon and Ponte 2008, p. 366). Here, organizations assert that institutions such as standards should be based on technoscientific values such as objectivity and value freedom with rules of measurement that are quantifiable and scientific. In other words, a good standard should incorporate rules of measurement, which become the means through which standards can be quantified (Bain et al. 2010).

For example, Bonsucro conveys the idea that its legitimacy is premised on its use of scientific standards that are politically independent from the government. Bonsucro explains that it has developed a “global metric standard” based on a “set of metric measurements” designed to measure the sustainability of sugarcane and its impact. Bonsucro frames its standard as superior to government regulation because it is scientific, nonpolitical, and value neutral (Selfa et al. forthcoming).

To help establish legitimacy for its standards, GLOBALG.A.P. emphasizes that its standards are based upon technoscientific principles, such as risk assessment, which are independently verified by accredited third-party certifiers. For example, GLOBALG.A.P. argues that its “protocol has been developed by experts and is heavily risk assessed. By adhering to good agricultural practice we reduce the risk and there are a number of other significant benefits with respect to worker safety and welfare. To achieve [our] goals, [GLOBALG.A.P.] seeks to achieve global consistency in their standards by verifying best practice objectively” (cited in Bain 2010a).

In addition, GLOBALG.A.P. emphasizes its use of risk assessment to discern just how rigorous its standards need to be. For example, in 2007, GLOBALG.A.P. developed a module to address high-risk instances of worker health, safety, and welfare known as “Good, Risk-Based

Agricultural Social Practice” (GRASP). This module is separate from the GLOBALG.A.P. general protocol and is only intended as a voluntary standard that retailers can demand for regions of the world or sectors of the industry where the “risk of social misbehavior” is higher (GLOBALG.A.P. et al. 2007, p. 6). In not requiring this module for all workers, GLOBALG.A.P. argues that mainstream agriculture cannot afford to implement broad-based labor standards or full social audits (GLOBALG.A.P. et al. 2007). Rather, it argues that rigorous labor standards and social audits are only realistic and affordable in niche markets where consumers are willing to pay (e.g., Fair Trade or the Ethical Trading Initiative (ETI)) or where the risk of a problem is especially high (e.g., GRASP) (GLOBALG.A.P. et al. 2007).

To gain legitimacy, the rules established by private-sector trade organizations must be accompanied by a system of oversight that is perceived as independent, transparent, and expert based (Hatanaka et al. 2005; Campbell et al. 2006; Campbell and Le Heron 2007). Within the global agrifood system, third-party certification (TPC) is understood to embody such practices and norms, and TPC has emerged as one of the primary mechanisms through which organizations attempt to achieve legitimacy. Third-party certifiers are responsible for assessing, evaluating, and certifying whether a producer has met an agreed-upon set of standards (Hatanaka et al. 2005). TPC then conveys information about specific safety or quality claims of a product (e.g., maximum residue levels for pesticides, good labor practices, or animal welfare) from the producer to the buyer and/or consumers and government regulators.

TPC creates organizational legitimacy based on the assumption that its audits utilize technoscientific expertise and that it provides transparency and accountability to stakeholders and the public (Konefal and Hatanaka 2011). In addition, its independence from producers, buyers, NGOs, or government regulators enhances its broad appeal and authority as objective and impartial since it is viewed as having no stake in the outcome of the audit (Hatanaka et al. 2005).

The certification process, therefore, is presumed to be fair to all participants within the value chain (Bain and Hatanaka 2010).

Technoscience as the Practice of Power and Exclusion

Organizations involved with trade rely on standards and TPC to coordinate and govern the global agrifood system. In the struggle over whose rules should rule, organizations appeal to technoscientific norms and values to legitimize their standards or TPC and thereby assert their authority to govern across industry sectors, nations, and global value chains. However, questions of power are often hidden behind the language of scientific objectivity and value neutrality, and if standards and TPC within the agrifood system are about power, “then they must also be about ethics and justice” (Busch 2011, p. 239).

A growing body of literature suggests that this emphasis on technoscientific values and practices in the standards setting processes, together with the use of TPC, tends to privilege powerful actors and sideline the concerns of less powerful stakeholders, such as small-scale producers and workers, about justice and equity within the global trade system (Tallontire and Vorley 2005; Bain 2010b). It is a means to limit participation by producers and workers in the Global South within the decision-making process (Bain and Hatanaka 2010; Partzsch 2011).

For example, GLOBALG.A.P. emphasizes that “complete social audits with in-depth investigations and worker interviews are NOT in the scope of GRASP,” its third-party audit program for high-risk agrifood chains (GLOBALG.A.P. et al. 2007, p. 3). Studies of the structures and functions of organizations, such as MSI, suggest that despite efforts to make these organizations more participatory and democratic, their emphasis on certain technoscientific values and discourse tends to marginalize “nonexpert” stakeholders, such as workers, small-scale producers, and rural communities, who cannot conform to these discourses (Bain 2010a; Bain and Hatanaka 2010; Cheyns 2011; Ponte and Cheyns 2013). A focus on techno-legal language

reinforces existing power relations by discrediting alternative “forms of proof” that communities in the Global South typically use to provide evidence about, for example, land rights (Silva-Castaneda 2012). Cheyns (2011) found that MSI tend to depoliticize standards by focusing on “strategic engagement” thereby stifling efforts by local communities to debate questions of justice. Similarly, recent work on biofuels has suggested that “the institutional, discursive and symbolic value of sustainability certification” depoliticizes and legitimizes the expansion of monocultural biomass production (e.g., sugarcane, corn, soy, palm plantations) together with its concomitant land and water grabs by elites and “dispossess[ion] of rural communities” (Levidow 2013, p. 211; see also, Schouten and Glasbergen 2011; Selfa et al. forthcoming). In sum, despite claims of CSR, most trade organizations continue to emphasize the technoscientific values within their governance strategies, which are then used “to privilege some actors and forms of knowledge while marginalizing others” (Konefal and Hatanaka 2011, p. 125).

Summary

Corporations, business associations, and MSI have emerged as key players in the regulation of production, trade, and consumption, establishing governance mechanisms, such as standards, codes of conduct, and TPC, designed to regulate people and things within global value chains. Here, scholars are concerned with understanding the role that these organizations play in enhancing – or diminishing – the social, ethical, and environmental performance of business throughout the global agrifood system. Scholars have been particularly concerned with understanding how these organizations create legitimacy by utilizing technoscientific and expert practices and discourse. The governance literature has emphasized that this is an area that is deeply political even while posing “as depoliticized” (Ponte et al. 2011, p. 289). In other words, institutions – norms, rules,

conventions, and certification – always unfold within specific political economies and power relations (Ponte 2008; Bain and Hatanaka 2010; Busch 2011; Klooster 2011).

Moving forward, it is important to continue to explore the practices, structures, and forms of asymmetrical power that exist within organizations, including MSI, and the implications of this asymmetry for social and ethical practices (Cheyns and Riisgaard forthcoming). Moreover, if institutions are inherently political and ethical, then one of the fundamental challenges that remain is how to construct democratic processes that allow us to adjudicate questions of fairness and justice within the agrifood system.

Cross-References

- [Free Trade and Protectionism in Food and Agriculture](#)
- [Multilateral Trade Organizations, Food, and Agriculture](#)
- [NAFTA and the Food and Agricultural Industries](#)
- [Private Food Governance](#)
- [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Food, Class Identity, and Gender

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Synonyms

Inequality; Social class

Introduction

“Class” refers to hierarchical divisions in society based on wealth, income, prestige, and/or one’s relationship to the means of economic production (i.e., factory owner or worker, landowner, or peasant). Traditional definitions of class are based primarily on material assets, wage labor, and occupational status; they rarely account for unpaid work or everyday practices like shopping, cooking, and eating. Newer “culturalist” or “pluralist” approaches define class as a socially

constructed identity that may depend as much on lifestyle and taste as material assets and labor conditions. Feminist scholars also emphasize the intersections between class identity and other social identity categories like gender, race, ethnicity, sexuality, religion, nationality, age, and ability. Food plays a central role in the construction of and lived experience of class and gender. This entry explores some of the ethical questions that arise from the relationships between class, gender, and food in five realms: hunger and food access, eating disorders, diet and body size, labor, and cultural capital.

Hunger and Food Access

Class and gender are two of the primary factors that determine whether someone will be affected by hunger. According to the UN Food and Agriculture Organization, the world produces more than enough calories for the current population; nevertheless, approximately 870 million people chronically lack sufficient food for their daily energy requirements (FAO 2012). The overwhelming majority (852 million) live in the developing world and occupy the lowest social stratum, lacking the resources to produce enough food on their own or buy the food available in markets. Temporary food shortages caused by weather, conflict, and distribution problems also primarily affect the poor.

The UN estimates that 60 % of chronically hungry people are women or girls. Worldwide, women own fewer and less productive agricultural resources and have less purchasing power than men. In some countries, tradition dictates that women eat last, which means they eat less than men when food is scarce and eat a less varied diet with fewer nutrient-dense foods like meat and vegetables. Women are also more likely to go without food during temporary shortages while men and boys get what little food is available. For all of these reasons, women and girls are more likely than men and boys to suffer from problems associated with malnutrition, including diminished learning and work capacity, increased susceptibility to infection, and stunted growth.

Malnutrition also puts women at greater risk of death during pregnancy and childbirth (Committee on World Food Security 2011).

Chronic hunger primarily affects people in developing countries, but even in developed countries some people lack reliable access to sufficient food. In the USA, approximately 15 % of households were classified as food insecure in 2011, meaning they had difficulty providing enough food for all their members all the time, and 5.7 % were very food insecure, meaning food intake was reduced and meals were skipped due to a lack of resources. Rates of food insecurity are higher for households with children headed by a single woman (25.3 % food insecure; 11.5 % very food insecure) and women living alone (7.7 % food insecure; 7.9 % very food insecure) (ERS). As with chronic hunger, food insecurity usually occurs in the presence of available food that people simply cannot afford to purchase; however access to food may also be a factor. The term “food desert” was developed in the 1990s to refer to neighborhoods with few food markets and limited transportation options. Whether or not these neighborhoods truly lack adequate food is contested; however, there is broad agreement that disparities in the retail food environment of developed countries correspond to disparities in neighborhood income levels and that poorer people often have less access to some types of food, particularly fresh produce.

Eliminating hunger is widely recognized as an urgent humanitarian need and an issue of social justice. In addition to the suffering hunger causes directly, malnutrition also helps perpetuate poverty. Due to the disproportionate affect hunger has on women, alleviating hunger is also an issue of gender equality. The right to adequate food is enshrined in international human rights law, including Article 25 of the 1948 United Nations *Universal Declaration of Human Rights*, which declares every person’s right to “a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care.” The USA has historically opposed formal recognition of the “right to food,” and at the 2002 World

Food Summit, representatives from the USA argued that the right to food should mean “an opportunity to secure food and not a guaranteed entitlement” (Butterly and Shepherd 2010).

Even among those who agree that the right to food should be a guaranteed entitlement, there is considerable debate over who is responsible for feeding the hungry, whether charity creates dependency instead of self-sufficiency, and how to handle situations where food aid might undermine national or cultural sovereignty. For example, the international community was reluctant to intervene in the rural famine in Ethiopia in 1973–1974 in part because the country’s regent, Haile Selassie, said he did not want his country to look like “just another starving African nation” in need of large-scale emergency aid operations while they were hosting the tenth anniversary of the Organization of African Unity. Educating girls and women and offering women microloans to start small businesses have been shown to reduce malnutrition and improve their community’s food security; however, targeting women often involves violating their societies’ preferences. Selecting girls and women for special education and empowerment programs may put them at risk of retaliation.

There are also ethical questions raised by the use of food aid as a political instrument and the practice of attaching conditions to aid. The USA has been criticized for its decision to send food aid to the Eritrean separatists in Ethiopia in 1985, which was interpreted as an attempt to stoke the continuing civil war and topple the Soviet-allied Mengistu government. The World Food Programme struggled with the question of conditions in its efforts to address food shortages in Zimbabwe in the 2000s. President Robert Mugabe only wanted food aid distributed to those who supported his government, which was widely seen as the primary cause of the shortages. Some argue that attaching conditions to aid is inherently immoral, but without conditions, food aid may not reach those who need it most or may be used to prop up tyrannical governments (Butterly and Shepherd 2010).

Eating Disorders

Abnormal eating patterns involving restricted or excessive consumption are generally believed to be most prevalent in white middle- and upper-class women in North America and Western Europe; however, they also appear to be increasing around the world. The three most widely recognized and studied eating disorders are anorexia nervosa, bulimia, and binge eating disorder [BED]. Anorexia nervosa is usually characterized as the relentless pursuit of thinness through refusing or restricting food. Bulimia is characterized by episodes of bingeing, or eating large amounts of food, followed by purging, usually by inducing vomiting or using diuretics and laxatives. Binge eating disorder [BED] resembles bulimia, but typically without purging. Other eating disorders include purging disorder (bulimia without bingeing episodes), diabulimia or the manipulation of insulin by diabetics to bring down their weight, night eating syndrome, and orthorexia or an obsessive concern with food purity. Eating disorders are often accompanied by a fear of fat and body dysmorphic disorder, or a distorted self-image usually characterized by feeling fat despite appearing thin to others.

Eating disorders are both an immediate cause of suffering and can lead to other health problems, a diminished life, and sometimes death. Approximately 15 % of anorexics die from suicide or starvation. Like hunger, eating disorders make people more susceptible to other diseases and reduce their capacity to learn and work. Eating disorders are also associated with depression and substance abuse. There are ethical questions raised by some treatment and prevention strategies and the possibility that contemporary understandings of the disorders may exclude marginalized groups.

Most researchers believe that eating disorders are caused by an interaction between biological, psychological, social, and cultural factors. Joan Jacobs Brumberg argues that the emergence of anorexia in late nineteenth century England and America was facilitated by the fashion for fragility and sickness in bourgeois women, the association between eating (especially meat) and sexual

desire, and tensions in the Victorian nuclear family particularly around the socialization of adolescent girls (Brumberg 1988). Contemporary eating disorders are often linked to the intensification of public concern about obesity since the 1980s and the aesthetic preference for thinness represented by cultural products like Barbie and the unrepresentative thinness of most women portrayed in mass media and fashion. The prevalence among white and Asian girls in the middle and upper classes may reflect the particular pressure many in that demographic feel to adhere to dominant beauty ideals.

However, the widespread association of eating disorders with wealthy, white adolescent females may also be both a result and cause of underdiagnosis in other groups. Men and boys might be less likely to seek treatment for symptoms associated with a feminized condition. Additionally, men and older women appear to be more likely to suffer from BED, which has only recently attracted the attention and concern of researchers and doctors. According to one survey of adults in the USA, 0.9 % of women and 0.3 % of men reported having anorexia at some time in their lives, 1.5 % of women and 0.5 % of men reported having bulimia, and 3.5 % of women and 2 % of men reported having BED (Hudson et al. 2006).

The focus on middle-class white adolescent girls' experience of eating disorders may also have shaped the way the disorders are defined and understood in ways that exclude the particularities of how they manifest in other populations. In Becky Wangsgaard Thompson's interviews with nonwhite, poor, and lesbian women with eating disorders, many of them described bingeing in order to achieve a numbed mental state similar to drunkenness or a drug high. Other interview subjects reported wanting to alter their bodies after an assault, either in an attempt to return to a childlike thinness they hoped would attract less unwanted sexual attention or to achieve a kind of sexual invisibility through fatness. Thompson argues that the dominant approach to eating disorders has underestimated how often they arise in response to racism, sexual abuse, poverty, sexism, emotional and physical abuse, heterosexism, and classism, all of which are more likely to

affect people outside the demographics traditionally seen as most at risk (Thompson 2002).

There is considerable debate and little consensus about what treatment strategies are most effective. Anorexic patients who reach a very low weight are traditionally hospitalized and sometimes fed via tube or IV against their wishes. In an alternative called the Maudsley approach, patients remain at home where their feeding is supervised by family members. Critics of the Maudsley approach claim that family members, especially the parents of adolescents, should remain removed from treatment to preserve the patients' privacy and autonomy (Brown 2006). Treatments are often expensive and many health insurance plans provide little or no coverage, effectively restricting access to the full range of possible treatments to the rich.

Some people with eating disorders argue that all forms of treatment are inappropriate violations of their autonomy. Participants in pro-ana communities, which often take the form of online message boards and groups on social networking sites, claim that they are not diseased and that their "symptoms" are accomplishments of self-control and central to their identity. Some medical associations and advocacy groups have asked that pro-ana sites be shut down because they encourage self-harm. Yahoo and Facebook will shut down groups identified as pro-ana. However, others argue that censoring the sites will not prevent anyone from developing an eating disorder and that pro-ana sites may actually help friends and family members identify loved ones suffering from disorders. Livejournal and MySpace will not shut down pro-ana groups, but have worked with advocacy groups to place advertisements for recovery groups and treatment services on the sites (BBC News 2008).

Scholars and activists who call for more representative portrayals of women in media and fashion often cite the prevention of eating disorders as one of their aims. In 2013, Israel passed a law that bans models with a BMI under 18.5 from catwalks and commercials and requires advertisers to include a notice on images that have been photoshopped. The legislation was partially inspired by the death of Israeli model

Hila Elmaliah from anorexia in 2007. Critics of the law, like fashion publicist Kelly Cutrone, defend the use of extremely thin models on aesthetic grounds, claiming that clothes look better on thin people (Roff 2013). Even eating disorder specialists are skeptical about claims that eliminating very thin women from mass media will end, or even meaningfully reduce, the incidence of eating disorders. There are similar debates about claims that the increasing incidence of eating disorders is due to Western cultural influence, particularly exposure to Western media.

Diet and Body Size

Beliefs about body size and attempts to shape the body through diet vary widely around the world. The preference for thinness and practice of weight-loss dieting appear to increase along with affluence and Western influence; however, anthropologists estimate that 80 % of human societies on record have a preference for plumper women. Just as thinness and restrained eating are associated with wealth and virtue in most industrialized Western countries, fatness and a robust appetite are seen as beautiful and healthy and associated with a higher social status in others. In some societies, like the Tuareg and Azawagh of Niger, men are supposed to be thin but women cannot be "too fat" and families who can afford it engage in deliberate fattening rituals to prepare girls for marriage (Popenoe 2004). In some parts of Puerto Rico and Greece, a woman getting fatter after her marriage is seen as a positive sign of her husband's success in providing for the family (Massara 1997). Some subgroups within Western countries also hold a positive view of fatness; African-American women and Latinas in the USA are more likely than white women to associate fatness with strength and beauty.

Some people argue that body size preferences (or perhaps all beauty ideals) are inherently problematic because they create and reinforce unfair social hierarchies, promote unhealthy eating behaviors and body dissatisfaction, and are particularly burdensome for women. Susie Orbach's

influential 1978 book *Fat is a Feminist* issue argues that dieting and compulsive eating are both caused by gender oppression and constitute another form of oppression for women. Others argue that investing in beauty ideals is a meaningful form of cultural work related in complex ways to a society's values and that striving for thinness or fatness contributes to identity formation, well-being, and social cohesion. There is broad agreement that weight bias has a negative impact on the social, economic, psychological, and physical health of people who do not fit prevailing ideals and that weight bias affects women more than men and poorer women more than richer women.

In countries where thinness is preferred, fatness is often associated with lower class status and marginalized racial groups. Women are typically expected to adhere to a lower ideal weight and experience more harassment about their weight and diet than men. In the USA, fatter white women earn less than thinner white women with the same jobs and qualifications; there is no difference for women of color or men. Fat women in the USA are also more likely to be depressed and suicidal and less likely to find dating partners or marry (Oliver 2006). Doctors and psychologists have been shown to view fat patients as lazy, lacking in self-control, noncompliant, unintelligent, and dishonest, and they perceive women as fat at a lower BMI than men. Educators say fat students are untidy, more emotional, and less likely to succeed than thinner students and have lower expectations for them across a range of ability areas. These stereotypes may lead to a lower standard of care and poorer academic performance and educational achievement, and the effects are greater for women, people of color, and the poor (Friedman and Puhl 2012).

Labor

Women do a majority of home food preparation around the world and play a significant role in commercial agriculture, industrial food production, and restaurants. Growing, processing, and

serving food can be a source of power and pleasure for women and is widely seen as a realm of women's expertise. However, bearing a disproportionate share of the burden of food labor can also be a form of gender oppression, and women who work in food industries are subject to greater wage exploitation and more physical and emotional abuse.

According to the FAO, women produce more than 50 % of the food grown worldwide. In developing countries, 79 % of women who work are primarily engaged in agriculture. Women farmers often face more challenges than men in getting access to desirable land, improved seeds, fertilizers, and equipment on average. The FAO estimates that women's yields are on average 20–30 % lower than men's (Committee on World Food Security 2011).

Women do 85–90 % of household food preparation in developing countries. In some developed countries, the share of home cooking done by men has been increasing for at least the last few decades, but women still do more of it. According to a 2012 time use study in the USA, women spend approximately three times as much time as men on food preparation and cleanup. Approximately 50 % of women spend at least some time cooking on an average day while fewer than 20 % of men do (Bureau of Labor Statistics 2013). Women also do a majority of the shopping for food and bear primary responsibility for the additional labor involved in feeding children, even when they work outside of the home.

Women employed on farms, in factories, and at restaurants are typically paid less than men in those industries and are at greater risk of rape and sexual harassment in the workplace. A 2010 survey of women farmworkers in California found that 80 % of respondents had experienced some form of sexual harassment at work. Twenty-four percent had experienced sexual coercion, which usually entails being offered quid pro quo like desirable jobs for sex (Morales Waugh 2010). In meatpacking and food processing, women tend to be assigned to jobs that pay less, are less likely to be promoted, and are subject to more sexual harassment and assault.

Women restaurant workers are more likely to work in tipped positions, which have a lower guaranteed minimum wage, and are less likely to be promoted or assigned to managerial roles. Only 11–18 % of chefs are women, and women chefs earn an average of \$14,851 less than their male counterparts (Villaneuve and Curtis 2011). On average, women in the restaurant industry in the USA make about 79 % for every dollar earned by men, which is comparable to the national gender wage gap.

Cultural Capital

In addition to all the material ways food reflects and reproduces class hierarchies, food is also implicated in the hidden or “soft” forms of domination that operate at the level of aesthetic tastes, habits, and social dispositions. The term “cultural capital” comes from *Distinction*, Pierre Bourdieu’s 1979 study of the preferences of different social classes in France. He argued that the upper class preserves its advantages in part by making “good taste” more difficult to acquire. In keeping with his theory, the kinds of culinary knowledge and eating practices constructed as aesthetically and morally superior (often characterized by words like elegant, polite, refined, or sophisticated) are generally those that only the wealthy can afford to cultivate. The foods and eating practices of the poor and working class tend to be characterized as coarse, rude, disgusting, or uncivilized. Tastes and habits form the basis for judgments about intelligence and moral character and sometimes determine access to exclusive spaces and opportunities.

The cultural capital associated with food may be particularly important to women because cooking, entertaining, and teaching children etiquette have all traditionally been feminized. In contemporary Western countries, most mass media in the “lifestyle programming” genre, which seeks to educate audiences about things like food and home decorating, is aimed at women. Media scholars Kathleen LeBesco and Dean Naccarato argue that the genre as a whole and star performers like Julia Child and Martha

Stewart reinforce class by giving their largely female audience the illusion of mobility (LeBesco and Naccarato 2008).

Class-based and gendered attitudes towards food also shape social movements aimed at improving the food system. In the USA, the Pure Food and Home Economics movements of the late nineteenth and early twentieth centuries and the Slow Food and locavore movements of the late twentieth and early twenty-first centuries have been largely led by white, middle- and upper-class women. Particularly in the case of the Pure Food and Home Economics movements, women’s participation has been attributed to the Cult of Domesticity and hailed as a kind of feminism. White, middle-class American women learned to work within and simultaneously expand the domestic sphere by pursuing political change through their accepted roles as mothers, caretakers, and managers of the home (including, crucially, the kitchen).

However, women’s empowerment through food activism may have come at the expense of other groups, particularly immigrants and the poor. Participants in these movements often espouse populist aims and sometimes claim to be specifically working on the behalf of immigrants or the poor, who are particularly vulnerable to the abuses of industrial food production – especially unsafe and unhealthy products and unsafe working conditions. However, by pathologizing the way immigrants and the poor eat, they also perpetuate prevailing cultural hierarchies. The Slow Food and locavore movements have been widely criticized for perceived elitism and advocating a narrow form of activism based on consumption that effectively excludes the poor and working class.

Summary

The primary ethical questions raised by the relationship between gender, class, and food concern the ways food can reflect and reinforce inequalities. Women and the poor in developing countries are more likely to experience chronic hunger; women and the poor in developed

countries are more likely to be food insecure. Women are more likely than men to develop eating disorders, which may be more common in the middle and upper classes or simply underdiagnosed in the working class and poor. In some cultures, fatness is seen as beautiful and women are encouraged (or forced) to eat a lot in order to become fat; in others, thinness is preferred and women are encouraged to restrict their consumption. Women do the majority of the domestic labor of growing and cooking food worldwide and face wage discrimination and sexual harassment when working in food industries. Eating, dieting, cooking, and working with food may be a source of pleasure and power for some women some of the time but can also be a source of oppression. Tastes and manners are used to distinguish people of different classes, and social movements led by middle- and upper-class women may perpetuate class hierarchies through the cultural politics of “good taste.”

Cross-References

- [Access to Land and the Right to Food](#)
- [Eating Disorders and Disturbed Eating](#)
- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Ethics and Food Taste](#)
- [Food Deserts](#)
- [Restaurant Workers](#)
- [Right to Food in International Law](#)

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Food's Purposes

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Synonyms

Food (definition); Food's ends; Understanding food

Introduction

What is food? Central to any discussion of philosophy of food is a description of what the term “food” can mean. One way to conceptualize food is by reference to its intended use, to look at the ends to which food is put. This is an explicitly teleological approach, by which a thing, in this case food, is made sensible by reference to the goal and outcome that a user has for the given thing. On the teleological account, an action becomes sensible by recognizing three things – the reasons that a person has for acting, their action, and the outcomes of that action (Henschke 2012, pp. 58–60). This entry makes sense of food by reference to the different outcomes that a person might have for food.

A specific case example of a specific food type, bread, is used through this entry. Six purposes for food are described: basic survival, quality of life, pleasure, personal relationships, cultural expression, and trade. Note that all six purposes understand food by reference to some form of consumption – that is, a commonality to all purposes of food is that it has been, is being, or will be consumed. Finally, while many of the purposes can be attributed to non-human consumption, this entry is focused on food as it relates specifically to humans.

Background

Bread is a common food for many people around the world. This might be as a packaged pre-sliced loaf purchased in a supermarket, as fresh-made accompaniment to a restaurant meal, or baked at home. The bread might be made from wheat flour or other grains, it might be leavened or unleavened, and freshly baked or days old. Bread will be used as an illustrative example for each food different purpose identified in this entry; however, many food types should and will fit to the different purposes.

Common to bread, and all other food types, is that people eat for reasons. Variability comes in with the reasons that a person might have for eating: the same piece of bread might be eaten

to prevent starvation, to celebrate a particular cultural event, or to distract a person while working at their desk. The variability of purposes that a person might have for eating can mean that the bread, and food more generally, is valued differently. At a population level, these values can assist in determining what sorts of food get prioritized – The World Bank’s *AgResults: Innovation in Research and Delivery* program, for example, funds agricultural research based on expected impacts on that a food product will have food security, food safety, and on the promotion of health and nutrition (The World Bank 2012).

On an individual level, the values ascribed to a certain food type are said to operate as heuristics in assisting food choices (Connors et al. 2001). Keeping to the individual, consider the difference between eating a piece of bread to prevent starvation or as part of a cultural ritual. If the bread is keeping a person from starving to death, its value is (at least) in individual survival, while if the bread is part of an elaborate cultural ritual, its value is (at least) in the symbolism and maintenance of practices of the given culture. Depending then on how one considers the different values, the bread can have different levels of importance. On occasions these values can conflict. Should a limited supply of bread be used to save a person from starvation or should it be used for a well-fed cultural group to maintain their cultural traditions? Recognizing the different purposes for food promotes a better understanding of food itself and may help understand and resolve value conflicts about food types and resources.

The six purposes identified in this entry are commonly found in discussions of food, though they may be implicit in how people understand food. In *Managing Values in Personal Food Systems*, for example, five key values of food have been identified: health, taste, social relationships, cost, and time (Connors et al. 2001). For this entry, *health* is broken into “minimum survival” and quality of life, *taste* is located under “pleasure,” *social relationships* has been broken into personal relationships and cultural expression, and *cost* and *time* have

been located under “trade.” As with much work in conceptual differentiation, the categories overlap, the boundaries between them are fuzzy, and others may carve up the terrain differently. The intention here is to capture and illuminate key purposes to which food is put.

Purpose 1: Minimum Needed for Survival

An immediate and obvious way to understand food is by reference to survival. That is, what is the minimum amount of food needed to prevent death and/or maintain a person's life? The United Nation's Food and Agriculture Organization (FAO) uses a series of indices to identify and rank hunger around the world. Central to the FAO's indices is the “human energy requirement” element. These are “estimated from measures of energy expenditure plus the additional energy needs for growth, pregnancy and lactation” (Joint FAO/WHO/UNU Expert Consultation 2004). The basic premise to the human energy requirement is that if a person expends more energy than they consume, after a given period time, they die. At an individual level, the energy requirement “is the amount of food energy needed to balance energy expenditure in order to maintain body size, body composition and a level of necessary and desirable physical activity consistent with long-term good health” (Joint FAO/WHO/UNU Expert Consultation 2004).

This human energy requirement is a coarse measure, and as Edoardo Masset describes, there are a series of ways to see how such indices are calculated and how they relate to combating extreme hunger (Masset 2011). Further, Scott Wisor has argued that when using things like indices of hunger measurement to allocate resources, these indices have important ethical assumptions and ramifications (Wisor 2012).

In the instance of food for survival, bread illustrates the concept by being eaten to prevent starvation. For whatever a given day, a person would need to eat bread with energy that provides energy that, at very least, is equivalent to the person's energy output/use. If their consumption of bread (as their only energy input) persistently sits below the level of energy output, then the

bread is not meeting its purpose of sustaining the person's life.

Purpose 2: Quality of Life

The human energy requirement is one aspect of food, and while maintaining a particular energy balance may prevent a person from starving, energy alone is not sufficient to maintain and assure a quality of life – food is also consumed to supply macro- and micronutrients. Given the important causal role played by malnutrition in public health (Müller and Krawinkel 2005), understanding food by reference to hunger alleviation and minimum energy requirement alone captures only part of the importance of food for quality of life. Olaf Müller and Michael Krawinkel differentiate between protein-energy malnutrition and micronutrient deficiency (Müller and Krawinkel 2005), with protein-energy tying more closely to purpose 1, minimum food needed for survival.

Treating protein-energy deficiency “can benefit from preventive interventions ranging from income generation and nutritional education to maternal support, food supplementation and food prize subsidies” (Müller and Krawinkel 2005, p. 282). In contrast, “micronutrient deficiencies would best be addressed through food-based strategies such as dietary diversification through home gardens and small livestock” (Müller and Krawinkel 2005, p. 279). Energy input may be necessary for quality of life, but it is not sufficient – if food is considered in relation to quality of life, then the food consumed must also provide basic nutritional requirements.

To illustrate the importance of a distinction between basic energy input and nutrition, consider that there are now people who are obese but suffering from malnutrition (Kaidar-Person et al. 2008). Their basic calorific intake exceeds their energy output, they are not starving. In combination with other causal factors for obesity – see obesity-related entries in this encyclopedia – the quality of food that they are consuming is such that their nutritional needs are not being met. If one considers that food must meet basic nutritional requirements, then a diet that does not reach these requirements

could arguably be said not to be a diet rich in food. Michael Pollan, for instance, states that “most of what we consume today is, strictly speaking, no longer food at all” (Pollan 2008, p. 7).

To counteract nutrient deficiencies, some modern food development and production use particular methods to increase the micronutrients found in common food types. One method is biofortification, in which micronutrient deficiencies in things like vitamin A, iron, and zinc are enriched through selective plant breeding (Nestel et al. 2006). See the ► [Functional Foods](#) entry in this encyclopedia for more on this issue. Other methods include addition of micronutrients at the processing stage of commonly eaten products. For instance, low folate levels are associated with neural tube defects which are detrimental to fetal health. As such, many governments have instituted folate awareness campaigns, and some have actively sought to supplement processed breads and breakfast cereals with folate to increase fetal health (Buttriss 2005).

In the instance of food understood as quality of life, bread consumed for energy alone is not sufficient. The bread is eaten to provide nutrients above and beyond its energy provision. Some diets are high in energy but low in other nutrients – eating large amounts of bread alone is likely to reduce a person’s basic health and may bring about a state of obesity. In order to prevent malnutrition, certain grains are designed through breeding or other technological interventions such that breads produced from them are high in micronutrients. Further, given the commonality of bread in many people’s diets, adding nutritional supplements to bread can be a method to provide these missing nutrients to a large swathe of a given population. The addition of folate to bread, to prevent birth defects, is one such example.

Purpose 3: Pleasure

A further obvious reason for eating is pleasure. Food tastes good, and the feeling of satiation can also be a source of pleasure. The bases for such pleasures are broad and are likely to be somewhat idiosyncratic. Four ways to carve up the pleasures gained from eating are taste, satiation, neurological stimulation, and challenge.

The most obvious pleasure that comes from food is when it tastes good. For many people, in the developed world at least, concerns of survival and nutrition are secondary to the first question – does the food taste good? Certain food types and combinations likely trigger particular neurological stimulation, such that some foods will typically taste good to the average person. Taste, however, is more complex than simple stimulation/response; contextual factors play an important role in how food tastes. Brian Wansink details a series of different events and experiments where the color of food changed how it tasted to people and how the region that a wine was said to come from changed not only the taste of the wine, but also of the accompanying meal (Wansink 2006, pp. 120–122, 119–123).

A second pleasure that comes from food is satiation or the feeling of fullness that comes from a particular meal. While satiation may be considered a quantitative aspect of food, where the pleasure of taste is a qualitative measure, contextual factors are also in play. For instance, according to Wansink, “scientists don’t know what makes us full. It seems to be a combination, among other things, of how much we chew, how much we taste, how much we swallow, how much we think about the food, and how long we have been eating” (Wansink 2006, p. 46). Further, Pollan describes the unit bias, whereby people register a feeling of fullness in part by reference to completion of a unit of food (2008, p. 183). On the unit bias, the way the food is packaged and presented will impact how satiated people feel upon eating a given amount of the food, a point supported by experiments done by Wansink (2006, pp. 16–19, 42–47).

A third aspect of pleasure comes from the neurostimulation produced by certain food types and combinations. David Kessler describes the role of sugar, fat, and salt in triggering predictable release of the pleasure-causing chemicals, the endorphins (2009, pp. 36–38), and their role in keeping the brain thinking about pleasurable foods through the release of dopamine (2009, pp. 41–45). Kessler’s argument is that sugar, fat, and salt can trigger these neurochemicals independently and that when they are combined in

a specific food serving, the pleasure and reward produced by consumption is increased, prompting Kessler to argue that such oversaturation is a common causal element in overeating (2009, pp. 58–64).

The fourth aspect of pleasure comes from challenge. As Carolyn Korsmeyer puts it “[t]he remarkable thing is not just that we managed to eat, but that we managed and continue to take considerable *pleasure* in foods that present us with challenges to both our senses and sensibilities” (emphasis original, 2007, p. 145). She describes the challenge of eating spicy foods or even food so close to rotten or still served alive to as an almost disgusting challenge from which people derive a deep pleasure (Korsmeyer 2007). Pleasure derived from food is thus a complex set of pursuits, including simple taste, satiation, neurostimulation, and even disgust.

Bread here becomes something more than a simple delivery of energy or nutrients – the flavor of a fresh home-baked sourdough is quite different to a stale slice of industrially processed bread. Load the bread up with additional ingredients tomato, chili, mozzarella, and olives, and it becomes a pizza, consumed for pleasure, and quite distinct from any thoughts of survival or health.

Purpose 4: Personal Relationships

Different to the reasons discussed so far, this fourth reason touches upon food's role as a symbol. In particular, food is used as a symbol of the relations that exist between different people. “Eating together is a primary marker of kinship and belonging” (Higman 2012, p. 149). Meals taken at home are a paradigm example of this. Within the home, the preparation and consumption of meals has indicated status. In recent times in the developed world, the role of producing and feeding the family fell primarily on the women (Higman 2012, p. 145). Further, the exclusion of people from consumption with the dominant group signified and reified class distinctions to identify caste or house servants (Higman 2012, pp. 149–150).

In conjunction with cultural expression, food choices can also play a central role in

individuation and self-identification. Think of the self-chosen status of vegetarians. Above and beyond maintaining a diet free of meat, publicly self-identifying as a vegetarian does more than simply hold to a set of moral values – for some, the public stance of vegetarianism is essential to creation and maintenance of a particular moral character. “[T]here is no *you* prior to your choices and actions, because your identity is in a quite literal way *constituted* by your choices and actions” (Emphases Original, Korsgaard 2009, p. 19). Food can indicate the existing status of relations between people and can also be a central element of self-creation.

Bread now takes on a roll whereby it may be made by a servant, to be eaten fresh by the master, and later consumed stale by other servants. The variability of service shows the existing power relations between people, even within one household. It can also symbolize a set of moral choices – a family sits down to eat a meal of roast chicken and fresh bread. One family member, a vegetarian, limits their consumption to bread alone, indicating a certain set of moral characteristics, individuating themselves from the rest of the family.

Purpose 5: Community

Extending from the idea of food as relational and individuating, consider food's role in marking out cultural identities. Two immediate forms spring to mind – food's role in religious communities and food's role in geographic communities. Paul Thompson is worth quoting at length here: “Connecting food with community is actually a commonplace. A community event without food is rare, and the bonding people experience when sharing food and drink underwrites a number of diverse human institutions. The family table, dinner and a movie, the church supper, the wedding banquet, and the business lunch are icons of sociability, each centering on a meal but implying distinct forms of common interaction and shared meaning among human beings” (2010, p. 145).

Like the vegetarian, consider first cultural prohibitions around certain food types, here called food taboos. Food taboos are said to play a major

role in the formation and maintenance of a community's identity. "Food taboos are not the only significant prohibitions raised up by ideology and identity-making, but they are probably the most persistent and widespread. . . This stems from the central role of food in defining and creating cultural and national identity, long after nutritional or medical justifications are abandoned or forgotten" (Higman 2012, p. 45). Adherents of Hindu, Islam, and Jewish religious faiths have particular prohibitions as central to their identity. Some of these taboos may consist in direct prohibitions, such as the sacredness of the cow in Hindu beliefs (Higman 2012, p. 46) or may involve particular necessary rituals, resulting in a food to be considered *halal* or *kosher* (Higman 2012, p. 45).

Of course, religious practices are complex and involve much more than prohibitions and rituals. Consider the eating of the communal bread as part of certain Christian rituals. Further, consider the role of certain feasts within religious practice (Thompson 2010, pp. 145–146). The consumption of certain foods at certain times can be central to a given cultural identity.

Food also comes in a range of geographically identifiable types. Walk through a "food district" in many cities and there will be a range of restaurants announcing their dishes by region: *Italian*, *Indian*, *Indonesian*, and *Iranian*. Definition of food by reference to a country does more than advertise the tastes offered by a particular restaurant. Such geographic identification can be shorthand for a patriotic diaspora, maintaining certain food practices away from the country of origin to help maintain a community. Like the vegetarian, such adherence to a geographic origin can express a willful identification with one's past. As Thompson puts it: "[F]ood can be a focal thing. . . when it becomes the centering orientation that holds a number of meaning-giving activities together, providing coherence and purpose to our lives" (2010, p. 136). Food, the particular ingredients used, the rituals associated with its production and consumption, give meaning to communities and can be key ingredients in reifying the existing community identity.

Bread can be, for some, the symbol for their faith. For others bread can be a link to a homeland, left behind and sometimes, never visited. Consider the Italian sandwich, the Panini, compared with the Indian paratha. Both are bread and may use similar ingredients. But despite the obvious differences in taste, they both serve an additional purpose symbolizing a people's cultural legacy, providing individuals with a link with a country of origin and permitting a living and healthy community, far away from this country of origin.

Purpose 6: Commerce and Trade

The final purpose for food sees its production and consumption in instrumental terms. That is, food is produced for consumption by others, such that those in the production chain function within a market economy. Barry Higman makes two complementary claims about food and trade – firstly that the trade in food was and still is dependent upon preservation and transport technologies. Secondly, it was trade in food, in particular exotic spices, that was a key driver for the development of early trade networks (2012, pp. 125–142). On Higman's account, the trade in food was central to much development of human history. Here, the concomitant development of technologies becomes central to understanding the trade in food and the social changes that occurred as a result – "Only with the development of efficient and reliable technologies of preservation did the long-distance movement of many commodities become viable, and only with the development of modern technologies of bulk transportation did it become profitable to move great quantities of basic foodstuffs around the world" (Higman 2012, p. 126).

On the food as trade model, the general numbers of producers can decline as farmers become more specialized, focusing on increasing outputs from the given land and inputs. "The ethical argument for such specialization is that when goods are produced at the least possible cost, they can be sold at the lowest price. This means that people who eat (all of us) spend less on food, freeing up more of their income for other things, and low-cost food is especially important for those who have the least income" (Thompson 2010, p. 31).

Such specialized practices can be environmentally harmful (Roberts 2008, pp. 208–236). Further, as Thompson notes, such specialization can come at a price to the agricultural communities themselves (Thompson 2010, pp. 33–41).

The importance of understanding food as trade is that this purpose can not only override the other purposes, but in some occasions, can actively undermine the other purposes. For instance, a snack food company may design a food product to be highly palatable, containing an ideal mixture of sugars, fats, and salts (Kessler 2009, pp. 12–17). The particular combination in this snack food increases the likelihood that consumers will eat this snack food, that is, will increase its trade. However, heavy consumption of this snack food might promote obesity and reduce basic nutrition. The snack food may also compete with existing cultural practices, such that the consumers lose connections to their traditional food types, and/or local food cultures may be outcompeted by the highly desirable snack food. Yet, presuming that obesity and/or the decline of local cultures are undesirable, seeing food only as trade overlooks these negative impacts.

Bread here fits the idea of food as trade in two ways. Firstly, that bread is produced for the purpose of selling. In this way, the bread is just a tradable item, equivalent to any other widget. Secondly, the practices in and around its production are mere instrumental practices designed to maximize tradable output: a plot of land is farmed to produce wheat for flour and is deemed productive when its output meets some desired level of profitability. Again, the growing of the wheat is secondary to profitability; the bread that is produced is valuable insofar as it makes a minimum level of return on investment.

Summary

This entry looks at the idea of making sense of “food” by reference to the purposes that people might have for that food. This entry follows the same generic food item, “bread,” to show that

while “bread” may remain bread, its meaning and value changes as the purposes for its consumption change. People may eat bread to survive, to have a minimum standard of living, to have pleasure, to develop and maintain personal relationships, as an indicator of some cultural importance, or as a tradable good. Implicit in this entry is that these different purposes can and do conflict. The recognition of the different purposes of food can help to identify and resolve some of these value conflicts.

Cross-References

- ▶ [Eating and Nutrition](#)
- ▶ [Ethics and Food Taste](#)
- ▶ [Ethnicity, Ethnic Identity, and Food](#)
- ▶ [Functional Foods](#)
- ▶ [Gustatory Pleasure and Food](#)
- ▶ [Poverty and Basic Needs](#)
- ▶ [Race, Racial Identity, and Eating](#)
- ▶ [Taste, Distaste, and Food](#)

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Food-Body Relationship

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Synonyms

Diet; Embodiment; Nutrition

Introduction

Food circulates materially (in the digestive system, supermarkets, dinner tables, school, hospital, prison cafeterias, etc.) and symbolically (in TV shows, religious rituals, feasts, etc.) to produce our bodies as socially, politically, and physically constituted transitional entities. Eating

habits are key to the interrelated constitution and practice of ethnic, racial, gender, and political identities. Food is equally important in the production of the cultural and social codes and norms that affect our bodies and our experience of self as physical beings. Food consumption involves time- and place-specific arrangements, and the body as corporeal space is sexed, built, and (re)designed through every day and lifelong practices of food and eating. Our bodies are a product of simultaneously social and physical interactions with food which transform according to changes in the life course, exchange relations, and environmental and other factors. For example, the relationship between food and body relates to life course transitions since diet-related factors influence children's bodies differently than teenagers', adults', and older people's. More specifically, younger bodies are more exposed to disciplinary patterns of eating imposed by parents, state institutions (e.g., school programs, medical specialists), and the broader social conventions of the cultural (e.g., religious dietary observance within the society, commercials) and ecological environments in which they live. Thus, the habitual food environment to which a child is exposed is often the emotional and sensory basis of her personal food choices later in life. Eating disorders (over- or insufficient eating) which affect younger and older adults also have crucial ties to one's relation to food and bodily experience in the formative years of developing food habits during childhood.

Through food, individual bodies connect to multiple intersectional abstract categories including the self, masculinity/femininity, and broader structures such as the nation (Lien and Nerlich 2004). This entry touches upon these linkages and covers the relationship between food and the body under five subheadings followed by a conclusion: the first subsection overviews four transformative moments within the Western history which mark important shifts in ethical problematization of food and bodies. The focus is on Plato's writings in *the Laws* (1967 & 1968), medieval Christian monastic practices, postmedieval social transformations, and the modern scientific turn in nutrition science.

The second subsection introduces the concept of embodiment in order to address the so-called body-mind division within much of Western thought and to present the significance of mental/emotional perceptions and practices of self and body in interactions with food. The third subsection introduces gender as an organizing social category in configuring the food-body relationship. In the fourth subsection, the emphasis shifts to a broader range of social categories which operate and mark certain bodies as “distinct” along ethnic, cultural, medical, and class-based links to food regimen. The final subsection focuses on ritualistic and activist forms of self-starvation in order to exemplify the diversity of motives and patterns behind fasting as an exceptional bodily way of relating to ethical (non)eating. The conclusion recaps the arguments and themes introduced in the entry.

Bodies and Food Ethics in Western History

Several key shifts in Western history and thought inform our knowledge of the development of ethical concerns with food and eating habits. Based on three different contexts, the shifting notions of food ethics will be depicted by focusing on the problematization of its elements: means, objectives, and scale.

In ancient Greece, food ethics, or “dietetics” as Michel Foucault refers to it in *The Use of Pleasure* (1985), involves individuals as active observers of food intake and individual diet. In *Laws*, Plato (1967 & 1968) explicitly addresses diet as a constitutive regime “which [is] either good or bad for their bodies, and equally able to affect similar results in their souls” (5,747e). For Plato, ethics is the level of relating to oneself through certain techniques and priorities in order to achieve self-transformation. Ethical transformation of the self is both a contemplative and practical domain of strategic design to achieve virtue. For him, this knowledge is particularly important because it is transferable to politics. The body and its need to be nurtured is an important aspect of the ethical transformation of

the self. The notion of the (ethical) self as something to be cultivated and maintained across all spheres of life including the everyday makes food important to Plato’s idea of moderation to constitute the virtuous life through self-transformation. Since food is capable of nurturing and damaging both the souls and bodies of men (Foucault 1985), when it comes to feeding the body, moderation in the amount and type of foodstuffs is a virtue. Yet, what moderation entails and how it should be practiced are subject to individual interpretation. Put differently, moderation is a technique in which eating habits should be designed (reasoned) to constitute the ethical subject, and body is both the domain and the product of this effort to constitute the ethical self. As such, we can say that the Platonic notion of a proper diet is more focused on the process, that is, moderation, than the body that is its end result. Moderation involves reasoning as its method. Reasoning is used to judge what is available, edible, and good in nature in order to achieve and maintain a moderate diet and benefit from its advantages on the mind. For Plato, one is capable of fashioning eating habits in a virtuous way through reasoning, and the body is both the scale and the means to realize such ethical standards.

The ancient Greek notions of private/individual food and eating decisions radically differed from the institutional engagement of the medieval church in imposing a collective food morality on the masses. The medieval Christian obsession with defying the flesh and abstaining from its desires led to a major shift in everyday and ritualistic consumption of food. Monasticism – metaphorically and actually – affected associations of food as an instrument of self-discipline. In the ancient Greek constructions of the food-body relationship, food was a resource for survival and a means for self-transformation in order to participate in the production of virtuous (public) life. Medieval Christianity, in contrast, reinterpreted virtue through self-sacrifice and mortification. Self-transformation was only possible through the disregard of the mortal body and its needs and pleasures in order to free the soul from the burdens of the flesh. As such, unlike the ancient Greek notion of the body as a means of

cultivating the ethical self, Christian morality of the Middle Ages targeted bodily pleasures as a barrier to spiritual progress. The ecclesiastical emphasis on mortification and refrain from bodily desires reordered much of privately exercised routines of individual and social life. Like sexuality, food intake was among these previously private spheres of life. As such, Christian understandings of care for the self (soul) redefined the food regimen and manners of individuals and masses. The disciplining of individual bodies at the same time introduced new and collective food consumption patterns such as cycles of fasting and festivals.

In *The History of Manners*, German sociologist Norbert Elias (2000) explores how postmedieval European values regarding violence, sexual and bodily behaviors, table manners, and interpersonal communication gradually transformed into what we today broadly call etiquette or socially acceptable behavior in most Western societies. Elias relates these developments to increased feelings of shame and disgust, which increasingly standardized “self-restraint” as a norm within education and all other fields of societal interaction. According to Elias, it was during this “civilizing” movement that the importance of food in public life was back on the agenda. This was mainly because moderation and refinement were once again considered the means and objective for a virtuous life primarily among the societal elites but gradually through the masses. Along with other bodily functions, eating was problematized in order to civilize individual bodies through self-control and self-restraint in public exposure and social interactions. As such, development and refinement of table manners and changes in food preparation during postmedieval transformation incorporated food and eating practices as markers of social status and differentiation.

The modern scientific turn introduced the impacts of food intake and its influences on body weight, health, and social implications of bodily existence. As populations replaced masses as the targets of political authority (Foucault 1991), scientific approaches to agriculture and nutrition became increasingly more important in

establishing political order and stability. Political and scientific concern with food availability and sufficiency in relation to population management influenced reconceptualization of food ethics at a collective rather than an individual level. Contemporary challenges, mainly about environmental degradation of agro-food resources and the inequalities in access to nutritious, culturally appropriate and affordable food, reflect the grounds on which individual and social dimensions of moral concern with food are reestablished and mutually inform each other.

Historical transformations in how food habits function in our conception of body and self are important in making sense of the current configurations of food-body relationship at the individual and social levels. In terms of the differentiation of its means, food ethics has moved away from reasoning and moderation towards monastic discipline and later towards discipline in the form of modern self-restraint. In terms of the objectives, for Plato, ethical problematization of food is a means to help cultivate the virtuous self through physical maintenance and training of the body together with the mind. On the other hand, the medieval obsession with bodily abstention and moralizing food and eating habits aimed at salvation by denying the flesh. Still disciplinary in nature, the objective of the postmedieval notion of food ethics was higher and universalized standards of civility and social behavior. Finally, in terms of the scale for conceptualizing and applying a food ethics, Plato’s emphasis was on the individual who was supposed to apply reasoning and differentiate between the good and bad food for himself. On the contrary, both the medieval emphasis against pleasurable eating and the civility movement problematized food ethics for the masses, and they were both organized on a collective basis – through religious, educational, and other institutions such as the family.

Food and Embodiment

Body and mind are considered dichotomous categories within much of classical Western

philosophy. Embodiment is one way of challenging this dichotomy and conceptualizing ourselves as physical, bodily beings who exist, interact with, and make sense of other corporeal, ecological elements through sensory, mental, and emotional means.

Within the history of Western thought, it is conventionally the body that is subordinate to the mind. The body is mostly theorized as an instrument which is either defied or well kept for the proper functioning of the mind: its mental faculties and spiritual qualities. The Western neglect of the body as secondary to the mind also relates to the patriarchal associations of mental processes such as creativity, analytical reasoning, and philosophizing with superior notions of masculinity. Within the patriarchal traditions of Western thought, the body is associated with femininity because of its transitional, vulnerable nature, and dependence on mundane necessities such as the need to be fed. Unlike the analytical functioning and universal qualities of the rational mind, the physical dimension is superficial because bodies are prone to desire, are destined to change, and are therefore instable and unpredictable. Due to the subordinate role of body within this deep-rooted dichotomy, food per se has generally lacked an emphasis as a crucial domain of our perception and practice of selves.

Subjective dimensions in eating (sensory, emotional, memory) play a key role in defining the food-body relationship as a continuum of embodied practices and awareness. Bodies are exposed to various material and social elements, including food, in processes of socialization. The material and social conditions of access to and consumption of food constitute the embodied self. The totality of these processes translates into sensations of taste, pleasure, comfort, and/or discomfort at the individual level. Since eating is an embodied action, most interactions with food and eating are also mental processes and are linked to – often multiple – emotions. The most emphasized emotions tied to eating are guilt, comfort, and success, which are mostly explored in terms of excessive or under-eating habits. Yet, not only in relation to eating

disorders, the sensory experience of anyone while eating or in a food environment is a cumulative product of pleasurable or discomforting memories of past experiences. The embodiment perspective suggests that the negative and positive attributes resulting from the physical performance of eating inform our experience and awareness of our selves, ideas on others, and how we make sense of the world in general.

Food is central to the corporeality of social life both for human and nonhuman animals (Shilling 2003; Turner 1996). Embodiment problematizes the role of the physical body in constructing the social categories resulting from corporeal actions. Nutritional, health-related, and/or mystical qualities of foodstuffs and eating habits are influential in characterizing power, beauty, and well-being as embodied processes carried out and maintained through food choice. From individual families to national/regional cuisines, food-related actions and meanings reproduce shared experiences and promote social and material interactions within a group. Although social associations of food are relational and vary over time and across cultures, food choice and diet are the primary markers of the uneven geographies of the corporeal scale. Bodies are politicized, criminalized, pathologized, and sexualized through practices such as dieting, fasting, and starvation. As embodied actions, bodily experiences of food are social processes in which the nutrients interact with conceptions of the self and the construction of intersectional identities. As such, embodiment addresses the equally physical and mental actualities of food such as cravings, hunger, and pleasure based on an integral understanding of the body-mind relationship (Hayes-Conroy and Hayes-Conroy 2008).

Food and Gendered Bodies

For most cultural and historical constructions of the food-body relationship, notions of food-related care and nurturing are associated with femininity and women. Nurturing and femininity are mutually constructed categories that operate

through embodied actions. Gendered subjects – both male and female – attribute meanings to and are defined by the everyday experiences of producing, processing, and presenting food since food is typically prepared by female (care) workers at home and outside the domestic realm. Reproductive actions such as meal planning, shopping, and cooking are strongly associated with femininity and the caregiver status of women within the patriarchal family structure.

Food is prepared in kitchens and shared in homes, both of which are intensely associated with gendered notions of feminine domesticity. In this sense, food is one of the many symbols and materials that lead to the patriarchal arrangement of gender and women's status and roles within the family and the society. Gendered experiences of eating, preparing, and sharing food are related to processes where individual bodies link to places and temporal cycles at diverse regional, national, and international scales. To illustrate, as unpaid and paid household providers; teachers; child-care, elderly-care, and patient-care workers; and mothers, women are responsible for dietary planning, food purchasing, and cooking of produce brought about by various agricultural policies, trade agreements, and cultivation methods. As care professionals, women all around the world work in fields and community gardens and regularly visit supermarkets, mega-markets, street markets, and local-organic farmers markets to negotiate the most affordable and quality foodstuffs they could provide for their dependants.

In addition to the everyday practicalities of food preparation and eating, preoccupations with body image also demonstrate the interrelations between food intake and gender. As both social process and embodied action, food interactions define the embodied constructions of feminine and masculine subjectivities. Feminine roles and experiences around the “lean body” discourse are connected to sexuality and the relationship between gendered partners. Despite the historical and cross-cultural variations in what constitutes the healthy body, food and eating habits play a crucial role in terms of the way bodies are sexualized.

Gender affects the symbolic realm and codes certain foodstuffs, body figures, practices, and spaces as masculine/feminine. Reference to the “gendered dimensions” of the food-body relationship is often understood as women's dissatisfaction with their body weight, image, etc. Yet, empirical studies have shown that restrictive eating practices and concerns for a slimmer body image affect females and males differently in reconfiguring eating habits. For example, vegetarianism is feminized while red meat is associated with aggression, strength, and masculine power. Also, weight loss through insufficient food intake and self-starvation is more common among adolescent females than males who instead opt for high-protein alternatives to replace existing food preferences in order to lose weight (Nowak 1998). Despite the rich multidisciplinary literature on feminization of distorted body image perception (i.e., anorexia nervosa), restrictive/excessive eating, and the preoccupation with a fat-free body image, gendered implications of food intake in the construction and experience of male bodies and masculinity at various stages of life remain a relatively less explored dimension of the food-body relationship.

Food and Distinct Bodies

Eating preferences are identifiers of multiple broader categories relating to superior-inferior, healthy-unhealthy, and responsible-indulgent lifestyles. In other words, perceptions of social distinction, acceptability, and cultural appropriateness significantly mark food practices. Food practices have historically been an important line of demarcation between the privileged and underprivileged across the geographies of center-periphery, rural-urban, and diverse bodies. Intensely since the mid-twentieth century, the processes of agro- and gastro-capitalism and the popular and medical discourses of food choice have promoted the global circulation of food values, types, and tastes. According to the Russian critic and theorist Mikhail Bakhtin (1984, p. 281), “by taking food into the body, we take

in the world” which includes all the power-imbued meanings, value associations, hierarchies, and practicalities that define our material lives and sense of self. These in turn greatly influence social patterns and experiences of distinction in relation to food and eating habits. Food consumption is an important domain of social and material interaction where social hierarchies and collective norms are produced, reproduced, and contested on an everyday basis and in contexts as diverse as festivity, drought, war, and other forms of political, social, and/or environmental crisis.

As an essential material commodity and a vital metabolic ingredient, food is consumed both literally and socially through embodied actions because of its associations with various forms of social power and status. Eating is a major identifier in the making of active/passive, obese, poor, ethnic, racial, working class, starving, ethical, ecological, and “beautiful” bodies. Individual food environments are also a means to establish the domain of “I” in relation to “others” in contexts of vegetarian, halal, organic, foodie, low fat, kosher, and foodscapes. For example, all of these influences, in turn, inform the ways individuals construct themselves as ethical, sinful, healthy, refined, and gendered subjects.

Ethical (Non)eating and Self-Starving Bodies

Embodied practices of food production, preparation, and eating are imbued by power and the inequalities surrounding broader social categories. Self-starvation refers to imposing self-inflicted limitations on food intake, effectively starving the body of the calories necessary to function properly. While this may be temporary and recurring, prolonged periods of starvation lead to severe organ damage and, eventually, death. Fasting, hunger strikes, and anorexia are different manifestations of self-starvation. They are also embodied expressions of self which target the body’s dependency on food to survive. Nonself-inflicted starvation is often a corporeal manifestation of the broader social-environmental disparities, primarily, of poverty,

famine, and war. Self-starvation, on the other hand, is intentional. It represents an embodied expression of the political and/or ethical disciplining of the body through its need to be nourished. The act also represents a different embodiment since the priority of the body in survival is superseded through an abstract, intuitive relationship with an external cause, ritual, etc. It is an intervention by the self to reorganize the priorities in the embodied experience of being alive. Self-starvation, thus, unfolds a process in which the body-mind integrity is reconfigured and the bodily need to nurture is contested on the way towards a morally defined self.

Fasting is voluntary refraining from eating for religious and ritualistic observances. Various configurations of the food-body relationship are at work in fasting practices. It is an embodied ritual whereby the self-starving subject denies the body its most basic need. The motives behind fasting differ historically and across cultures, religions, and rituals. Fasting may involve rewarding the soul and punishing the body, as well as regenerating and purifying both the body and soul. The ethical subject is active in disciplining the corporeal scale through food intake during fasting. Physical sensations arising from the imbalance between the body’s need and the restricted food intake during periods of fasting are an embodied constitution of the subject as an ethical agent.

A hunger strike may be an individual or group act and refers to the voluntary refrain from food and/or fluids. The act may last for a predetermined period of time or as long as individual bodies resist the symptoms of starvation. The hunger strike is an embodied form of political resistance and may also be a means to support another form of struggle for a similar, often related, complementary political cause. Slow starvation during the hunger strike – the centrality of food in bordering life and mortality of the fasting body – reflects the vitality of struggle for the resisting self. The process also evokes a different relation between the bodily and private scales of eating and social understandings of political resistance.

Restrictive eating is another manifestation of self-starvation. Insufficient eating habits are intensely linked to control over one's body and increasingly shaped by the beliefs, statements, and practices surrounding the "healthy body." Dominant weight management discourses – particularly weight loss and fat management discourses – articulate body image as a massive public and individual health problem. A geographically informed approach to the lean and healthy body image debate presents waistline and BMI as indicators of the regional and gendered geographies of the self-starving body. Still, a link between weight management through restrictive eating and improving health is disputed.

Summary

This entry has examined the food-body relationship as anchored in the corporeality of food and eating habits. It has revisited instances and social categories where food is functional in the making of ethical, relational, gendered, sexed, and politicized bodies. It has emphasized that throughout history and across cultures of thought, food and eating practices have been an integral part of the moral concern around body and ethical constitution of self. Yet, it has also argued that these processes do not function in a single direction since subjective factors such as individual sense and emotions are also at work in negotiating, accepting, creating, and subscribing to the ethical considerations developing around food and eating habits.

Cross-References

- ▶ [Christian Ethics and Vegetarianism](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Fasting](#)
- ▶ [Food and Class](#)
- ▶ [Food and Place](#)
- ▶ [Food Boycotts](#)

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Foucault and Food

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Interviewer: You do not fit the image of the sophisticated Frenchman who makes an art out of living well. Also, you are the only French person I know who has told me that he prefers American food.

Michel Foucault: Yes. Sure. [Laughter] A good club sandwich with a coke. That's my pleasure. It's true. With ice cream. That's true.

"The Minimalist Self": 12.

Synonyms

Foucauldian food studies

Introduction

Michel Foucault's writings from the *History of Madness* to the first volume of *The History of Sexuality* focus on the historical era between the late seventeenth and early twentieth centuries and drew predominantly on French archives to analyze power relations in modern institutional settings. His best-known works, dating from his "genealogical period," remain within this time frame and can be characterized as political rather than ethical in nature. In the last two volumes of *The History of Sexuality*, published shortly before their author's death, Foucault undertook what he called "modifications" in his research plan (Foucault 1990, p. 3). Rather than focusing on modern Western Europe, Foucault's final books examine ancient Greek and Roman philosophical sources in order to develop a theory of ethics as aesthetics of existence. Rejecting a view of morality as a set of universal rules, Foucault suggested that the ancient Greco-Roman models of ethics as self-care offered an alternative to Judeo-Christian and Kantian styles of universalizing and nomological morality. Technologies of self-care are enabling ways of transforming ourselves and can be understood as aesthetic practices of freedom and as a means of undoing the work of normalization. Ethics, for Foucault, was about self-transformation, becoming other than what one was. In particular, ethical practices could be undertaken to reverse and replace the effects of discipline that Foucault had examined in his earlier works.

Although never his focus, Foucault occasionally mentions diet during his genealogical period as an example of how power is written on the body and of how bodies are normalized. The example of "dietetics" is also examined as an extended example of self-care in Foucault's discussion of ancient Greek ethics. These suggestive passages, along with the diverse and productive ways that Foucault's work has been taken up by scholars working in the field of Food Studies, provide valuable insights for thinking about the ethics and politics of eating. This entry provides an overview of what Foucault wrote on food and diet as well as the manners in which these

writings have been taken up by contemporary Food Studies scholars.

Foucault on Food

The following two sections will provide an account of Foucault's occasional and fragmentary analyses of food and diet in his genealogical and ethical periods, respectively.

The Disciplining of Diet

In his 1971 article, "Nietzsche, Genealogy, History," Foucault describes genealogy as "an analysis of descent," and argues that "descent attaches itself to the body. It inscribes itself in the nervous system, in temperament, in the digestive apparatus; it appears in faulty respiration, in improper diets, in the debilitated and prostrate bodies of those whose ancestors committed errors" (pp. 82–83). Against the view that the body follows laws of instinct and physiology, Foucault insists in this entry that "The body is molded by a great many distinct regimes; it is broken down by the rhythms of work, rest, and holiday; it is poisoned by food or values, through eating habits or moral laws; it constructs resistances" (p. 87). "Effective history," he writes, "...shortens its vision to those things nearest to it – the body, the nervous system, nutrition, digestion..." (p. 89). Food, these citations suggest, is something that genealogy should attend to.

Although diet would never be a sustained theme in Foucault's own genealogies, there are indications of the normalization of alimentary choices in Foucault's lecture series at the Collège de France from 1973 to 1975 and 1974 to 1975, *Psychiatric Power* (2006) and *Abnormal* (2003). In *Abnormal*, Foucault argues that the monster was the genealogical predecessor of the abnormal individual targeted by modern psychiatry. According to Foucault, the paradigmatic monster during the Middle Ages was a fusion of man and beast. During the Renaissance it was the fusion of two humans in one body (the conjoined twin), followed by the fusion of man and woman (the hermaphrodite). By the time of the French

Revolution, however, Foucault argues that monstrosity transitioned from being about hybrid morphologies to violations of laws of consumption. The monster became a creature of aberrant appetites. This appetitive monster took two major forms: the sexual monster and the alimentary monster. These two forms of monstrous appetite were sometimes separated by class, with sex being the privileged vehicle for affluent monstrosity and food being the means of monstrosity for the starving classes. Thus, the sexual monster was captured by the figure of the incestuous aristocrat, while the alimentary monster was imagined as a cannibalistic peasant. Often the two forms of monstrosity fused in the social imaginary, as in the propaganda about Marie Antoinette, accused both of committing incest with her son and of having drunk blood from the skulls of Frenchmen. Foucault writes, “what constituted the point of formation of legal medicine, was... the existence of these monsters recognized as monsters precisely because they were both incestuous and cannibalistic, or because they transgressed the two great alimentary and sexual prohibitions” (pp. 101–102).

Despite this intriguing discussion of the alimentary monster, when Foucault traces his genealogy from monstrosity to abnormalcy, he considers only the sexually abnormal individual; the alimentarily abnormal individual remains unthematized. The reader is left with the questions: what became of the alimentary monster? Did the cannibal give birth to no “little abnormals” in the way that the sexual monster did? Can one trace a history of pathologized alimentary consumption, the way that Foucault traces a history of pathologized sexualities? In fact, reading Foucault’s lectures from the previous year, *Psychiatric Power*, Foucault describes a case of a nineteenth-century individual singled out for psychiatric treatment based on his rejection of alimentary norms. The case involves a 30-year-old melancholic who spent his nights reading and refused to consume animal foods. Harangued by his housekeeper on the subject of his unwholesome lifestyle, he became paranoid that she would poison him (pp. 34–35). Part of his psychiatric cure was the prescription of a regime

that precluded further relapses into folly. Since a rejection of animal foods is singled out as one of the symptoms of this man’s mental illness, it is almost certain that the psychiatrically imposed regime entailed a return to eating meat, dairy, and eggs. However fragmentary, this case suggests that abnormal alimentary appetites, like abnormal sexual appetites, have been pathologized by psychiatry from its birth or that diet, like sex, is a target of disciplinary power.

Diet as Care of the Self

Relations with others, Foucault claims, are the domain of power, which he had explored throughout his genealogical period, whereas ethics is the domain of how subjects relate to themselves or how they transform themselves. To approach one’s own life ethically is, for Foucault, to see one’s existence as an aesthetic project. This notion of the self as a work of art, or as something that the subject makes, was, for Foucault, refreshingly opposed to the modern, social science or psychoanalytic notion of the self as something inherent, to be discovered or deciphered. In writings from his final or ethical period, Foucault includes diet among the techniques of the self through which one may cultivate an ethical relation to oneself. Thus, although diet may be a target of disciplinary power, or may be imposed on subjects from without according to unchosen norms, it may also be a way that subjects cultivate their lives aesthetically, transforming themselves in self-chosen ways.

In an interview from this period, Foucault contrasts the ancient Greek preoccupation with controlling diet to the modern obsession with sex. “[S]ex is boring,” Foucault says and notes that the contrary view is a relatively recent one:

[The Greeks] were not much interested in sex. [Sex] was not a great issue. Compare, for instance, what they say about the place of food and diet. I think it is very, very interesting to see the move, the very slow move, from the privileging of food which was overwhelming in Greece, to interest in sex. Food was still much more important during the early Christian days than sex. For instance, in the rules for monks, the problem was food, food, food. Then you can see a very slow shift during the Middle Ages when they were in a kind of

equilibrium. . . and after the seventeenth century it was sex. (1983, p. 229).

Foucault makes a similar point in *The Use of Pleasure*, when he notes of the ancient Greek texts that he is analyzing: “there is a limited space given to the problem of sexual relations compared with that according to exercises, and especially to food.” (p. 114).

Although sex was of less interest than food for the ancient Greeks, eating and sex were considered similar kinds of activities and were approached in closely related ways. As Foucault writes, “This association between the ethics of sex and the ethics of the table was a constant factor in ancient culture. One could find countless examples of it” (p. 50). To take but the two most prominent examples, Plato would liken eating and sex in so far as nature makes both acts intensely pleasurable – and thus liable to abuse – in order to ensure that animals engage in them (Foucault 1990, p. 49). Aristotle would argue that one could only be accused of abuse with respect to eating and sex as these are pleasures involving the sense of touch; in contrast, one would not be considered guilty of self-indulgence for delighting in aural or optic pleasures or for passing up sex and a meal to appreciate a sunset or a musical performance (p. 40). Sex and eating are thus alike in that they are corporeal pleasures that risk being overindulged, and this made them critical ethical matters for the ancients, since their ethical thought was largely preoccupied with the virtues of moderation and self-mastery. The intense pleasures of food and sex threatened these virtues, thus posing considerable dangers to the good life.

In the “Dietetics” section of *The Use of Pleasure*, Foucault analyzes a number of ancient Greek “regimens” that provided guidelines for navigating the dangers of food and sex. Foucault notes that a regimen was a “manual for reacting to situations in which one might find oneself, a treatise for adjusting one’s behavior to fit the circumstances” (p. 106). Once again, food and sex are treated in identical manners in these regimens, along with exercise, baths, emetics, vomiting, and other bodily evacuations. Foucault notes that such regimens are not universal codes about how everyone should act. They remain

contextual; while the regimens suggest increasing or decreasing the frequency of sex in certain seasons, or eating boiled versus roasted foods, they do not forbid or prescribe any particular foods or food combinations or any particular sex acts or sexual partners. They do not say that any kind of sexual relation or cuisine is abnormal, unnatural, immoral, or forbidden, and they do not specify what a “decreased” or “increased” amount of sex or eating means, as this would depend on the individual (his or her age, sex, health, and other activities). In these ways, the “dietetics” of the ancient Greeks were very different from the Christian codes of sexual morality that would follow, or, to take an alimentary example, from Kosher laws. What this suggests to Foucault is that subjects might approach sex – and by extension, food, drink, and other aspects of corporeal life – in a manner that allows them to manifest autonomy and to cultivate self-mastery rather than submission to disciplinary power. Moreover, these texts demonstrate that subjects might experience their sexual and alimentary lives in ways that are not structured by universalizing codes, prohibitions, prescriptions, or notions of normalcy.

When Foucault interprets these “dietetics” texts, and although he notes the relatively little space given to sex as opposed to food in them, it is the statements about sex that interest him. Thus, despite the space given to dietary regimes in his penultimate book, it seems that Foucault was interested in this example primarily because it was the context in which sex was written about in this era and because it demonstrated the contingency of our own interest in sex. As he writes, the example of the Greeks makes us ask of the contemporary era: “Why this ethical concern – which, at certain times, in certain societies and groups, appears more important than the moral attention that is focused on other, likewise essential areas of individual or collective life, such as alimentary behaviours or the fulfillment of civic duties?” (p. 10). It is thus significant to Foucault that food was once the focus of a complex set of restrictions and inspired a greater discursive interest than did sexual activity since he thinks that this is in marked contrast to the modern

West, in which sex rather than food became the privileged site of moral restriction, scientific inquiry, and individuating reflexivity. Readers are left with the question of whether Foucault is correct in this assertion or whether diet has not returned as a significant site of both the disciplining of individuals and ethical self-transformation. As shall be seen in the following sections, contemporary food scholars have cast these assumptions of Foucault's into doubt.

Foucauldian Food Studies

In the last dozen years, a burgeoning body of scholarship has emerged that draws on Foucault's works in order to critically examine nutritional and psychiatric scientific claims about diet and to develop Foucauldian approaches to dietary practices and food ethics. In the following two sections, a non-exhaustive overview of writings in these areas will be provided.

Power/Knowledge: The Nutritional and Psychiatric Sciences

In *Food, Morals and Meaning: The pleasure and anxiety of eating* (2000/2006), John Coveney provides a Foucauldian genealogy of nutritional science. Much as Foucault provided accounts of the emergence of human and medical sciences such as criminology, psychiatry, and psychoanalysis, so Coveney approaches nutritional science from a critical historical perspective. The sciences that Foucault examined began within but then expanded outside of disciplinary institutions of confinement; likewise, Coveney explains that studies of dietary requirements began within nineteenth-century workhouses and prisons, then emerged in anti-medical health movements such as the Whole Foods movement, and were finally incorporated into medical science and practice through the discoveries of calories and vitamins. Knowledge of nutritional requirements was important within disciplinary institutions in order to determine the minimum amount and quality of food that could be fed to inmates while still maintaining the institution as a deterrent; the food had to be worse in quality

and quantity than what the majority of the poor ate outside of these institutions. Later, when it was concluded that inmates in workhouses were for the most part "deserving poor" and children, food quality and quantity were regulated less as a deterrent than to serve a rehabilitative function (p. 66).

Coveney demonstrates that the study and regulation of nutrition not only emerged within disciplinary institutions but are deeply embedded in biopolitics, which, as Foucault defines it, is the management of populations by the state and state institutions (Foucault 1978). To give but two examples of biopolitical investments in diet, nutrition became a political concern when state organizations considered how the poor could be made to eat in more cost-effective ways (p. 61) and when widespread malnutrition was associated with a dearth of recruits who met the physical stature requirements to serve in the Boer War (p. 78). While in several works (Foucault 1978, 2003, 2006), Foucault examines the manners in which disciplinary institutions interacted both antagonistically and collaboratively with the institution of the family, Coveney shows that biopolitical concerns for the health, able-bodiedness, and longevity of the population justified biopolitical and disciplinary incursions into the family in order to promote nutritional diets. Finally, just as Foucault shows that scientific or pseudoscientific knowledge has often been deployed for the purposes of moral or social hygiene, so Coveney examines the ways that nutritional science was, from the start, deeply entangled with morality: excessive, wasteful, unhealthy, sweet, rich, and fattening foods were considered "bad" (especially when fed to children) and "good" eating was associated with a thrifty, restrained, and wholesome diet. While Coveney considers the moral dimensions of eating in terms of such notions as waste, excess, and health, he neglects to consider the ways that nutritional science has been used to promote and to resist other ethical dimensions of eating; most notably, Coveney fails to consider moral concerns about nonhuman animals and the environment that arise when the biopolitical (nutritional, economic) advantages of eating

their flesh and secretions are under consideration. He does not explore the ways that scientific claims about nutrition have been deployed both by those who advocate for the eating of animals and by those who resist this diet.

In contrast to Coveney, Richie Nimmo has recently offered an extended Foucauldian analysis of the politics of nutritional science surrounding one particular food product – milk – that accounts for the ethics and politics of human relations with other animals. In *Milk, Modernity, and the Making of the Human: Purifying the Social* (Nimmo 2010), Nimmo provides a genealogy of milk. Genealogies, in Foucault's sense of the word, are histories that oppose teleological or universalizing accounts of an historical phenomenon. Friedrich Nietzsche's *Genealogy of Morals*, for instance, resists the view that morality has always been – and thus will always be – utilitarian. Foucault's *History of Madness* and *Discipline and Punish* resist the views that the prison and the asylum, though recent phenomena, are the ends of a history of progress with respect to madness and crime. In each case, whether considering morality, madness, or crime, genealogies make the currently dominant views of these phenomena seem contingent and strange. Nimmo accomplishes a similar defamiliarization with respect to milk.

Although milk is now widely believed to be a normal, pure, healthy, and clean drink and an essential part of a balanced human diet, consuming dairy products derived from other mammals is in fact strange. After all, mother cows produce milk for baby cows, and if adult animals, including humans, do not drink the breast milk of their own species, why would it be natural or normal for adult humans to drink the mother's milk of another species? Despite this fundamental oddness, drinking cow milk has come to seem like a natural thing for humans to do, and dairy is widely seen as an essential part of human nutrition or of the “food triangle.” Nimmo's history shows how recent, contingent, and scientifically managed these intuitions are. Because milk spoils quickly and is easily contaminated, prior to the invention of railways and refrigeration, it was in fact very difficult for city dwellers to obtain milk

that was not contaminated and spoiled. Because milk was closely associated with the nursing of infants, it was also seen as an infantile and feminine food, not a food for adults and especially not for men. Moreover, milk was (correctly) considered toxic, given that it carried tuberculosis from cows to humans. Health campaigns made matters worse for dairy farmers by advertising the fact that feeding cow milk to human infants was associated with high infant mortality rates, further entrenching the view that bovine milk was not meant for humans. Milk was also treated with suspicion as it was frequently watered down by farmers and merchants. Attempts to regulate the butterfat content of milk met with a natural resistance, since it treated milk like a commodity that farmers rather than cows produced, when in fact butterfat content varies widely even with the milk of a single cow, and prior to scientific interventions into dairy farming, farmers could do little to assure the fat content of the milk they sold. Nimmo thus shows that milk was an exceedingly difficult food to standardize, to make safe, and to convince the public to drink. Far from being a natural beverage, an extensive disciplining of cows and farmers as well as extensive propaganda was necessary before the consumption of milk could be normalized.

In “Abnormal Appetites: Foucault, Atwood, and the Normalization of an Animal-Based Diet” (Taylor 2012), I, like Nimmo, have engaged with modern medical discourses on diet while accounting for the moral stakes of these discourses for other animals. This article considers the ways that both psychiatric discourses on mental health and medical discourses on nutrition have promoted a meat, egg, and dairy-based diet in manners that pass off social norms as science. It suggests that eating animals has become a norm such that vegetarianism is perceived as “abnormal,” and abnormality, as Foucault has shown (2003), has been associated by the psychiatric sciences with mental illness. This, in turn, makes vegetarianism an undesirable subject position to occupy. This argument is pursued through an analysis of literary representations of vegetarianism and psychiatric discourses on “Orthorexia Nervosa,” a newly coined eating disorder characterized by “obsession” with “righteous” eating.

Alimentary Identities and the Ethics of Eating

In “Foucault Goes to Weightwatchers,” Cressida Heyes agrees with earlier feminists that the practice of weight-loss dieting is well understood as an instance of disciplinary power or is a practice that women impose on themselves in their strivings to achieve a (hetero)normatively attractive and appropriately docile, feminine body. Heyes expands upon this argument, however, by observing the ways that dieting may not only be debilitating but may also increase skills and capacities, providing a sense of self-mastery and achievement for the dieter. Heyes thus insists that women do not diet simply because they suffer from false consciousness, as a Marxist analysis would have it, but because they find the self-development and skill-cultivation aspects of dieting enabling. Heyes also observes that weight-loss programs are clever at picking up on these attractive aspects of dieting, deploying a language not so much of self-discipline as of self-care. In this way, the marketing strategies of dieting organizations resonate as much with the texts that Foucault analyzed in the final period of his writing as with his genealogical studies.

Despite making these points, Heyes ultimately argues that women should be wary of how the discourse of caring for the self is being used in the diet industry in the service of what remain highly normalizing practices. Heyes thus suggests that women should find activities that fulfill the need for the skill-enhancing and self-transformative aspects of weight-loss dieting, even while rejecting weight-loss dieting itself. One way that former weight-loss dieters (including dieters with eating disorders) have done what Heyes suggests is by taking on a nonnormative diet such as veganism or raw foodism (see, for instance, Gena (2011)); in such a way, the dieter obtains the same sense of satisfaction from working on herself as she derived from weight-loss dieting, demonstrating self-mastery and developing new skills (such as new culinary skills), but her efforts are not doomed to failure – as is almost inevitably the case for weight-loss dieters (Heyes 2006, p. 145) – and are not “recycled back into disciplinary practices” (Heyes 2006, p. 138). On the contrary, the former weight-loss

dieter who switches her alimentary regime to raw foodism or veganism cares for herself while defying social and alimentary norms such as speciesism.

Although, in her Foucault-inspired study of contemporary food culture, Elspeth Probyn has dismissed vegetarianism by saying it is a morality rather than an ethics in Foucault’s sense of these terms (Probyn 2000), Joseph Tanke and I have both disagreed, demonstrating that vegetarianism can indeed be understood as ethical practices of self-care and moreover that morality and ethics need not be opposed for Foucault (Tanke 2007; Taylor 2010). Both authors note that vegetarians take on dietary regimes less to conform to universal moral codes than to become the kind of person they wish to be. Similarly, I have argued that resistance to vegetarianism is about aesthetics rather than a failure to be convinced by moral arguments. Vegetarianism – like other alimentary identities – is not something that one does, Tanke and I have argued, but is something that one is, or aspires to be, and that one makes of oneself through alimentary self-fashioning practices. While one can practice alimentary identities other than vegetarian ones, in “Foucault and the Ethics of Eating,” I argue that Probyn’s example of a carnivorous diet exemplifies what Foucault deems a “disgusting” ethics (Taylor 2010, p. 79); this is because, like the “virile” Greek ethics that depended on the submission of free women, boys, and slaves, eating animals fails to account for the pleasures of others.

Summary

This entry has examined a handful of statements that Foucault made about diet, as well as his suggestive discussion of alimentary dietetics. It has also presented some of the ways in which contemporary food scholars have taken up Foucault’s work in order to discuss a range of alimentary phenomena, including discourses of the nutritional and psychiatric sciences, the practices of vegetarianism and veganism, and weight-loss dieting.

Cross-References

- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Food Security](#)
- [Food-Body Relationship](#)
- [Gustatory Pleasure and Food](#)
- [Meat: Ethical Considerations](#)
- [Punishment and Food](#)
- [Vegetarianism](#)

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Free Trade and Protectionism in Food and Agriculture

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Synonyms

Mercantilism; Open markets; Trade liberalization; Trade policies

Introduction

Debates between advocates of free trade and those who favor more protectionist policies seem particularly charged when the topic is international trade in food and agricultural products. World Trade Organization (WTO) discussions of the Doha Development Agenda (DDA) appear to be dead in the water largely as a result of differences over global rules to govern agricultural trade. The agricultural provisions of the North American Free Trade Agreement (NAFTA) caused a great deal of consternation in all three countries, and many of the most intractable trade disputes brought to the WTO concern food and agricultural issues (Hobbes 2014; Levidow 2014a, b). The controversies surrounding free trade and protectionism for agricultural goods are part of wider debates about the effects of trade on economic well-being and the best way to organize global economic relations. For some, international trade and globalization undermine the rights of workers, thwart efforts to protect the environment, and lower the prospects for economic growth and prosperity in low-income countries (see McArthur and Tucker 2010; Bybee 2008; Zepp-LaRouche 2008). From this perspective, it is not so much trade itself that is the problem but rather the negative impacts of trade that are seen as unethical. Most economists, on the other hand, believe that international trade is a positive-sum game (if it were not the case that

both parties benefit, they would have no incentive to trade) and that trade is essential for economic growth and development (see Shahbaz 2012; Arif and Ahmad 2012; Nannicini and Billmeier 2011; and Marelli and Signorelli 2011). From this perspective, free trade allows people to exercise basic freedoms and is therefore of direct ethical value. In addition, to the extent that trade contributes to greater well-being, it is also instrumentally valuable because of the consequences it generates.

Even for those who believe that an open world trade system is beneficial, however, disagreements about the details of such arrangements are common. When it comes to food and agricultural trade, the diverse points of view often lead to political polarization. The purpose of this entry is to investigate arguments about free trade and protectionism with special emphasis on ethical issues related to international trade in food and agricultural products. The discussion begins with a review of the eighteenth- and nineteenth-century debates about the English Corn Laws which featured many of the arguments still invoked in modern discussions of free trade and protectionism. In the following sections of the entry, an attempt is made to define both concepts more precisely and to introduce ethical arguments about free trade and protectionism in the food and agricultural sectors.

The English Corn Laws

One of the most famous debates about free trade and protectionism was occasioned by the British “Corn Laws” designed to regulate grain imports and exports. As far back as the 1600s, regulations on grain trade had been implemented in an effort to keep prices high enough to satisfy farmers but not so high as to cause extreme hardship for the poor (Schonhardt-Bailey 2006). Cain and Hopkins (1980) argue that through the eighteenth and early nineteenth centuries, agriculture was the dominant economic sector in England, and the landed gentry were successful in directing government intervention toward protection of their

interests. At that time, England exported grain and the primary policy intervention was a type of export subsidy known as a “bounty.” In *The Wealth of Nations*, Adam Smith included a “Digression Concerning the Corn Trade and Corn Laws” in a chapter on the negative effects of bounties and the benefits of free trade (Smith 1976/1776, vol. II, pp. 29–52). He argued that government interference with trade was the real cause of famines, food shortages, and high food prices. Grain was generally viewed as a “wage good” by the classical economists suggesting that the wages needed for workers to sustain themselves were largely determined by grain prices. Bounties and import duties, both of which raise domestic prices, thus tend to force employers to increase the nominal wage to maintain real subsistence wage levels in the manufacturing sector forcing them to charge higher prices for their output. For Smith, this made British manufacturing less competitive internationally.

By the beginning of the nineteenth century, England had become a net importer of grain, and grain prices were being driven down by cheap imports. In 1815, a new Corn Law was enacted limiting grain imports when prices in England fell below a certain level (Schonhardt-Bailey 2006). In his *Essay on the Principle of Population*, Thomas Malthus (2004/1798) had already expressed disagreement with Smith noting that if economic expansion took place only in the manufacturing sector while the agricultural sector continued to generate a fixed amount of output, food prices would increase and real wages would fall. For Malthus, the only way to raise standards of living was to invest in agriculture. In a short essay on the 1815 Corn Law, Malthus (1814) returned to these themes, taking issue with Smith’s contention that while bounties or import duties might raise the nominal price of grain, its real price would be unchanged as a result of the effects of the grain price increase on wages and the subsequent impact of higher wages on the prices of all other goods. Because real prices are what drive producer decisions, Smith argued that the trade policies would have no effect on grain output. For Malthus, allowing

cheap imported grain would mean the decline of British agriculture and, because of the centrality of agriculture in the wealth of the nation, reduced economic growth and prosperity. Malthus recognized the disadvantages of import restrictions including inefficiencies in resource allocation, reduced international competitiveness, lowered population growth resulting from higher food prices, and the administrative costs of restrictive trade policies. He concluded, nevertheless, that the new Corn Law would benefit the English economy.

Malthus's position was not shared by other economists of the time, most notably David Ricardo who provided one of the first full developments of comparative advantage, a concept that plays a central role in economic arguments in favor of free trade (Blaug 1978). In the first half of the nineteenth century, British agriculture experienced increased competition from imported grain, and the landowners began to lose some of their political influence (Cain and Hopkins 1980). Schonhardt-Bailey (2006) traces the rise of the Anti-Corn Law League from its beginnings in 1836 to its eventual triumph in 1846, when the Corn Laws were repealed and free trade became the dominant ideology in England. The classical economists from Smith (1723–1790) to Karl Marx (1818–1883) saw economic output as the product of three factors of production, land, labor, and capital, each of which was associated with a particular social class, landlords, workers, and capitalists. In a sense, Malthus remained a defender of the landed aristocracy, while Smith and Ricardo pinned their hopes on the rising capitalist class and Marx, of course, thought of himself as the defender of the proletariat. The great debate over the Corn Laws in England pitted the interests of the landlords against those of the workers and capitalists, and whether one was a protectionist or an advocate of free trade depended, at least in part, on which social class one favored and which interests would be advanced or impaired by international trade. Political and economic interests continue to play a prominent role in trade policy debates.

Free Markets and Free Trade

Most economic activity takes place in domestic markets which bring together local suppliers and consumers to engage in what Adam Smith described as the natural propensity of human beings to “truck, barter, and exchange one thing for another” (1976/1776, vol. I, p. 17). International markets are an extension of domestic markets, and the idea of “free trade” is similarly an elaboration of the notion of “free markets.” Most arguments in favor of free markets are based on the expected material benefits that arise from their greater efficiency compared to other economic arrangements (e.g., central planning) and the fact that the alternatives generally restrict individual rights and freedoms (Capaldi 2004). Buchanan (1988) reviews various ethical arguments in favor of free exchange and notes that these arguments are often intertwined with the efficiency claims. For example, it might be argued that the ethical dimensions of market systems derive from the fact that they allow individuals to freely express their preferences and to make use of their property as they wish (Gibbard 1985). Such arguments from individual freedom are tied to efficiency through the supposition that free individuals are capable of making choices that will lead to the best use of resources and the greatest economic benefit for themselves as well as for the society in general and that they will do so if given the chance. Sen (1985) agrees that markets may have practical value but finds suggestions that free exchange assures the exercise of individual rights problematic. After all, the extent of a poor person's rights in free markets is clearly less than that of another person with greater resources and markets are incapable of evening out such differences. If one believes that the rich person deserves her relatively greater opulence, it may be possible to see such market outcomes as justifiable. But, of course, many wealthy people owe their good fortunes to luck, coercion, dishonesty, or theft rather than hard work and talent, making it difficult to support the libertarian argument that whatever outcome is generated by the market is fair.

McClosky (2007), on the other hand, argues that markets promote individual virtues and a capitalist system based on free markets and private property not only makes everyone wealthier but also causes people to behave with greater virtue. McClosky is arguing against those who believe that there should be extensive market regulation, perhaps even the complete socialization or collectivization of markets, to prevent an unwelcome outcome such as highly unequal income distributions or environmental damage. It is important to recognize, however, that markets are never completely free of all regulation. In fact, an institutional framework that includes laws related to property rights, contracts, fraud, and so on is needed for markets to function at all (Acemoglu and Robinson 2012; Stiglitz 2013). Such laws can never be entirely neutral with respect to the particular individual interests that are favored making market institutions inherently political. Market anarchists believe that the political nature of governments' control of the creation and enforcement of legal institutions makes them oppressive and argue that the state should be replaced by voluntary interactions such as those in unregulated markets (Molinari Institute 2013). Most, however, appear to believe that some set of legal institutions is a necessary prerequisite for a well-ordered market economy (Olson 2000). Acemoglu and Robinson show that the types of political and economic institutions that are established in a country are major determinants of whether people in that country prosper. The importance of institutions, including those that regulate commercial activity, brings the concept of free markets into question. If some regulations are necessary for markets to function, is there a clear place to draw the line between free and regulated (or "socialized") markets?

The same question arises with respect to free trade. What kinds of institutions are compatible with free trade? For the Encyclopedia Britannica, free trade is synonymous with *laissez-faire*, an economic system that permits only limited government interference with markets (<http://www.britannica.com/EBchecked/topic/218403/free-trade>). Other sources suggest that free trade

requires only the absence of some specific set of trade barriers usually identified as import tariffs and export subsidies leaving open a wide range of economic policies that might be ruled out in a pure *laissez-faire* system (<http://www.merriam-webster.com/dictionary/free%20trade> or <http://glossary.econgur.com/economic-term/free+trade><http://glossary.econgur.com/economic-term/free+trade>). In general, these definitions all seem to point to import tariffs and export subsidies as the main protectionist policies that interfere with free trade although in some cases other types of government interference such as exchange rate manipulation or government procurement practices are also included (http://www.auburn.edu/~johnspm/gloss/free_trade). They are generally silent, however, on government actions that may indirectly influence international trade (e.g., publicly funded research, subsidies to domestic producers). They would also seem to allow trade barriers to protect against harmful goods such as import restrictions on livestock products originating in countries where foot-and-mouth disease has not been eradicated. Finally, they do not appear to rule out measures to prevent private sector participants from behaving in ways that introduce inefficiencies into the world market through the exercise of monopoly power, for example, or through practices that would be illegal in the countries in which they are based (e.g., bribery). It appears that free trade policies may allow for a wide range of government market interventions including some that may favor domestic over foreign producers.

Most advocates of free trade would not call for the complete elimination of all public policies that may affect trade but rather would stress the benefits of reducing conventional trade barriers, a process known as "trade liberalization." Palmetter (2005) reviews a number of ethical theories from utilitarianism to the non-consequentialist theories of Kant and Rawls finding that a liberal trade regime is compatible with all of these theoretical approaches. He notes that protectionism is likely to violate individual rights and harm the least well-off and points out that Kant saw trade as contributing to world peace (see also Moore 2003). Arguments against free trade often emphasize the unfairness to those who lose as

trade is liberalized. Beghin et al. estimated that elimination of the US sugar tariff in 1998 would have led to losses to cane and beet growers and sugar processors in the United States totaling about \$1 billion compared with gains to US sugar consumers of \$1.9 billion. An additional advantage of such a change – note that the tariff has not been eliminated – would have been an increase in the world sugar price of about 13 % to the benefit of sugar producers in low-income countries (Beghin et al. 2003).

Opponents of trade liberalization might argue that elimination of the tariff would be unfair because it would disrupt the lives of those who have devoted resources and effort to particular courses of action on the assumption that protection would remain in place (Palmer 2005). In the sugar case, however, consumer gains would have been sufficiently large to compensate the growers and processors while still leaving consumers better off. Even if actual compensation is not made, one might question whether the *status quo ante* was fair in the first place because it generates benefits for some at the expense of others. Moreover, the policy does this in a way that is inefficient because total benefits are less than total costs. Providing an ethical justification for the US sugar policy would require an account of why the growers and processors deserve their gains and why it is fair for consumers to be required to pay for them. It might be possible to develop such an account, but the inconvenient fact that it would be cheaper to simply transfer a billion dollars to the growers and processors from general tax revenues rather than effecting this income transfer through the trade barrier would remain.

Palmer (2005) points out that John Stuart Mill suggested compensating the landlords who lost from the repeal of the Corn Laws noting that even with compensation, there would be a net gain to England from the reform. It is almost always the case that trade liberalization leads to benefits that are greater than the costs so that those whose situation is made worse off could be compensated for their losses. Of course, compensation is not always offered to those who lose from trade policy changes, and the specific

effects such changes may generate will depend on the particular measures that are put in place. For example, trade agreements such as NAFTA or the Uruguay Round agreement of the WTO often include provisions related to direct foreign investment, intellectual property, environmental concerns, and much more. Worries about such agreements may have less to do with tariffs and trade than they do with broader concerns about economic justice or environmental protection. In fact, opposition to the international economic organizations (WTO, International Monetary Fund, World Bank) often seems more an expression of uneasiness about capitalism and the undermining of national sovereignty than a worry about trade or international finance as such (Peterson 2014; Frank 2007). Proponents of free trade may also be using trade as a symbol to support their belief in the benefits of globalization. It sometimes seems that “free trade” has become a slogan that serves as shorthand for competing visions of the best way to regulate global interactions. Zepp-LaRouche (2008) speaks of the “...obvious bankruptcy of murderous free trade,” while Bhagwati (2011) claims that free trade not only brings greater prosperity but greater equality and world peace as well.

Protectionism

In many respects, protectionism is a more precise concept than free trade. The Encyclopedia Britannica defines it as the use of trade barriers to shelter domestic industries from foreign competition (<http://www.britannica.com/EBchecked/topic/479643/protectionism>). As in the case of free trade, exactly what constitutes a trade barrier is subject to debate. For example, publicly funded agricultural research can lead to innovations that lower costs for domestic producers giving them a competitive advantage vis-à-vis foreign firms. For this to constitute protectionism, however, foreign and domestic firms must be treated differently, and this would not be the case if the cost-reducing innovations are made available to all. Prior to the rise of free trade in the eighteenth and

nineteenth centuries, the dominant economic policy in Europe, known as mercantilism, was highly protectionist. Mercantilist thinkers believed that the more gold a nation could accumulate, the wealthier and more powerful it would be. To increase the inflow of gold, mercantilists argued for increased exports and restrictions on imports. Imports of raw materials for use in manufacturing were permitted, but the overall goal was to use government policies to assure a trade surplus that would increase the nation's holdings of gold (Blaug 1978). As a general policy, mercantilism is obviously incoherent: it is impossible for all countries to have trade surpluses at the same time. Adam Smith and later economists did much to discredit this doctrine, but the view that exports are desirable because they earn money and create jobs while imports are undesirable because they cost money and displace workers lives on in many policy debates today (see Scott 2007).

At the same time, there is a kind of asymmetry in discussions of protectionism. The basic definition focuses only on protection of domestic firms and industries. Protecting the health of consumers, livestock, or ecosystems seems generally to be considered an appropriate use of government power, while protecting private industries is not. In its efforts to reduce protectionism, the WTO has become embroiled in a host of contentious issues related to ambiguities about the actual agents being protected by a particular policy. For example, as conventional tariff and nontariff trade barriers have been reduced, governments have increasingly turned to alternative measures such as technical standards that may have the same effect as the original trade barriers but that can be justified on the grounds of consumer or environmental protection. The European Union (EU) defends its ban on imports of livestock products from animals raised with hormone supplements as a consumer protection policy, while Canada and the United States have always maintained that the intent of this policy is to protect EU livestock producers from foreign competition (Hobbes 2014). The WTO Agriculture Agreement includes provisions for the reduction of agricultural subsidies that could lead to hardships for farmers in countries with

agricultural sectors that are relatively uncompetitive internationally. Some of these countries (Japan, Korea, Switzerland, and Norway) note that farming generates external benefits (e.g., viable rural communities) for which farmers are not compensated arguing that domestic subsidies should be allowed under WTO rules to compensate farmers for these positive contributions (Adam 2014). Although policies of this nature would have the same effects as more conventional protectionism, they are thought to be justifiable not because they protect the domestic industry but because they represent legitimate compensation for services provided. It is notable that advocates of this position rarely draw attention to the negative impacts of farming (pesticide and fertilizer runoff, soil erosion and reduced biodiversity, for example) which may be of greater social value than the alleged positive contributions.

An early argument for protectionism embraced by Alexander Hamilton in the United States and Frederick List in Germany was that newly established industries, like children, needed protection until they are mature and able to compete with established industries overseas (Melitz 2005). Melitz shows that under fairly restrictive conditions, national welfare may be advanced by protecting infant industries but argues that only new industries with the clear potential to be able to achieve the needed efficiencies rapidly should be considered for this protection. In many cases, government protection has resulted in industries that remain inefficient unable ever to compete without the protective trade barriers. Many developing countries pursued industrialization strategies based on import substitution, a policy that restricts imports to allow a domestic industry to become established without being undermined by foreign competition. While these strategies did contribute to some industrialization in low-income countries, they have not proved to be effective strategies for industrialization, growth, and development because domestic markets are usually too small to support large-scale industries. The typical effect has been higher prices for consumers, lower quality consumer and intermediate goods,

industries dependent on government support for their continued existence, and severe balance-of-payments crises as resources are diverted from export industries in which the country has a comparative advantage to uncompetitive domestic firms.

A common rationale for protectionism is that it supports domestic employment. Shortly after the 1929 stock market crash, the US Congress raised tariffs in a misguided effort to preserve jobs. The Smoot-Hawley tariff of 1930 had little effect on employment as other countries retaliated by raising their trade barriers so that US imports and exports both fell (Irwin 2002). Despite much evidence to the contrary, many still believe that imports cost jobs and call for trade barriers to protect domestic employment, particularly in times of economic downturn. It turns out, however, that trade barriers can actually cost the economy jobs by raising the price of imported goods that are inputs for other industries. US sugar prices are usually higher than world prices as a result of the tariff, making US candy producers and other industries that use sugar as an input less competitive. Irwin (2002) cites the example of a candy company in Chicago that was forced to move its production facilities to Canada because of the high US sugar prices at the cost of 3,000 US jobs. There is virtually no evidence that protectionism can lead to a net increase in jobs or that it lowers unemployment rates.

In recent years, numerous individuals and groups have responded positively to calls to slow globalization often seen as a process that causes harm to the environment, workers' rights, economic growth and development in low-income countries, traditional food systems, and much else. As a central component of globalization, trade is often seen as particularly suspect because of its ties to commercial activities and global capitalism. Irwin (2002) suggests that the underlying concern of many of the groups opposing trade is actually their distaste for modern, industrial capitalism seen as driven by the profit motive rather than by more noble objectives such as environmental sustainability or poverty alleviation. As the world economy has become more

turbulent, some economists have embraced criticisms of trade and globalization primarily because of the way they are being managed (Stiglitz 2013). Joseph Stiglitz, 2001 Nobel Laureate in Economic Sciences, and others have noted that the benefits of liberal trade are often not widely dispersed in countries with deficient economic and political institutions with the result that free trade may actually make the poor worse off. Stiglitz does not oppose international trade as such but rather sees the way global markets are managed by firms and governments working through international trade agreements as biased in favor of large corporations and wealthy people in high-income countries. This is not so much a call for protectionism as recognition that markets will always be regulated in some fashion and that the particular regulations chosen can be structured to favor certain groups at the expense of others. For Stiglitz, the way current global institutions are set up is wrong because they favor the wealthy while harming the poor. Some might argue for trade restrictions on the grounds that global institutions will always be established by those with economic and political power so that international trade cannot but be biased against those who lack the power to influence the rules of the game.

Summary

There is a long history of conflict between those who believe that free trade is essential not only for economic prosperity but also for the exercise of individual freedoms and those who see international trade as a threat to their personal economic interests or traditional ways of life. Those in the latter group often feel that measures to protect domestic industries from foreign competition are necessary to maintain employment and to prevent global interference with vibrant local communities. Protectionism is always about protecting particular groups from the consequences of international trade and, as with earlier debates about the British Corn Laws, whether one favors or rejects protectionism in a particular case depends on beliefs about how favored groups or

causes, including those concerned with such considerations as the environment or social justice, will be affected by trade. In general, protectionism is an inefficient way to direct economic or other types of benefits toward favored groups or causes because it generates broad social costs that are almost always greater than the value of the benefits diverted to the favored group or cause.

For others, the freedom to engage in economic activity is part of individual entitlements and protectionism violates this basic right. Beyond the importance of trade for individual freedoms, open markets tend to lead to beneficial consequences for economic growth and development, and these effects have given rise to calls for free trade. But the concept of free trade is ambiguous because markets are always regulated in some fashion. If they are not regulated by governments, they will be regulated by private firms or organized crime (see Olson 2000). Assuming that governments and international organizations establish the rules and regulations governing international markets, it may not always be entirely clear why some kinds of protectionist policies (e.g., protecting consumers from harmful or dangerous products) are deemed legitimate while others are not. The WTO and other international organizations often must confront such questions particularly when it is unclear whether a protectionist trade measure is aimed at preventing harm to consumers or the environment or, on the contrary, is really designed to shelter firms from foreign competition. Finally, the particular institutions chosen to govern global markets influence the distribution of economic costs and benefits among various agents. Some institutional arrangements may be deemed unethical because they violate common norms of distributive justice. In such cases, however, it could be argued that it is really the institutions that are unethical rather than international trade per se.

Cross-References

- [Canada, US-EU Beef Hormone Dispute](#)
- [EU Regulatory Conflicts over GM Food](#)

- [Fair Trade in Food and Agricultural Products](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Multifunctionality of Agriculture and International Trade](#)
- [The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement](#)
- [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Functional Foods

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Synonyms

Enhanced foods; Fortified foods; Nutraceuticals

Introduction

In the most basic sense, all foods are functional. Specifically, all foods serve some function in the body: they provide energy, nutrients, micronutrients, water, or fiber necessary to maintain and promote life. However, *functional foods* are a subset of foods – one could also think of them as a category of foods – that are considered by many to have properties that make them especially potent in promoting maintenance of a healthful life. These foods are typically characterized by the addition or enhancement of a biologically active ingredient understood to promote health and often appear to dance between food and medicine.

A variety of political factors, social trends, and technological innovations have shaped the creation of the contemporary category of functional foods. This food category first originated in Japan during the mid-1980s as part of a state-sponsored research project that sought to analyze, characterize, and improve the nutritive properties of foods. That research resulted in a new, state-recognized, state-regulated, and state-defined food category. Unlike traditional foods, or even fortified foods, these new functional foods were created and engineered with the express aim of addressing specific health concerns.

In many ways it is easier to give examples of functional foods than to define them. One familiar example for much of the United States and Europe is margarine with added phytosterols (compounds isolated from plants). On-package copy and advertising inform consumers that consumption of this product can help lower cholesterol. This product's existence is made possible by the confluence of a variety of governmental regulations, technological innovations in biomedical and agricultural research, public and private institutions, and corporations. The joining together of these disparate groups highlights the variety of ethical concerns surrounding functional foods. This entry first briefly situates the development of the concept of functional foods, discussing the difference between historical understandings of foods as functional and the contemporary conception of functional foods. Next, this entry examines the variety of ethical concerns surrounding functional foods. These concerns include issues of:

- Production (How are these foods produced?)
- Regulation and communication (What impact does government regulation have?)
- Access (Who has access to these foods?)
- Efficacy (Do these foods work?)

Situating Functional Foods

Humans have long understood foods as promoting health or preventing illness. For example, Galen and his followers viewed foods as regulating the humors of the body, proscribing specific diets for specific personalities and ailments. Followers of Paracelsus believed that nature's

bounty of plants, minerals, and animals contained hidden remedies for disease. Nineteenth- and twentieth-century discoveries of vitamins demonstrated that unseen components of foods could dramatically affect human health. Functional foods build on these ideas, with a centralizing belief that one can consume specific foods with specific components for specific ailments, as either curative or preventative.

However, unlike previous iterations of the food as medicine trope, functional foods are built on twentieth-century technological innovations in agriculture, biological medicine, food production technologies, and new forms of legal regulation. Functional foods make explicit an underlying change in the conception of food itself, from that of a whole to that of something built up of constituent parts (Mudry 2009; Scrinis 2008). For some, this marrying of the natural and technological into innovative food forms calls for additional scrutiny. How do we know that these foods will not harm us? How are these foods being produced, and at what costs? For others, the new regulatory frameworks that allow food corporations to take up the task of educating consumers about their bodies and health call for further examination. Are these regulations adequately protecting consumers, or are they promoting big business and quarterly profits without regard to consumer health? Finally, others question the ways that these health-promoting foods are available, noting the premium prices often attached to these foods. Are these foods recreating and expanding the health gaps between the haves and the have-nots?

Producing Functional Foods

Functional foods are founded on technological innovation. Without the analytical technologies of the engineering, chemical, and biological disciplines (e.g., physical chemistry, organic chemistry, cellular and molecular biology, clinical medicine, packaging technologies, food science), these foods cannot exist. These scientific approaches make possible the extraction and

analysis of plant and animal-based compounds. In general, compounds are analyzed for potential biological activity in the body, either by academic scientists working at universities under public or private funding or by in-house or external laboratories working for the pharmaceutical or food industries. Although taken alone these technologies exist in a sort of ethical non-place (i.e., they are neither good nor bad), these technological innovations raise a variety of questions. For example, how is technological innovation applied to biological organisms? What role do genetic engineering and modification play in this creation of new foods? Who funds this innovation? Who ultimately profits from it?

From the functional food perspective, genetic engineering and modification can facilitate the production of biologically active compounds – molecules that “do stuff” in the body. Genetic engineering often seeks to either (1) increase (or decrease) naturally occurring compounds or (2) introduce new genes into already existing systems. These transformations carry a (perhaps undeserved) heavy burden of risk – what unintended consequences accompany introducing new genes into a species? In addition to the short-term benefits of increasing production of certain compounds, what other sorts of larger ecological risks may be present? These could include loss of native plant populations and increased risk for plant disease due to accidental activation or suppression of other genes. At the same time, genetic engineering offers a variety of potential benefits: decreased use of pesticides, new business opportunities, increased crop value, positive changes for human health, and beyond.

Not all functional ingredients come from genetically engineered sources. Many are naturally occurring – familiar examples include omega-3 fatty acids from fish oils, phytosterols found in soy, and flavanols found in grape skins. Naturally occurring functional ingredients are especially exciting in that they potentially open new supply chains that can transform rural economies. A notable recent example is the increasing interest in the beneficial ingredients found in the

açaí fruit. The burgeoning popularity of açaí has transformed this previously “unknown” fruit: once gathered for a local population, the rise in popularity has pushed both the people who produce it and the fruit itself into worldwide market transactions and power flows. Yet as these local farmers see an increase in access to international markets, they are also faced with competition from outside investors. The example of açaí reminds us that many of the functional ingredients identified and promoted come from third-world countries or from at-risk sources, a haunting reminder of colonial extraction economies and the more recent biopiracy debates of the late 1980s and 1990s.

When asked to give examples of familiar functional foods, one likely responds with examples that are highly processed and intensively packaged. Processing can provide health benefits by making previously unavailable nutrients available. Yet it may also harm human health. Despite the considerable research into the nutritional effects of consuming certain “functional” ingredients, the reality is that we still poorly understand what a food molecule does within its larger native food matrix. The functional food paradigm of isolating compounds, reducing food down to its bare components, and remaking it into something that offers “more” can also remove beneficial micronutrients that exist in the native food. Thus, by isolating and extracting only the compounds identified as beneficial – a process which prioritizes only those compounds that can be “made visible” via measurement and testing – the current functional food production paradigm also risks the loss of other health-promoting compounds from diets that once focused on consuming whole foods.

Packaging allows producers and marketers to communicate the health benefits of functional foods to consumers. While protecting foods and prolonging shelf life, packages also threaten both human and ecological health. As recent studies of leaching of compounds from plastics previously considered “inert” demonstrate, packages themselves can affect human health in unwanted ways while also contributing to an ever-growing trash problem.

Regulating Functional Foods

For industrial producers, the ability to communicate health-related claims on packages and in advertisements to consumers is a key driver for making functional foods. Some states strictly monitor and limit food labeling and health claims, others allow a variety of claims; these regulations directly affect the market presence of functional foods. Changes to the regulatory framework around food labeling and health claims in the United States provide an especially potent illustration of how state regulation encourages or restricts functional foods.

A variety of laws influence the marketing of functional foods in the United States. The door to functional foods, as we know them, opened during the deregulatory Reagan era. In 1987 the Food and Drug Administration (FDA) began allowing companies to make health claims without first participating in premarket review (Heller 2005:171). The number of claims on food labels exploded. Understandably, this freedom to make health claims on food was a marketer's dream and a consumer advocate's nightmare. The October 9, 1989, *Business Weekly* cover summed up the era with the words "Can Corn Flakes Cure Cancer? Of course not. But health claims for foods are becoming ridiculous." By 1990, Congress responded to calls for reform from consumer advocates, industry players, and regulators by passing the Nutrition Labeling and Education Act (NLEA). The NLEA permits health claims as long as those claims "describe a relationship between a food substance and a disease" and carry the backing of "significant scientific agreement among qualified experts" regarding the validity of the claim (21 CFR §101.14). NLEA-approved claims require significant research time and money: for example, 43 human clinical trials examining the role of soy were included in the petition for the soy health claim (ADA 2009). Currently the FDA only approves 12 types of food claims. For example, the claim found on a 2009 Bolthouse Farms Heart Healthy Pear Merlot Apple Juice Blend label that "Barliv barley betafiber is a natural source of beta-glucan soluble fiber that helps

support heart health with 3 g per day, when consumed as part of a low fat, low cholesterol diet. This bottle of juice contains 1.4 g of beta-glucan soluble fiber (0.75 g per 8 oz serving)" is NLEA approved under 21 CFR §101.81, Soluble Fiber from Certain Foods and Risk of Coronary Heart Disease.

Implementation of NLEA slowed the frenzied business of making health claims on food to an ordered trickle between 1990 and 1994, with many companies removing claims completely. However, in 1994, the US Congress passed the Dietary Supplement Health and Education Act (DSHEA). DSHEA threw open the door for functional foods by allowing structure/function claims. Unlike claims permitted by the NLEA, claims for dietary supplements do not require the difficult-to-achieve status of "Significant Scientific Agreement," nor do they require prereview by the FDA. Instead, dietary supplements are allowed to make descriptive claims about how a component of a food, or an ingredient added to a food, may affect the body's structure or functions as long as the claim does not link consumption of the food with treatment of disease. These "structure-function" claims allow significant latitude in packaging and media communication as long as the disclaimer "these claims have not been evaluated by the FDA" is on the package.

The 1997 Congressional approval of the Food and Drug Administration Modernization Act further muddled the regulatory picture. This act permits the usage of unreviewed health claims as long as such claims are based on the current views expressed by the National Institute of Health, Centers for Disease Control, or National Academy of Science. Five years later, in 2003, the FDA loosened regulations by allowing qualified health claims. Qualified health claims, like DSHEA claims, do not meet the requirement of significant scientific agreement. Examples of qualified claims include claims linking green tea and risk of cancer and linking omega-3 fatty acids with a reduced risk of coronary heart disease. Currently, functional foods, depending on the health claims made and ingredients used in their manufacture, fall into the following categories: foods, foods for special dietary use, foods that

make health claims, dietary supplements, drugs, and medical foods. Since 2003, this wide swath of regulatory niches allows US manufacturers significant wiggle room in how they both label and market their products.

In contrast, recent European Union regulatory shifts have made marketing of functional foods much more difficult. The European Commission estimates that approximately 44,000 claims were initially submitted in 2008 when the commission began reviewing claims. That list was condensed to 4,600, which the European Food Safety Authority, EFSA, extensively reviewed. On May 16, 2012, the EFSA announced approval of 222 claims and the requirement that all claims not under review or authorized by the new regulation be phased out by the end of 2012 (European Commission 2012). This list is much more expansive than the US list of qualified health claims; however, in requiring that all claims undergo review, the EU has created a significant dissuasion from spurious claims. Unfortunately, this legislation and the language around the process obfuscate the behind-the-scenes political negotiations and scientific uncertainties implicit in such legislative action, potentially leaving consumers with the impression that they no longer need to critically think about the claims on packaged foods in Europe (Nestle 2007).

The differences between the US and EU approaches to regulating functional foods highlight the role that marketing plays in making a food functional. A variety of critics of functional foods note that it is marketing that ultimately transforms foods into functional foods. They argue that without the communication between package designers, graphic artists, and advertising and marketing groups, functional foods cannot exist (c.f. Scrinis 2008). This view fails to account for the variety of definitions available for the term, excluding to some extent discussion of lay appropriation of the term “functional food” or the ideas implicit therein that appear in personalized approaches to conceiving of and understanding food. However, their critiques powerfully focus a critical gaze on the role that regulatory mechanisms play in containing communication about functional foods.

Despite the underlying foundational concept of functional foods as foods with purpose, definitions from both governing bodies and professional groups vary. For example, in 1999 a European Union Commission defined functional foods as foods that:

... [are] demonstrated to affect beneficially one or more target functions in the body, beyond adequate nutritional effects, in a way that is relevant to either an improved state of health and well-being and/or reduction of risk of disease. Functional foods must remain foods and they must demonstrate their effects in amounts that can normally be expected to be consumed in the diet: they are not pills or capsules, but part of a normal food pattern. (European Commission 1999:S6).

Through this definition, EU regulators attempt to clearly mark the boundaries between foods and medicine. In contrast, the United States has no codified definition for functional foods. That work is currently left to professional groups. For example, the American Dietetic Association (ADA) argues that all foods are, on some level, functional, because all foods provide the body with necessary nutrients or other molecules that contribute to the body’s ability to survive (2009). However, for the ADA, functional foods “move beyond necessity to provide additional health benefits that may reduce disease risk and/or promote optimal health. Functional foods include conventional foods, modified foods (i.e. fortified, enriched, or enhanced), medical food, and food for special dietary use” (2009). An expert panel organized by the Institute of Food Technologists (IFT), a US-based professional group with an international membership, defines functional food as:

... foods and food components that provide a health benefit beyond basic nutrition (for the intended population). Examples may include conventional foods; fortified, enriched or enhanced foods; and dietary supplements. These substances provide essential nutrients often beyond quantities necessary for normal maintenance, growth, and development, and/or other biologically active components that impart health benefits or desirable physiological effects. (2005:6)

Although Japan has defined functional foods, use of the definition was eliminated in 1991 in favor of the Foods for Specified Health Uses

(FOSHU) system. The FOSHU system regulates functional foods separately from pharmaceuticals (Heasman and Mellentin 2001).

These definitions reveal a variety of tensions – the EU definition points to a need to define food itself, implicitly questioning when food ends and medicine begins. Both the ADA and IFT definitions allow conventional foods, such as fruits and vegetables, functional status yet point to a reductionist view of foods made up of essential nutrients that may be stripped from an original source (such as conventional foods) and added to other foods (such as fortified, enriched, or enhanced foods). It is precisely this reductionist approach to foods that allows functional foods to claim to go beyond adequate or basic nutrition and beyond necessity to a realm where food can do more than just nourish – it can potentially prevent or heal.

Unfortunately, the claims making central to marketing of functional foods creates a power imbalance between the producer/marketer and the consumer (Liakopoulos and Schroeder 2003). Lax regulatory regimes exacerbate this imbalance. No matter the regulatory climate, the burden of evaluating the truthfulness of claims ultimately falls to the consumer (Kaplan 2006). A difficult task under any circumstances, this burden of evaluation is rendered even more problematic by a general lack of scientific literacy among most populations, limited access to study results, and sensationalized media reports.

Accessing Functional Foods

Functional foods are, at least upon initial introduction to the market, primarily foods for health-conscious consumers with disposable income. This is reflected in the way these foods enter the market. Market entry for functional foods can be split into two routes of entry: that of a small entrepreneur doing product development and market introduction or that of a large food company introducing a functional food throughout its regional or national distribution chain. Given the cost of product development, many large food companies have chosen to either adopt a “wait,

see, and buy (from another company)” approach or choose to develop functional foods based on already existing functional ingredients available from suppliers. Both approaches outsource responsibility for testing the efficacy of functional foods or ingredients, a step that ultimately protects producers more than consumers.

The first approach, that of the small entrepreneur, results in functional foods being primarily introduced in highly specialized stores that sell these products at premium prices. Many of the successful functional foods on the market are sold in single serving sizes (nutrition bars, beverages, yogurts) that are not conducive to feeding a larger group. There are exceptions: pastas with added omega-3 fatty acids, for example, are routinely sold in family-friendly package sizes. However, the emphasis on individualized consumption highlights contemporary concerns with the ways that governments have shifted responsibility for health care away from a larger social safety net and onto individual consumers (Holm 2003). Assuming these foods work as stated, those who have the consumer power to access this type of individualized health care will potentially live longer, more productive lives (Landecker 2011). In contrast, those without the financial resources to access functional foods will be left behind, further increasing the gap between the haves and have-nots (Schroeder 2007). This split between haves and have-nots is reflected in the notable lack of publications on functional foods outside of the major markets of Japan, the United States, and Europe. Despite the potential for both huge market growth and for significant consumer abuse, minimal academic attention has been paid to developing markets such as Latin and South America and Africa (for exceptions, see Hasler 2005). Further complicating the haves/have-nots equation, many of the “hottest” ingredients used to make functional foods come from third-world locales. As demand for these raw ingredients and supplies grows, local ability to access these health-promoting foods often diminishes.

On the other hand, transnational corporations have the power to positively affect the health of large swaths of the world’s population through functional foods. For example, functional foods

targeted to third-world markets could deliver needed micronutrients or antiparasitic compounds to at-risk populations through already existing distribution chains of companies with a global presence. At the same time, the potential lack of regulation as these foods circulate throughout different regulatory regimes raises additional concerns about consumer protection.

Finally, much of the “pipeline” that leads to the creation of functional foods is supported by publically funded research. The knowledge gained from these studies is often transformed into patents for isolated ingredients or testing technologies that regularly make the jump into private corporate hands, leaving potential public users unable to access or use the knowledge their tax dollars helped fund. This distillation of public money into private profit is echoed in many debates about pharmaceuticals, hybrid seeds, and engineering technologies (Kloppenborg 1988).

Evaluating Efficacy

Do functional foods work the way they claim they do? This question underlies all the debates about functional foods, from the question of definitions to regulations to marketing. Evaluating the effectiveness of functional foods in affecting human health requires significant time, money, and access to study subjects willing to follow the strict diets necessary for attempting to evaluate any food. As many have pointed out, the clinical trial model, developed for testing pharmaceuticals, often obfuscates more than it enlightens when it comes to testing foods (c.f. Richardson 2012). Although specific functional ingredients can be tested outside of a food matrix, any results must be examined suspiciously given the possible interfering or synergistic nature of other foods consumed in a diet.

This inability to demonstrate effectiveness via the clinical model, especially when coupled with the short life span of many industrially produced foods (most new food products fail within the first year of introduction to market), creates an economic push for many functional food manufacturers to market their foods as dietary supplements.

As discussed above, the intrinsic differences in review processes between foods and dietary supplements, especially in the United States, mean that the labels of foods marketed as dietary supplements do not undergo the same review by regulatory agencies that other foods do. Unfortunately, this creates additional opportunities for unscrupulous, unfair, or misleading marketing, a condition that is only exacerbated in countries with weak regulatory bodies (an area that could benefit from additional academic inquiry).

With few exceptions, most functional foods remain fairly understudied in the clinical setting. This raises the additional question of evaluating safety: are these foods safe for consumption? As with all foods, and especially with dietary supplements, one must ask to what extent manufacturers follow safe practices, especially in developing countries.

Summary

Functional foods offer the exciting possibility of promoting human health. Yet they simultaneously pose a threat to consumers through misleading marketing and inadequate regulatory protection. If efficacious, functional foods, through their premium price point and limited distribution, reinforce already existing social inequalities.

Cross-References

- [Access to Land and the Right to Food](#)
- [Biotechnology and Food Policy, Governance](#)
- [Food and Class](#)
- [Food Labeling](#)

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Functional Foods as Commodities

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Synonyms

Designer foods; Nutraceuticals; Pharma foods;
Techno-foods; Technological foods

Introduction

Though notoriously hard to define, this entry adopts an understanding of functional foods as food products marketed for their health benefits. This definition includes products as diverse as calcium-fortified orange juice, omega-3-enriched eggs, and cholesterol-reducing margarine. The concept of functional foods encompasses both the application of nutritional science and technology to the development of food products and ingredients designed to deliver certain health benefits and the unprecedented level of marketing of food, nutrition, and health required to promote the concept (Heasman and Mellentin 2001). It is closely tied to the ability of manufacturers to make direct or implied health claims on product labels and in advertisements, an area of global regulatory friction. Market actors, not public authorities, drive the development of such products. While functional food commodities may reflect public health priorities, they are not developed as part of public health policy (Holm 2003).

Conventional nutritional wisdom holds that there are no bad foods, only bad diets. A good diet includes variety, balance, and moderation and is one component of determining health on both an individual and population-wide basis. Functional foods challenge this understanding of the relationship between food, diet, and health. Further, functional food science blurs the boundary between drugs and food by proposing the use of technologically altered foods in disease treatment and prevention. Critics suggest that functional foods represent an understanding of the food supply as a commodity rather than a public health resource (Holm 2003). Such concerns illustrate that the regulation of how functional food products are developed, distributed, and marketed is a global public health issue.

This entry begins with a discussion about the contentious definitions of functional foods. It then traces the historical development of technological foods, from early fortification initiatives to the current market for nutritionally oriented products. Functional foods are situated within the social context of medicalization and individualization of public health and the political

context of deregulation regarding the use of health claim. Criticisms from both public health and ethical perspectives are discussed, and prospects for the future development and regulation of functional food products are evaluated.

Varying Definitions of Functional Foods

One of the problems in evaluating and regulating functional foods is a lack of agreement regarding their definition. The International Food Information Council, an industry-supported body, defines functional foods as “foods that provide health benefits beyond basic nutrition” (Katan and Roos 2004). Yet the idea of “beyond basic nutrition” is problematic, since all foods can be argued to demonstrate targeted biological action on some function of the body in addition to providing nutrients. Also, some organizations, such as the American Dietetic Association and Health Canada, include whole foods alongside fortified, enriched, and enhanced processed foods in their definitions of functional foods (ADA 2009; Health Canada 1998). This understanding serves to confuse things further, blurring the boundary between natural and processed foods from a nutritional standpoint and making the category of functional foods nearly impossible to measure.

A clearer definition of functional foods takes into account the reality of the marketplace, in which functional foods are viewed as commodities that are closely tied to the use of health claims. Katan and Roos define functional foods as follows: “A functional food is a branded food which claims explicitly or implicitly to improve health or well-being” (Katan and Roos 2004, p. 370). This definition is useful both in terms of measuring the monetary value of the functional food market and in establishing regulations regarding the use of health claims. However, the intimate link between functional food development and marketing, significant scientific activity examining the food-health-nutrition connection, and a profit-driven global food industry is difficult to encompass in a single definition of the term.

Scrinis has suggested that the term “functional foods” is contentious and misleading and that it be abandoned altogether. He argues that there are no clear criteria for distinguishing functional foods from other foods, as all foods impact the health of the body. Further, he argues that the application of the term to both conventional and modified foods encourages a reductionist view of food and nutrition, in which a food’s value is determined by its nutrient content alone – a concept he refers to as “nutritionism.” According to this paradigm, an orange and a soft drink with the same vitamin C content would be viewed as nutritionally equal. He therefore proposes three alternative terms: “functionally marketed foods,” “nutritionally marketed foods,” and “nutritionally engineered foods” (Scrinis 2008). Such categories would allow a more transparent discussion and evaluation of functional food products. This entry continues to use the term “functional foods” in accordance with the literature but limits its definition to those foods marketed using a health claim.

Historical Background: Diet, Disease, and Public Health

The concept of functional foods as those foods designed and marketed specifically for a particular health benefit was first developed in Japan in the 1980s, as the Japanese government sought to address rising healthcare costs for an aging population. Japan remains the only country to recognize functional foods as a distinct legal regulatory category, although in 1991 the term “functional foods” was replaced by “foods for specified health use” (FOSHU) (Heasman 2008). However, the public health climate of the United States throughout the latter half of the twentieth century provided a hospitable environment for the introduction of the concept. Using a definition of functional foods “by which ingredients with an additional health-value have been added to foods (and this is announced to the consumers),” the functional foods market in the United States is now the world’s largest (Menrad 2003, p. 181). It is therefore worthwhile to

explore the historical development of technological foods in relation to public health in the United States.

Fortification as Public Health Policy

Functional foods as commodities have developed in a context in which fortification has long been accepted as a public health measure. From a purely technological perspective, functional foods are not that new. Fortification – the addition of vitamins or minerals to processed foods – has been used as a public health intervention since the early 1900s, when Europeans began adding iodine to table salt in order to prevent goiter. The introduction of iodized salt in the United States in 1924 effectively eliminated iodine deficiency as a public health concern and gained favor for further fortification measures. By the end of the 1950s, fortification of many commonly consumed staples was a common public health practice. *Standards of identity* for enriched flour and other grains were established, ensuring that all such designated products were fortified with particular nutrients considered to be most lacking in the American diet. The Federal Department of Agriculture (FDA) backed these measures. They were considered good public health initiatives because they offered a way in which to improve nutrient intakes – especially among low-income populations in which deficiencies were most common – without the expense or effort of education campaigns or changing population-wide dietary habits (Nestle 2002).

With fortification firmly entrenched as public health policy, food manufacturing companies began to recognize the potential of voluntary fortification for increasing profits. Adding vitamins and minerals to processed foods cost very little, yet enabled retailers to sell fortified products at much higher prices than standard products. By 1984, 92 % of breakfast cereals were voluntarily fortified (Nestle 2002, p. 305). Nutrient deficiencies were no longer a widespread public health concern, but the increased incidence of chronic diseases including cancer and heart

disease provided incentives for companies to fortify products with preventative nutrients such as antioxidants. Critics questioned whether improving the diets of Americans one nutrient at a time made good nutritional sense, but it did not matter: it made good business sense.

Throughout the 1980s and 1990s, the US government encouraged the food industry to develop products in line with particular public health goals. For example, the 1988 Surgeon General's Report on Nutrition and Health called upon manufacturers to create foods lower in fat and higher in fiber, while the 1990 Public Health Service's 10-year plan explicitly requested that food processors double the number of products lower in fat available on the market. In tandem with these requests, legislation was introduced that enabled manufacturers to make some claims regarding nutrient content, health benefits, and disease prevention on product labels. As such, companies rushed to develop products with the specific intent of marketing them for their health benefits.

The Healthy-Eating Revolution

Both the increase in nutritionally oriented food products and the active role of the government in encouraging their development are results of what Heasman and Mellentin (2001) call the "healthy-eating revolution." Starting in the 1950s, researchers began to draw a connection between overconsumption of certain nutrients and an increase in degenerative diseases. Scientific consensus regarding the unbalanced nature of the Western diet grew rapidly, and by the 1970s, the need for dietary reform in the developed world was widely accepted as a public health issue. Government intervention in the healthy-eating revolution largely took the form of the development and dissemination of dietary goals and guidelines. Although these have changed in both language and content since their introduction, the key principles advocating a diet of moderation remain the same. A healthy diet is defined as one that is high in fruits,

vegetables, and grains, that includes moderate amounts of fish, lean meat, and low-fat dairy products, and that is low in fats (particularly saturated fat), sugar, and salt. By the 1990s, the central ideas of the healthy-eating revolution were widely accepted by policy makers, nutritionists, and the public.

From a policy standpoint, these actions represented “a change in emphasis from micronutrient deficiency to one where food itself became associated with chronic disease” (Heasman and Mellentin 2001, p. 59). Such a shift implied dramatic economic implications to those sectors of the food and agriculture industry whose products were given the guilty verdict. To adhere to healthy diet recommendations, people would need to cut back on meat, eggs, dairy, and processed foods high in salt, sugar, and fat. The first response of certain segments of the food industry was to attempt to discredit the new nutritional paradigm, but as it became clear that the healthy-eating revolution was here to stay, companies developed new tactics. Still observable in the marketplace today, “the commercialization of the healthy-eating revolution is expressed in the thousands of fat-reduced, low-fat, fat-free, sugar-free, sugar-reduced and high-fibre product launches in the food and health marketplace since the 1980s” (Heaman and Mellentin 2001, p. 60).

While the healthy-eating revolution laid the groundwork for the rise of functional foods, the two movements differ significantly. The healthy-eating revolution was publically driven, “officially” promoted, and aimed to change diets through public policy, while the functional foods concept is industry driven, commercially promoted, and aims to change diets through marketing (Heasman and Mellentin 2001, p. 57). They also differ ideologically: instead of focusing on the whole diet and offering population-wide dietary goals, functional foods focus on single products or ingredients and promote individual outcomes. The tension between the two concepts is felt in resistance from public health authorities and consumer advocacy groups.

The Social Context: Conflicting Public Health Paradigms

Functional food commodities have gained momentum against a backdrop of particular underlying assumptions about the best way in which to deliver public health initiatives. Lawrence and Germov (1999) categorize public health interventions as falling under two distinct paradigms: the health promotion paradigm, which focuses on promoting the health of an entire population, and the medical paradigm, which focuses on reducing risks and treating illness in individuals. On a population-wide basis, health is a product of a combination of social, economic, and cultural determinants. Interventions intended to promote the health of a population as a whole must address these underlying circumstances in which health is created. Interventions designed to reduce disease in individuals aim to foster lifestyle changes, including dietary behaviors. Both paradigms can be useful in different scenarios and can be used together. However, in reality, the medical paradigm dominates in the delivery of healthcare. It is in this context that food has come to be “regarded as a commodity that may be modified to assist the dietary reform process” (Lawrence and Germov 1999, p. 57).

Also shaping public health education policy in the United States are the complementary ideologies of rational individualism and economic liberalism. Rational individualism assumes that when given proper information, the individual will make the best choice for her health, while economic liberalism assumes that the delivery of the health message is the only government requirement, leaving it to the individual to make lifestyle changes accordingly (Lawrence and Germov 1999). Further underpinning the health education approach is the belief that the consumer will respond to health education messages and make the best choice for her health – an assumption that neglects the myriad other factors that influence food and lifestyle behaviors. An alternative social viewpoint is that of collectivism, in which emphasis is placed on categories,

places, and social positions, rather than on individuals. This philosophy is more dominant in Europe and encourages the development of “upstream health promotion policies” rather than a “downstream curative focus” (McKinlay and Marceau 2000, pp. 26–27).

A risk of individualistic approaches to public health is the medicalization of the food supply, in which food is increasingly treated like a drug with specific properties for treating or preventing disease. Under such a scenario, illness becomes viewed as a matter of the individual making poor diet choices, ignoring the multifactorial personal and social circumstances that create or inhibit health. Lawrence and Germov are critical of this view, as it “represents a pathologised and reductionist approach to health promotion and food consumption” (1999, p. 60). McKinlay and Marceau (2000) are gentler in their critique, celebrating the past achievements of the medical/individualist paradigm in tackling infectious and chronic diseases while calling for new approaches to the public health challenges of the twenty-first century. They emphasize that a holistic, collectivist public health model that distances the field from the dominant medical paradigm is necessary to address the ecological scope of current and future public health challenges, including global environmental degradation and widening social inequalities.

The Political Context: Deregulation

Historically, legislation in most countries has prohibited the use of product health claims that seek to link a food with the treatment or prevention of a particular illness (Heasman 2008). However, hand in hand with the creation of new, health-oriented products came the desire for food companies to market them for their health benefits. The result has been partial and inconsistent deregulation surrounding the use of health claims, which varies considerably from country to country (Hasler 2008; Katan 2004).

The current regulatory situation in the United States has its origins in the Nutrition Labeling and Education Act (NLEA) of 1990 and the

Dietary Supplement Health and Education Act (DSHEA) of 1994. Under these groundbreaking acts, food manufacturers were for the first time permitted to make a limited number of specific health claims, including structure/function claims linking a product to a particular biological action, on food labels for marketing purposes. The Consumer Health Information and Better Nutrition Initiative of 2003 further reduced the level of scientific evidence required for companies to make health claims on product labels (Nestle 2002). Although the FDA distinguishes between levels of scientific evidence by allowing different types of health claims on product labels, studies have shown that consumers have trouble differentiating between qualified and unqualified health claims (ADA 2009).

The regulatory context in Europe has been equally contested and even more fragmented. Throughout the past few decades, many countries developed their own regulatory frameworks for the use of voluntary health claims on functional foods. However, in 2007 the European Union Regulation No. 1924/2006 was passed, enacting EU-wide regulation of health claims permitted for functional foods and establishing a set of criteria for the scientific substantiation of health claims (Asp and Bryngelsson 2008). Similar legislation has been approved in Australia and New Zealand as of late 2012. Both of these regulatory schemes seem to establish much more rigorous standards for the approval of health claims on functional food products than those of the United States; however, it is too early to assess their impact.

The challenge for all regulatory bodies charged with evaluating functional foods and health claims is that they are being asked to develop legislation in advance of a significant body of evidence supporting such regulatory change. The reason for this is that the investment in research and development required to develop functional food products is substantially higher than that of their conventional counterparts. Many stakeholders are open about the fact that if regulations are not relaxed, much research and development of functional food products is unlikely to proceed (Heasman 2008).

From an industry perspective, the motivation to produce functional foods is largely a factor of decreasing profit margins in processed food markets and economic pressures of shareholder imperatives. The current global food system is characterized by a highly competitive marketplace in which product differentiation is often elusive. Additionally, investor excitement over technologically oriented market sectors has led to decreased investment in the slow-growing food industry. As pressure to create a strong return on investment mounts, functional food science presents an opportunity for companies to produce value-added products that are truly innovative. In support of this approach is the widely held food industry conception of “a new consumer relationship with health, and this includes attitudes to food” (Heasman and Mellentin 2001, p. 19). Factors leading food producers to adopt this view include an aging population increasingly susceptible to chronic disease, market research indicating increased consumer interest in personal preventative health measures, and the rising cost of healthcare.

Heasman and Mellentin (2001) characterize partial deregulation coupled with cautionary advice as a “wait-and-see approach” to functional foods public policy, which is “largely reactive and . . . could exaggerate confusion in the public mind” (p. 76). Alternate policy approaches include resistance to industry demand combined with tough regulations allowing only strongly scientifically substantiated health claims, or active embracing of the functional foods concept and encouragement of ethical functional food development.

Criticisms of Functional Foods

As a public health measure, the use of functional foods has been criticized because it does not address the social – including economic, cultural, educational, and environmental – causes of poor health. Health is not simply a product of diet but also consists of a social dimension through which people express themselves and connect with others. Therefore, a healthy society not only has

access to a variety of affordable, nutritious foods, but such foods must also be culturally relevant (Sibbel 2007). Further, any attempt to encourage the consumption of functional foods must take into account that the nutritional rationality competes with a host of other rationalities – including economic, social, and symbolic – in informing people’s daily food choices (Holm 2003).

Functional foods have also been criticized from the perspective of sustainability, in part because there is no effective way in which to measure their environmental impact. The World Health Organization has recognized that population-wide health interventions must be ecologically sound, as the sustainable preservation of environmental resources, including food, is a necessary condition for health (WHO 2009). Therefore, one measure of the effectiveness of functional foods must be an evaluation of the resources they consume relative to the benefits they offer as compared to other types of public health measures. Although no infrastructure exists through which to measure the total environmental impact of functional foods, it is worth noting that such products are often highly processed, packaged, and widely distributed and may not reflect seasonality (Sibbel 2007).

Another aspect of a sustainable food system is that it is participatory in nature. Consumers must be able to participate in a feedback loop with producers as new scientific information emerges and new products are developed. Due to the highly technological nature of functional food products, the opportunity for consumer participation is limited and may even alienate consumers (Sibbel 2007). Studies have demonstrated a high level of consumer distrust and skepticism regarding foods with health claims (Sibbel 2007; Williams and Ghosh 2008).

Functional foods may send a confusing nutritional message to consumers by focusing on single nutrients, rather than the whole diet, for health outcomes (Holm 2003; Nestle 2002; Schroeder 2007; Sibbel 2007). Studies have shown that lay conceptions of healthy eating rely heavily on the concept of food groups or food pyramids (Holm 2003). Health claims of functional foods may encourage consumers to focus on specific

products, single ingredients, and single outcomes, drawing attention away from food groups and holistic nutrition. Similarly, the blurring of traditional boundaries by functional foods that cross food groups – such as confectionary enhanced with calcium or soft drinks with added vitamins – may also distract consumers away from a food group orientation. Finally, “functional foods will introduce a detail oriented and fragmented way of communicating nutrition and healthy eating” (Holm 2003, p. 540). Such an approach may engender consumer confusion, distrust, and ambivalence, similar to the reaction to food safety concerns.

A further concern is that functional foods may not be accessible to those consumers who would be most likely to benefit from them. Consumer studies have shown that functional food products are mostly preferred by well-educated women aged 30–50 – a population group who are among the least likely to need functional foods. Those who may benefit the most from functional foods include children, nonaffluent elderly, and consumers in the developing world. Yet these populations are not the target market of functional food manufacturers, as they are not in a financial situation to afford them (Schroeder 2007).

Perhaps most significantly, functional foods as a whole have not been sufficiently proven to be either safe or effective (Ernst 2001; Lawrence and Rayner 1998; Schroeder 2007). It is, in fact, impossible to assess the safety and efficacy of functional foods holistically, as each product or ingredient is designed to target specific biological functions in a specific population group. Therefore, the primary concern in assessing the safety and efficacy of functional foods is to ensure that sufficient mechanisms are in place to evaluate new products before they enter the market.

Support for Functional Foods and Future Prospects

Behind the functional foods concept is a genuine attempt to improve human health through advancements in nutritional science and

biotechnology. A number of research organizations, such as the Functional Foods for Health Program at the University of Illinois, are dedicated to the identification and development of disease-preventing and health-promoting food components and products, as well as to raising the profile of functional foods. An example of the application of such research is the addition of folate, a nutrient hard to obtain in the average diet but important to fetal development, to cereals and other food products. However, the successful integration of truly functional foods requires proactive policy regarding their regulation. Such policy should ensure that those functional foods meeting strict regulatory criteria are widely available, affordable, accessible to those whom they benefit, and acceptable in the minds of consumers (Heasman and Mellentin 2001).

Evidence regarding the impact of functional foods and health claims on public health is insufficient to recommend them on a large scale (Lawrence and Rayner 1998; Schroeder 2007). However, they may be useful in specific cases, for particular populations or individuals. In this sense it is useful to regard functional foods in the context in which they are developed – as part of an individualized, medicalized framework in which clinical trials conducted on individuals are the substantiating research methodology. As such, Lawrence and Rayner (1998) recommend a general prohibition on the use of health claims, with exemptions made on a case-by-case basis to allow food manufacturers to take advantage of emerging scientific data in order to develop products that may benefit certain individuals. Similarly, Katan and Roos (2004) advocate stricter regulations that prohibit the use of “soft claims” but allow the use of “hard claims” when there is sufficient agreement of scientific evidence. The intention of such recommendations is to prevent the widespread marketing of foods as medicines, but still enable innovative research and development.

Functional foods have been recognized as a growing market for food manufacturers. In order to substantiate health claims for innovative products, industry-funded research is likely to be biased toward investigating the bioactivity of single foods and their components. It is also likely

that the industry will promote health education messages regarding the benefits of single foods. In order to counterbalance these efforts, publically funded research into the relationship between health and the diet as a whole is recommended, as well as increased educational efforts to encourage balanced and varied diets (Holm 2003).

Heasman and Mellentin contend that in order for the functional foods concept to be effective, it must “produce both healthy people and healthy profits” (2001, p. 263). As such they propose a new business model which they term the “healthful company.” Such a business is centered around the holistic health of the consumer, takes strong ethical and social responsibility, builds genuine relationships with consumers, is both product and service oriented, and is knowledge rich. Under this model, they suggest that the need to rely on regulated health claims becomes incidental, as the company will demonstrate its claim through its actions. They point to the long-term success of the Japanese probiotic dairy company Yakult as an example of a successful “healthful company.”

Summary

The growth of functional foods over the past three decades is largely a result of an increasingly individualized view of public health, a political climate of market deregulation, and a focus on the role of individual nutrients, as opposed to the whole diet and other lifestyle factors, in health promotion and disease prevention. Though notoriously hard to define, functional foods are intimately tied to the ability of food manufacturing companies to make health claims about their products. Historically such claims have been prohibited in most countries, but increasing pressure from the food manufacturing industry has led to new legislation allowing some health claims. Such regulations, the types of claims they allow, the degree of scientific substantiation required, and their enforcement vary greatly from country to country.

In challenging conventional understandings of the role of the whole diet in nutrition and health, functional foods invite criticism from public

health and nutrition scholars and officials. Further, the ethics of functional foods have been called into question from the perspectives of safety, efficacy, sustainability, and access. Recommendations for the future of functional foods call for tighter regulations and a higher level of scientific substantiation, as well as ethical business models focused on the holistic health of the consumer. Publically funded research initiatives to counterbalance the weight of industry studies are advised. However, with the influence and funding of the processed food industry behind them, functional foods marketed with health claims are likely to increase in prominence in the future.

Cross-References

- ▶ [Biotechnology and Food Policy, Governance](#)
- ▶ [Functional Foods](#)
- ▶ [Functional Foods, Marketing of](#)
- ▶ [Medicalization of Eating and Feeding](#)

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Functional Foods, Marketing of

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Synonyms

(Marketing of): Bioactive foods; Advertising of foods; Politics and history of nutrition; Scientiz-ing food

Introduction

“Let’s face it,” says Marion Nestle, of the Department of Nutrition and Food Studies at New York University, “functional foods are about marketing, not health. Fruits and vegetables are already perfectly adequate to help prevent cancer and heart disease” (Brophy and Schardt 1999). Nestle’s statement points, perhaps unconsciously, to the entrenched thinking of many scholars and scientists of nutrition that food is more than just nourishment and that it is an active agent in the body. More than simply “filling us up” or tasting good, the belief is that food contains “bioactive” compounds that are essential to health and well-being. Because nutrition policies encourage nations to pursue “health” through eating, food scientists, nutritionists, and biochemists continue their research into the function of particular nutrients in the body, the foods in which those active ingredients are located, and how best to isolate those compounds. It is this undertaking that grounds the emergence of “functional foods” as a consumer product category. The role of food as weapon for combating disease has prompted the category of “functional” food or beverage to be identified as one of the fastest growing market segments of the twenty-first century. Accordingly, food producers have seized on this trend to “functionalize” many processed, industrial food products like cereals, snack foods, and drinks through the addition of “magic bullet” ingredients believed to confer specific physiological benefits in the body. Cereals now lower cholesterol, yogurt improves brain function, and orange juice improves bone health. At the time of publication, the United States remains the largest market for functional foods; however, Asia-Pacific and developing nations are anticipated to be areas of tremendous future growth (Global Industry Analysts 2012). The purpose of this entry is to provide a brief historical context for the emergence of functional foods as a marketing category, identify the social and cultural conditions that have made functional foods possible, and outline the key industry players, political bodies, and policy measures that inform the marketing of functional foods.

Social and Cultural Conditions for Functionalized Food

Ancient, Classical, and Renaissance Legacies

“Let food be thy medicine and thy medicine, food” – *Hippocrates*

As the quote by Hippocrates indicates, civilizations have been functionalizing foods for centuries (Medicinal Food). Lay knowledge and folk wisdom about what to eat to remedy illness, biliousness, or weakness circulated within traditional communities, as it continues to do today. Prescribing chicken soup for a cold is an example of a food whose perceived function is more of the product of history and culture than science and whose claims to make one healthier are neither officially tested nor regulated. Roman physician and surgeon Galen wrote treatises on humoral theory, food, and diet and included essays entitled “On Barley Soup” and three volumes of “On the Powers of Foods.” In “On Barley Soup” Galen touted its purgative abilities, its ability to reduce fevers, and its power to convert “semi-putrid juices into good ones” (Grant 2000). Galen held that medical treatment through diet depended largely on the individual’s humoral composition and that foods, while different than drugs, could be used medicinally. Some foods had “hot and harsh powers, such as garlic, leeks, and onions,” and others, like wine, were cooling, and too much would cause “a cold disease.” Much early food functionalization grouped foods by their capacities to heat and cool the body, and Traditional Chinese Medicine (TCM) and Ayurvedic medicine used yin and yang and doshas (body constitutions) to prescribe certain foods over others, prescribing the consumption of particular foods to alleviate particular health grievances in particular individuals or to promote ideal health in others. As such, early food functionalization was closely tied to culture, the healing arts, and religion. With the advent of the university, the professionalization of medicine and the rise of scientific research, the relationship between food and its effects on the eater, became more formalized.

Formalized Science and Functional Foods

Crucial to the emergence of the category of “functional food” was the rise of modern science and of the field of nutrition. As scholars began to investigate eating, food, and the body through the lens of formalized scientific knowledge, foods began to be understood by their constitutive chemicals, rather than by their essential qualitative natures (i.e., hot or cold, yin or yang) (► [Functional Foods](#)). With increasingly microscopic and atomic technologies, scientists isolated compounds they thought acted in the body and produced data and analyses of a food’s composition. This shift began in the early modern period (ca. 1450–1750), during which time European intellectuals, inspired by classical Greek and Islamic mathematics and sciences, began to study nature as an objective, controllable entity. Early dietary studies were conducted to examine and establish the functions of foods even before scholars had identified the active, biological ingredients involved. The first example of an empirical approach to identifying specific food ingredients acting in the body was the studies of scurvy done in the 1600s and 1700s by English naval surgeons John Woodall and James Lind. In 1617 Woodall wrote “The Surgeon’s Mate,” in which he described the symptoms of scurvy and pointed to lemon juice as the cure. He then persuaded the East India Company to provide lemon juice to its sailors. In 1747, Lind conducted what is considered the first controlled experiment to establish the link between citrus fruits and a remedy for scurvy. He divided patients into six pairs, giving each group a different remedy. Only the ones receiving oranges and lemons recovered (Leger 2008). This discovery set a precedent for the scientific method being applied to identify the relationship between a particular food and the prevention of disease.

In the eighteenth century, Antoine Lavoisier’s research into animal metabolism and respiration, published as *Memoires sur la chaleur* in 1783, formalized the “calorie” as a unit of food and energy and begat a model of the body that processed food in a mechanical way,

transforming food into energy. The application of the calorie to food was one of the earliest explicit and formal scientific assertions of a food's function. Food became a measurable unit of fuel. Building on Lavoisier's work on heat, metabolism, and calories, nineteenth-century German scientists Justus Liebig, Carl von Voit, and Max Rubner all worked to improve techniques of bomb and respiration calorimetry and proximate analysis to better isolate the molecular components of foods. This catabolism of food into discrete units of energy, fat, carbohydrates, and proteins, and the study of how these components acted in the body provided the foundation for the creation of the science of "nutrition" (Rossiter 1975; Cravens 1996).

By the early twentieth century, formalized science had become the authoritative forum for understanding food from its production to its ingestion in the human body. Science functionalized food through the identification of certain nutrients that contributed to, or helped prevent, disease. Clinical trials and controlled experiments generated data about food and eaters to enable medical practitioners to treat food prescriptively. In the North American context, historians of science point to the late 1800s as the beginning of the era that advanced the rise of science in American public life. Alongside the application of science to the workplace, public infrastructure, and social life, the formalization of both nutrition science and home economics curricula fostered the application of the methods of science to food and eating. The US Department of Agriculture was created in 1862 with the goal to "becom[e] a great science-producing agency of government" (Cochrane 1993). The USDA funded and supported universities, nutrition scientists, and home economists as well as developed standards for food producers, food quality inspectors, food industries, and farmers. The agency principles and funding structure facilitated the epistemological assumption that "knowing" food meant knowing how it acted in the body. As such, it provided a new framework for categorizing food. Food meant proteins, carbohydrates, and fats, and the way a food was understood to function in the body stemmed from this categorization.

Wilbur Atwater modeled the body after the closed thermodynamic system of physics, and his experiments promoted a practical economics of the body as fuel in, energy out. Atwater ran dietary studies with different populations of people and wrote that "by comparing the results of many such investigations it is possible to learn about how much of each of the nutrients of common foods is needed" (Atwater 1902). With the discovery of the water-soluble "vital amines" of B1, B2, B3, C, and D by Casimir Funk beginning in 1912 and fat-soluble vitamin A in 1913 by Elmer McCollum, food became functionalized in a new way. The discovery of vitamins showed that all calories, or even all fats, proteins, or carbohydrates, were not created equal. Vitamins and minerals introduced a qualitative measure for foods, and as the century saw more links between vitamins, minerals, and deficiency diseases, categorizing foods based on their function provided a more targeted way to avoid these diseases. By the mid-twentieth century, the prophylactic health benefits of many nutrients had been identified: Vitamin B1 combated beriberi; niacin, pellagra; vitamin D, rickets; vitamin A, night blindness; iron, anemia; and iodine, goiter.

This paradigm of academic scientific research was and remains a fundamental ontological linchpin in defining "good" food. Alongside laboratory research into the relationship between food and disease came dedicated research centers, government grants, more precise and specific research technologies, and journals and professional associations whose focus was on studying the link between food components and health. In 1928, the *Journal of Nutrition* was established alongside the American Society for Nutrition, and in 1941 the British Society for Nutrition. These publications and societies helped cement the professionalization of the field, and by extension, they created an academic and social space for functional foods to exist.

Concurrent with the rise of the formal sciences was the industrialization of food production and the concentration of ownership among food manufacturers. To address the changing demands of sellers in an industrialized marketplace, the formal discipline of "marketing" was born at the

turn of the twentieth century. The self-conscious practice was first integrated into university curricula at the University of California, Berkeley, and the University of Illinois in the late nineteenth century, although the field was arguably the product of international collaboration between American and Continental scholars (Bartels 1988). The establishment of professional organizations in food and nutrition therefore occurred contemporaneously with the establishment of professional marketing organizations such as the American Marketing Society (AMS) (precursor to the American Marketing Association (AMA)) in 1931. An era of modern food production and marketing was born.

The Rise of Food Marketing: Federal Food Guides and Advertising

Marketing is conducted not only by private corporations but also by different levels of government and a range of public and nongovernmental institutions. Governments market ideas using tools such as information campaigns, pamphlets, and guides in attempts to influence social behavior. As scientists at work in the field of nutrition arrived at more precise techniques for measuring foods and eaters, they were able to identify more elemental and molecular components of food. The isolation of active compounds in food created the space for a wider range of food components to become functioning agents in the body – not only macronutrients like carbohydrates and proteins but vitamins, minerals, and, more recently, fatty acids, amino acids, and phenols. National governments funded much of this research, and they set to publishing it in the form of food guides with the goal of improving public health. Thus, in the early part of the twentieth century, the formal food guide was born. Food guides reflected national government's attempt to educate the public to understand food as a vector for nutrients, whose function was to keep disease at bay. The first USDA food guide aimed at children and published in 1917 categorized food by its presumed biological function in the body. Milk was deemed particularly

important. The USDA noted that although milk is a liquid, it contains, if the water were driven out of a quart, “half a cupful of the very best food substances, including butter fat, a kind of sugar not so sweet as granulated sugar known as “milk sugar,” and also materials which are needed to make muscles, bones, teeth, and other parts of the body” (Hunt 1917). The goal of the food guide was to teach the public the proper way to eat, and while the notion of “proper” would change over time, the USDA was consistent in encouraging the consumption of certain foods over others (Nutritionism).

The first population-wide dietary guidelines came in 1917, encouraging Americans to select their meals based on a food's pragmatic value: fuel. While fuel was qualitatively judged, early on it remained the function of food. Cereals were considered good sources of fuel because they were inexpensive and preferred over fruits, vegetables, meats, and sugars, which were more expensive. In the 1920s the addition of iodide to salt served as one of the first functionalized food staples, as iodine had been identified to prevent goiter. Morton Salt advertisements warned of contracting goiter and that their iodized salt was recommended by “high health authorities” because iodide was “vital to the normal function of the health-governing thyroid in the neck” (► [Company Identity in the Food Industry](#)). In Britain and France, Nestle's “milk food” touted itself as “a perfect nutriment for infants, invalids, and children.” Kellogg's Pep cereal was one of the earliest actual foods that were promoted as encouraging a specific physiological function; advertisements from the 1920s describe Pep as containing bran, which was “mildly laxative.” Pep thus “helps stop constipation!” (Playtime pep, 1927).

In the period from the Great Depression to the rationing of World War II, the development of daily nutritional minimum requirements articulated by the League of Nations, the British Medical Association, and the US Department of Agriculture marked a shift in the functionalizing of food. As governments established nutrient minimums (recommended dietary allowances, or RDAs, were first established by the United

States in 1941), food constituents became explicitly prophylactic to a degree they had never been before. Federally mandated minimum regulations for nutrient intake provided authority for the food industry to market its products as essential tools for maintaining the well-being of the nation. The manufacturer of Kix cereal, General Mills, advertised from the 1940s that it “consulted leading nutrition authorities before making Corn Kix,” and as such, it contained vitamin B, vitamin D, calcium, and phosphorous cartoon character. Brer Rabbit claimed that Brer Rabbit Molasses was “rich in iron” in an ad from 1941, and the US government endorsed “Vitamin Donuts” that were each fortified with “a minimum of 25 units of vitamin B1.” Breakfast powders like Ovaltine, Horlicks (in the United Kingdom and Asia), and Milo (in Australia and Asia) were some of the first processed foods engineered specifically as vehicles for providing the body with the required daily vitamins and minerals.

These new fortified products did more than simply provide ingredients that had physiological benefits. Their secondary function was to reformulate the category of “food,” through marketing. Advertisements for Ovaltine show that the function of “tasting good” to the body became supplanted by “doing good” to the body. These milk supplements were not “foods” in the traditional sense; they were foods because they encouraged the eater to think about eating as an activity designed to fulfill the recommended allowances. An Ovaltine print advertisement from 1944 equated a bounty of food, its vitamin content, with two glasses of Ovaltine that were its nutritional equivalent. Ovaltine provided as much vitamin G (now known as vitamin B2 or riboflavin) as $\frac{3}{4}$ lb of sirloin steak, more niacin than five slices of fortified bread, more vitamin B1 than 3 servings of oatmeal, and more vitamin D than 10 oz of butter.

As the century progressed, concerns about the deficiency diseases that the RDAs were meant to address gave way to the new threat of chronic diseases like obesity, diabetes, and heart disease. The scientific lens through which to understand eating and the human body, however, remained. A postwar shift in regulatory and marketing

efforts reflected unprecedented affluence in industrial nations and its associated chronic conditions. As a result, the 1980 Dietary Guidelines for Americans reflected a greater emphasis on nutrient intake (a shift echoed at the international level), recommending an avoidance of excess fat, cholesterol, salt, and sugar.

What Is in a Name? Marketing in the Age of “Functional Foods”

While the idea of eating according to a food’s function or in a healthfully prescriptive way has been around for centuries, the categorization of “functional foods” was formalized by Japan’s Ministry of Health, Labour and Welfare beginning in 1991 with the appellation “Foods for Specified Health Use (FOSHU). The FOSHU designation was the result of a project developed in the mid-1980s by the Ministry of Education, Culture, Sports, Science and Technology that studied food’s role in the maintenance of good health or prevention of disease, beyond that of maintaining basic nutrition. Japan’s Ministry of Health, Labour and Welfare (MHLW) began regulating food label health claims as of 1991 under the Nutrition Improvement Law and Nutrition Improvement Law Enforcement Regulations (Fujimaki 1988; Arai et al. 2001).

In the United States, Canada, the United Kingdom, and Australia, there are no legal definitions of functional foods. Unofficial definitions of functional foods generally describe the foods as containing biologically active constituents that may or may not impart “physiological benefits and/or reduce the incidence of chronic diseases” (USDA, Health Canada, UK). The European Commission proposed in 2010 the following working definition for a “functional food”: a food that “beneficially affects one or more target functions in the body” (European Commission 2010). As academics, policymakers, and industry attempt to agree upon a definition, more legislations attempt to draw the distinction between functional foods and nutraceuticals, the latter of which are simply isolated products from foods that are sold as medicine. Functional foods

are part of nutrition that professor of consumer behavior and nutritional science and former executive director of the USDA's Center for Nutrition Policy and Promotion Brian Wansink calls "consequence-related" (Wansink 2007). According to Wansink, functional foods will act in the body beyond their simple "attribute level" of calories, fat, proteins, and carbohydrates. Functional foods may be in their natural, unprocessed state – oats may be considered a functional food for its soluble fiber content that has been shown to reduce cholesterol – or they may be foods fortified to be functional through the addition of various nutrients. Fruit juices with added soluble fiber, granola bars with added probiotics, and peanut butter with omega-3 fatty acids are all cases of foods becoming "functional" through fortification. Omega-3 fatty acids do not naturally occur in peanut butter, and rolled oats and honey do not naturally contain probiotics.

In 1990, the US government passed the Nutrition Labeling and Education Act that required all packaged foods to be printed with a nutrition facts label (► [Food and Health Policy](#)). First introduced in October of 1989, this bill mandated that a rectangular information panel indicates the serving size and cholesterol, calorie, fat, sugar, protein, sodium, and carbohydrate content of the food in the package (► [Food Labeling](#)). The goal of this label was to "provide information regarding the nutritional value of . . . food that will assist consumers in maintaining healthy dietary practices" (NLEA 1990). The hope was that the nutrition facts label could act as a basis for the development of numeric standards to structure the food industry use of product health claims. The US Food and Drug Administration (FDA) has established regulations on the parameters for health claims associated with the specific, quantifiable chemical contents of a food. For example, the claim of "excellent source of" and "rich in" can only be applied to foods containing 20 % or more of the recommended daily intake of the particular nutrient in each federally mandated "serving size." The legislation makes no distinction between foods that have been artificially fortified and foods that contain the nutrient in their unaltered state. As such, both broccoli and

artificially flavored and colored yogurt-covered fruit bites fortified with vitamins can be marketed as "a good source of calcium" and an "excellent source of vitamin C." In the United States, having a particular nutrient is one way a food can be marketed, but lacking a particular nutrient is another. The FDA mandates that food can be marketed as "light" or "lite," meaning that the package contains "a nutritionally altered product that contained one-third fewer calories or half the fat of the reference food. If the food derives 50 percent or more of its calories from fat, the reduction must be 50 percent of the fat" (Stehlin 1993).

Presently, public and private "functional foods" research centers and units specializing in the isolation of the active biological components of foods can be found in Europe, Asia, Australia, and the Americas. Among the larger centers are the US Department of Agriculture (USDA)'s Functional Foods Research Unit, the University of Manitoba's Richardson Centre for Functional Foods and Nutraceuticals, the New Zealand Institute for Plant and Food Research, and the Functional Food Centre at Oxford Brookes University. In 2008, the International Society for Nutraceuticals and Functional Foods met for the first time and founded the *Journal of Functional Foods*. As techniques become more specialized and scientists are able to isolate compounds with physiological benefits, the trend of fortifying foods with active ingredients that are not inherent will likely continue alongside robust advertising campaigns that tout a food's active ingredient. While federal regulations rule what kind of health claims can be made and published on food packaging, it is often the case that magazines, television health shows, celebrities, doctors, and private industry equivocate when discussing certain foods they deem to be functional. Claims made by celebrities or media may have just as much impact as federal regulations in associating a food with a functional benefit in the public imagination. The surety with which celebrity surgeon Dr. Mehmet Oz has in stating that "broccoli is simply the best medicine we have" (► [Eating and Nutrition](#)). It gets toxins out of your liver like no other medicine or food on the planet" (Health 2013) does harken back to Hippocrates' quote.

And while whole foods like green tea, broccoli, red wine, or almonds may be peddled as magic bullets for heart disease, hypertension, stress reduction, or cancer prevention, grocery store aisles are also filled with items like vitamin- and antioxidant-filled waters; fruit drinks with added omega-3 fatty acids; chocolate syrups fortified with vitamins B, C, D, and E, calcium, and iron; and even pet foods with added docosahexaenoic (DHA) acid for animal brain function.

Summary

Functional foods are likely here to stay. The wealth of research linking diet to health and the imperative for food producers to deliver novelty and added value suggest that this is one concept with enormous marketing potential. From the earliest recorded controlled experiments linking citrus fruit to a remedy for scurvy through the repackaging of infant nourishment into mix-and-stir proprietary formulas to the recent boom in novel “uppers” like caffeine- and herbal-infused beverages, the science of well-being has had powerful institutional investors (military, government, private corporations). Swiss-based Nestlé, the largest processed food producer in the world, has recently declared its intention to invest \$500 million in a new “Nestlé Health Science” division. In response to the question of why the company would invest in the nutrition business, president and CEO Luis Cantarell declared Nestlé’s mission to deliver good nutrition, health, and wellness – not just food. In 2010, Cantarell explained to *The Globe and Mail*: “We believe there is a convergence between food and pharma. . . Our food and nutrition expertise can help create a new industry [where] nutrition plays a bigger role in helping people who live with difficult chronic medical conditions” (Blackwell 2010; Melnick 2010).

The notion that food functions in the body to promote or thwart health – the very basis for the field of nutrition – provides functional foods with both their compelling rationale and their potential for abuse by marketers. As food manufacturers leverage tremendous resources to finance or

leverage research into the action of food constituents in the body, consumer literacy in the complexities of human metabolism does not necessarily keep pace. Nor do the nuances of ongoing scientific research necessarily filter through into the sound bites of Dr. Oz or the health claims made on labels of fortified yogurts, chocolate syrups, and dog foods. As the recent health controversy in the United States over deaths linked to Monster Energy Drinks attests, the marketing of functional foods is an important issue for public concern (► [Functional Foods](#)). Food industry observers project future functional foods market valuations into the hundreds of billions of dollars, annually. It may be that “functional foods” represent a sea change in food marketing – and, thus, of food consumption – a shift complicated by the term’s lack of definitional certainty and uneven international regulation. It appears certain, at least, that scientific research and commercial investment into the functional nature of foods will continue into the foreseeable future.

Cross-References

- [Company Identity in the Food Industry](#)
- [Eating and Nutrition](#)
- [Food and Health Policy](#)
- [Food Labeling](#)
- [Functional Foods](#)

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Gender and Dieting

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Synonyms

Gender and eating; Gender and food; Men and eating; Weight loss; Women and eating

Introduction

Conventionally, the domestic sphere has been defined as a woman's world, thus feminizing food, shopping, cooking, and eating, along with nutrition, dieting, weight loss, and health. In contrast, men have occupied the opposing side of the nature/culture, private/public, domestic/commercial divide, typically eschewing food and the body as feminine focuses rather than masculine pursuits. As a result, much research has focused on women and dieting, but studies of the intersections between men, masculinity, and food are relatively limited. Work exploring men and dieting is particularly scant.

Sex difference discourse abounds in the study of gender and dieting, as the similarities and differences between what, how, and why men and women eat (and do not eat) speak volumes about how societies construct gender. Past research, which is summarized in this entry, has

sought to define masculine and feminine foods, identify gendered food preferences, and chronicle how men and women each eat. To a degree, however, these efforts operate using a stagnant definition of gender. Feminist scholarship informs the discussion of gender and dieting, reinforcing the changing, variable, relational, and social meaning of gender and how it is performed in everyday life, such as through eating and dieting.

After defining dieting, this entry discusses philosophical approaches that influence its study. The entry next provides a history of modern dieting, using the United States as an example. The entry then summarizes what motivates individuals to "go on a diet" and the gender-specific characteristics of eating and dieting, generally in a modern Western context. Dieting is also discussed in relation to obesity, particularly in the United States where rates are relatively high and virtually equal among men and women.

Defining Dieting

Though also a noun and an adjective, the act of dieting is generally defined as eating sparingly and according to prescribed rules in an effort to control weight. Dietitians and health professionals promote a "healthy diet," defining the term "diet" as the grand sum of all that an individual consumes. Weight loss diets on the other hand come in many packages. Some diets limit particular macronutrients, such as low-fat or

low-carbohydrate diets. Some diets are developed and recommended by physicians, such as the Ornish diet, an extremely low-fat diet that researchers confirmed can not only treat but also reverse heart disease. Others are “fad” or “crash” diets, endorsing dietary changes that range from the extreme to the bizarre with potential effects ranging from disappointing to dangerous.

Individuals typically “go on a diet” to lose weight, often desiring to lose weight quickly, despite the generally accepted advice to lose no more than 2 lb per week. Health professionals nearly universally recommend a measured “lifestyle” approach, encouraging gradual weight loss by means of long-term behavior changes, such as reducing the amount of sugar-sweetened beverages one consumes or exercising for 30 min or more each day, rather than resorting to crash diets, which typically do not result in lasting weight loss. The cycle of weight loss and gain is referred to as “yo-yo” dieting and may have detrimental health effects, including emotional and psychological distress.

Furthermore, dieting is considered by many to be a gateway of sorts to eating disorders. In some individuals, constant anxiety regarding food, eating, and weight can cluster as disordered eating practices and even transform into full-blown eating disorders, such as anorexia nervosa, bulimia nervosa, and binge eating. For this reason, the high rates of dieting among women, particularly young women and girls, can be concerning. Notably, 90–95 % of those with eating disorders are female, though recent studies reveal that these widely accepted statistics might underestimate the male burden of eating disorders (Strother et al. 2012). For example, young men use anabolic steroids at approximately the same rate that young women develop anorexia or bulimia. In general, eating disorders among men are characterized as “underdiagnosed, undertreated, and misunderstood.”

Philosophical Approaches to Dieting

As discussed by the contributors to *The Atkins Diet and Philosophy* (Heldke et al. 2005),

a variety of philosophical approaches inform a study of dieting. While most major Western philosophers do not offer recommendations for a healthy lifestyle, Nietzsche argued that the human body and mind find their ability to function optimally – and to become and produce art – when properly fueled by a balanced diet, personalized to the individual (Irwin 2005 in Heldke et al. 2005). Notably, Nietzsche concerned himself with not only good nutrition at the individual level but also balanced eating as a form of cultural nutriment as well (Bamford 2005 in Heldke et al. 2005). In addition, Dewey, Hume, and Aristotle each endorsed forming strong habits under unimpassioned circumstances (Auxier 2005 in Heldke et al. 2005). Thus the habits of “healthy” eating created and practiced in the absence of desire will prevail when tempted, perhaps by sweet or fattening foods. Dennis (2005 in Heldke et al. 2005) applies Kant’s ideas on individual decision making (autonomous, unfree, and random) to personal eating habits and food choices, revealing yet another of the many ways that philosophers have approached the topics of eating and dieting.

US History of Dieting

Beyond philosophical approaches, historical context also shapes dieting practices. While dieting histories differ across the globe, Hillel Schwartz’s *Never Satisfied: A Cultural History of Diets, Fantasies and Fat* (1986) is one work that chronicles the history of dieting in the United States. As he describes the slimming methods of successive time periods, Schwartz argues that dieting and the desire to control fatness are woven into the cultural fabric of the United States, representing people’s confused postindustrial desires, embodied in the contradictions of abundance and restraint, affluence and piety.

Notably, while contemporary societies conventionally view dieting as the preoccupation of women, dieters and diet authors prior to the twentieth century were more often men, defeating gluttony through masculine rationality. Schwartz

begins his history with the first American dieters, who followed the advice of health reformer Sylvester Graham, who with biblical zeal encouraged a simple and wholesome diet, emphasizing whole-wheat bread. From these origins, Schwartz traces social perceptions of body weight, which have evolved to view obesity as a threat to physical and moral health, vilifying fat as it has become further medicalized.

Schwartz's work reveals the somewhat chaotic and nonsensical history of diet regimens and the political, economic, social, and cultural factors that influence their rise and fall. Diets mirror society itself at a particular historical moment. Dieting practices also reflect a society's perceptions of gender and gender-specific characteristics, particularly ideal bodies.

Reasons for Dieting

Going on a diet often involves restricting or even "giving up" foods that one enjoys eating. Given that dieting can be an unpleasant experience physically, emotionally, and psychologically, why do individuals voluntarily diet? Independent of gender, the greatest motivating factor for going on a diet, or changing eating behavior, is to improve one's appearance, particularly in order to become more attractive to an existing mate or future romantic partners (Kiefer et al. 2005; Boyes et al. 2007). Body dissatisfaction is generally what fuels weight loss efforts, as, in many cases, one aspires to a gender-specific physical ideal.

In many Western societies, pressure to conform to a thin, ideal body weight inundates women, particularly through mass media. Notably, more women than men are dissatisfied with their bodies (De Souza and Ciclitira 2005). Particularly since the 1960s, women have aspired to a thin ideal, a culturally constructed and socially encouraged form of physical perfection (Bordo 1993). These conflicted efforts intersect with the construct of weight as a quantity under individual control, resulting in a personal responsibility to manage, limit, and restrain the body. In this way, weight in excess of the ideal is experienced as

a failure and source of shame. Employing the term normative discontent, Rodin, Silberstein, and Striegel-Moore (1984) argue that society not only propagates body ideals but also normatively accepts women's discontent with their bodies when they do not meet these ideals, which are out of reach for most individuals.

While focusing on female eating, dieting, and bodies in her work, *Unbearable Weight* (1993), Susan Bordo evaluates men in *The Male Body* (1999), revealing increasing male body anxiety. Just as for women, men are held up to an equally unrealistic ideal of the lean, chiseled, and highly muscular form. Along with an increasing focus on muscular bodies, analyses of popular culture have found an increase over the past 30 years in the number of images featuring semi-naked men. In part because of this media coverage, men also experience body image concerns, which appear to have begun increasing in the latter half of the twentieth century. For example, a recurring *Psychology Today* survey documented significantly increasing male body dissatisfaction over the course of 30 years with 15 % of men experiencing body dissatisfaction in 1972 compared to 34 % in 1985 and 43 % in 1997 (Garner 1997). Furthermore, among college-aged study subjects, men and women have been found to experience similar body dissatisfaction; for example, 95 % of men in one survey were dissatisfied with some aspect of their bodies (Mishkind et al. 1986). These burgeoning concerns have drawn scholarly attention, yielding new concepts, terms, and areas of study, which explore men and their relationship to their bodies, such as the Adonis Complex and muscle dysmorphia.

Gender and Eating

While men and women may experience similar body dissatisfaction, current research demonstrates several gender-specific differences in what and how they eat. From the beginning, men and women differ physiologically in their dietary needs. For example, men typically contain more lean body mass than women and thus possess a higher metabolic rate and require

a higher energy intake. On the other hand, women may experience physiological processes that men do not, such as menstruation, pregnancy, and breastfeeding, which alter a woman's eating habits and dietary needs. Furthermore, men and women's bodies differ. To provide a single example, to meet the demands of reproduction, women's bodies contain more body fat than men. Standards recommend that women's bodies contain 20–30 % fat, compared to men's recommended 10–20 %.

Beyond physiological determinants, men and women differ in other marked ways. In their review of gender and eating, Kiefer et al. (2005) summarize social perceptions of gender-specific differences that are related to nutrition. For example, the authors summarize a general dichotomy in nutritional behavior, stating that men are perceived to eat large portions quickly, while women exercise moderation and restraint. It is considered masculine to eat with gusto, while women are expected to demonstrate their femininity as light and dainty eaters. These social perceptions are exemplified in food marketing. For example, Hungry-Man dinners, microwavable meals available in the United States and generally composed of meat and starch combinations, are overtly named, identifying the product with brawny masculinity. Some dinner packages are stamped with the phrase "1 pound of food," emphasizing the large, heavy, manly quantity of food. Conversely, Dannon Light and Fit[®] yogurt sells low-fat dairy products with feminine flair. With the words light and fit, this brand describes not only the yogurt but also the body characteristics that the female consumer desires to acquire through consumption habits. The purple packaging and feminine fonts confirms that yogurt is not only a food that both men and women generally consider feminine but also a product uniquely formulated for female customers.

Kiefer et al. (2005) also discuss additional social perceptions of diet and gender. When categorizing food preparation skills, men are associated with barbecuing and grilling while women with cooking and baking. Specific taste preferences are even gender mapped, equating masculinity with savory and bitter flavors and

femininity with mild, sweet, and light ones. The authors also summarize how men and women differ in their approach to food. From adolescence, women are more interested and more knowledgeable on nutrition topics, more likely to control their body weight, at higher risk for eating disorders, and more likely to seek out nutrition advice than men. Conversely, men experience fewer food problems but tend to be more overweight. Men typically carry more weight in the abdominal region, which tends to be visceral body fat and associated with a higher risk of disease. While men are less likely to practice health-promoting behaviors and have higher risk for certain diseases, women experience eating behavior problems more often than men. In addition, women were found more likely to eat in stressful situations and to experience strong cravings for specific sweet foods.

The composition of men and women's diets also tends to differ. Typically, men's diets include more meat, animal products, alcohol, and high-starch foods, such as potatoes and bread, while women's diets include more fruits and vegetables, cereals, and dairy products (Kiefer et al. 2005; Jensen and Holm 1999). While women snack more often than men, both men and women show preference for sweet foods, such as chocolate, ice cream, cake, and cookies; women consider sweets to be less healthy but enjoy them more than men (Kiefer et al. 2005).

Dieting Differences Between Men and Women

Just as there are differences in how men and women eat, there are also differences in how they diet. The gender-coded nature of food production, acquisition, preparation, and consumption links women to food, both materially and ideologically. Furthermore, women have historically been more likely to diet and attempt to lose weight because of social attitudes regarding women's bodies, particularly Western ideals that privilege thinness. In addition, the historically feminine roots of nutrition science may explain men's comparative lack of interest in

food, nutrition, and health. Men typically approach food with an uncomplicated and enjoyable attitude, while women often have a more ambivalent and complicated relationship with food. Independent of actual body mass index (BMI), women are less satisfied with their bodies than men and more often aspire to the beauty ideal (Kiefer et al. 2005).

In a qualitative study of six British men's attitudes regarding dieting (De Souza and Ciclitira 2005), male participants stated that men and women diet for different reasons, acknowledging the increased pressure women are under to be thin but also discussing the different pressure experienced by gay men. While heterosexual men have, until relatively recently, experienced a lesser pressure to conform to a lean, muscular ideal, such a physical form has been longer embraced in the gay community. Such physical preferences result in higher rates of dieting and increased acceptance of dieting in the gay community compared to heterosexual men, as well as higher rates of eating disorders, such as body dysmorphic disorder and muscle dysmorphia (Strother et al. 2012).

Among young people, women typically desire to lose weight, while young men aspire to gain weight (Page and Fox 1998), a trend that also holds true for older adults (De Souza and Ciclitira 2005). A 2006 study of Midwestern college students found gender differences in dieting practices, as well as eating habits and nutrition beliefs (Davy et al. 2006). Notably, a significantly larger percentage of women had tried diets, such as Weight Watchers (6.6 % women vs. 1.0 % men), low-fat diets (19.3 % vs. 7.6 %), low-carbohydrate diets (15.5 % vs. 6.7 %), and vegetarian diets (4.4 % vs. 0 %). In addition, more men reported having never gone on a diet (79.1 % vs. 65.6 %). Some posit that when men do diet, they are often more successful in their attempts than women because they have not dieted multiple times throughout life, which appears to be a health protective act.

Masculinity, Eating, and Dieting

Gendered expectations may play a role in the differences between how men and women eat

and diet. It is argued that hegemonic masculinity shapes male role expectations, which may affect men's views and actions with regard to health, eating, exercise, and weight management (Gough 2007). These hegemonic constructions of male behavior favor strength, independence, and risk-taking, in effect disqualifying the masculinity of health-promoting behaviors, such as eating fruits and vegetables. Eating without anxiety for weight gain or health effects (generally, eating in a health-defeating way) is also considered masculine, while concern for health and practicing healthy behaviors is perceived as feminine. Characteristics, such as ample portions, and specific foods, such as red meat, are routinely framed as masculine. Meat in particular is broadly associated across many cultures with qualities such as strength, power, and virility and is thus considered a quintessentially masculine food that also serves as a symbol of masculinity (Jensen and Holm 1999).

In her analysis, Bentley (2005 in Heldke et al. 2005) discusses how low-carbohydrate diets, such as the Atkins and South Beach diets, prominently include and promote red meat as a "diet" food, thus masculinizing the act of dieting. Unlike low-fat diets, which promote foods generally considered feminine – such as fruits and vegetables, whole grains, and reduced-fat dairy products – low-carbohydrate diets endorse foods considered manly in American culture, including meat and eggs. In the same way, however, Atkins also made it more socially acceptable for women to eat meat, especially in public places. Bentley also notes, however, that while the high cost of protein-rich foods typically makes low-carbohydrate eating a diet of the financially comfortable, low-carbohydrate diets also include a variety of lower class foods, such as pork rinds, revealing yet another dimension of low-carbohydrate diets.

The once extremely popular Atkins diet provides one example of men forging into the world of dieting without inhibition. Unlike women who nearly universally diet to lose weight, however, equal numbers of men aspire to lose weight as those who seek to gain weight in order to become more muscular (De Souza and Ciclitira 2005).

Furthermore, men are more likely to manage weight by exercising rather than dieting.

The topic of men and dieting is an area worthy of further research. In their introduction to a special 2005 issue of *Food and Foodways*, Alice Julier and Laura Lindenfeld discuss the dually burgeoning fields of food studies and masculinity studies, identifying the many opportunities for these disciplines to speak to one another (Julier and Lindenfeld 2005). The articles featured in this special issue provide a robust overview and jumping-off point for such pursuits, though the editors acknowledge that the articles focus on affluent nations and socioeconomic backgrounds. While additional research in food and masculinity is encouraged generally, the editors specifically promote further studies of men and food “in ways that centralize race, nationality, migration, class, and sexuality in a global capitalist system.”

Gender and Obesity

In the United States and much of the world, obesity is a leading health concern. In 2009–2010, obesity prevalence for men (35.5 %) and women (35.8 %) in the United States was virtually equal (Ogden et al. 2012). What is concerning to some, however, is that while the obesity prevalence among women remained relatively constant over the course of a 10-year period, men’s obesity increased from 27.5 % in 1999–2000 to 35.5 % in 2009–2010 (Ogden et al. 2012). It is within this context that discussions of gender and dieting occur. While the perceptions, ideals, eating behaviors, and dieting practices of men and women differ, current weight statuses, at least in the United States, are quite similar.

As a problem of excess body fat, the solution to obesity is often framed within the context of weight loss by means of reducing the amount of energy consumed and increasing the amount of energy expended. Dieting, whether following the guidance of a physician or adhering to the latest “fad diet,” is a popular method for weight loss. While data demonstrates that successful weight loss is difficult and

rare, significant numbers of Americans are trying to lose weight. Of those at “normal” weight, 10 % of men and 29 % of women are dieting, compared to those who are overweight (36 % of men, 60 % of women) and obese (63 % of men, 70 % of women) (Bish et al. 2005).

However these efforts are pursued, gender remains a powerful factor in dieting and eating behavior that is worthy of additional study, particular among men.

Summary

Dieting is generally defined as eating sparingly and according to prescribed rules in an effort to control weight. Just as men and women differ in their dietary needs and eating behaviors, they diverge in their approaches to weight loss. Both men and women are motivated by the desire to align their physical selves with culturally constructed body ideals, most often to appear more attractive. Dieting, however, is generally feminized. Furthermore, weight loss is the customary recommendation for combating obesity, rates of which are very similar among both men and women in the United States. In general, more research is needed in the area of men and dieting, a topic located at a unique juncture between food studies and gender studies.

Cross-References

- ▶ [Eating Disorders and Disturbed Eating](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Gluttony](#)
- ▶ [Medicalization of Eating and Feeding](#)
- ▶ [Obesity and Consumer Choice](#)
- ▶ [Obesity and Responsibility](#)

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Gender Inequality and Food Security

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Synonyms

Agricultural development; Equality; Feminism; Hunger; International development; Right to food

Introduction

Chronic hunger and malnutrition are pervasive issues for large populations across the globe. At last calculation, the Food and Agriculture Organization of the United Nations estimated that 842 million people are not able to meet their daily dietary needs, the vast majority of whom live in developing countries (FAO et al. 2013). The international development community usually measures hunger and undernutrition in terms of food security, which is determined by assessing four indicators related to food and nourishment: availability, access, utilization, and stability. Food security is not achieved until a household can meet all four of these requirements in terms of its food intake.

In recent years, gender has been identified as an integral part of food security interventions for a number of reasons. Women and girls are among the most vulnerable to hunger and malnutrition, and at the same time, they are assuming a greater role in global agricultural production (FAO et al. 2013; FAO 2011). Yet women, including female farmers, face discrimination due to culturally and

socially constructed stereotypes of gender roles, impeding their ability to farm as effectively and productively as their male counterparts. The challenge for governments and international development workers thus becomes protecting and promoting women's nutrition while simultaneously empowering women to produce higher agricultural yields for both household consumption and economic gain.

Due to the high concentration of food insecurity and gender inequality in poor, developing countries, most large-scale interventions (e.g., Millennium Development Goals) are targeted at these regions, particularly Asia and sub-Saharan Africa. Although food insecurity and gender inequality affect populations everywhere, this entry will similarly focus on the context of the developing world.

Background

The formal definition of food security, which emerged from the 1996 World Food Summit, is as follows: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for a healthy and active life" (FAO 1996). Although the experience of food (in)security is often subjective – varying between households, countries, and cultural contexts – the international development community measures food security in terms of availability, access, utilization, and stability. Generally, a household is considered food secure if food is *available* to it in the region, it has physical and/or financial *access* to the food that is available, the food is culturally appropriate and *utilized* within the household so that all members' dietary needs are met, and all three of the above conditions are *stable* over time.

Women are essential to securing the *availability* and *access* components of food security in their households and communities: on average, they comprise 43 % of the agricultural workforce in developing countries (FAO 2011). However, women's potential agricultural yields are stunted by socially and culturally constructed gender

roles – assumptions about men and women that dictate allocation of assets and obligations (FAO 2011). Fortunately, because stereotypes about gender are socially constructed, it is possible to reshape gender roles over time through collective action, public policy, and a number of other cultural influences. The Food and Agriculture Organization of the United Nations (FAO) estimates that if women are given the same access to agricultural production resources as men, their yields would increase by 20–30 %, in turn increasing agricultural output in developing countries by 2.5–4 % and reducing the amount of hungry people in the world by 12–17 % (FAO 2011).

Women are also essential to the *utilization* component of food security. In addition to being responsible for preparing meals, women are the primary caretakers of children, as well as family members who are elderly or chronically ill. Numerous studies have shown that in comparison to men, women spend a larger percentage of income on food (Akanji 2013). Consequently, in households where women control the budget, family members have better nutrition levels and childhood survival rates increase by 20 % (UNGA 2012). This higher quality of care that women provide, particularly to children, thus improves the health of future generations (FAO et al. 2010).

Given these figures, it is clear that empowering women with the resources they need to increase agricultural production and reshaping gender roles to give women more bargaining power within the household will improve global food security.

Gender Inequality in Agriculture

Gender inequality in the agricultural sector manifests in several ways. One of the greatest disparities between male and female farmers is land ownership. Recent figures from the FAO indicate that women own, on average, only 15 % of land in developing countries, falling as low as 5 % in Oceania, North Africa, and West Asia (FAO 2011). This significant inequality in property rights creates barriers for women not only in

terms of agricultural production but also when attempting to obtain loans – a process that often requires formal proof of land ownership for collateral. Without the security of land tenure, women are also less likely to experiment with innovative farming methods and technologies (a problem compounded by their inability to access lending services). In the absence of formal ownership and inheritance rights, women are also less likely to act as stewards of their land by taking actions to improve soil fertility and biodiversity to preserve the soil for future farming (IFAD 2012).

Gender inequality extends from subsistence farming to large-scale commercial farming as well. Women's access to tools and resources necessary for expansion into commercial agriculture is limited, including access to improved seeds, fertilizers, pesticides, and other agricultural inputs, as well as agricultural extension services (e.g., training and farmer field schools) and commercial markets. These inputs are needed to increase yield and minimize labor on large plots of land, and extension services ensure that farmers access new technology and farming methods to improve efficiency. Men are typically the beneficiaries of these resources and services, leaving women dependent on rainfed agriculture – a slower, more labor-intensive farming method that is also more vulnerable to climate shocks (IFAD 2012).

Women are also limited by their education levels, which are significantly lower than men's in nearly all developing countries (FAO 2011). In poorer households, girls are often removed from school earlier than boys when parents cannot afford school fees, usually because gender stereotypes dictate that education is more valuable for boys than girls. In countries where women face discrimination in their reproductive rights, they are often expected to marry and begin bearing children at an early age, suspending their formal education as a result. Education levels have a positive correlation with agricultural production, income, and nutrition in a household (FAO 2011). Higher levels of formal education allow women to seek additional economic opportunities outside the agricultural sphere, further

contributing to household income and strengthening women's bargaining power within the family unit. Current research shows that improving women's education is in fact the single-most influential factor in improving a household's food security (UNGA 2012).

One of the greatest constraints on women's farm production is time poverty. In addition to agricultural work, women are also responsible for household duties including caregiving for children, elderly, and sick members of the family, fetching wood and water, preparing and serving meals, and a number of other domestic tasks. Women often assume these roles in part because of sociocultural expectations about gender and also due to the fact that they have less economic independence and bargaining power within the family. This unpaid domestic work is commonly referred to as the "care economy," and it requires a substantial amount of women's time, especially in developing countries where social programs to assist in child and healthcare are largely absent. Time-use surveys indicate that when the care economy is incorporated into time measurement, women work considerably longer hours than men, shouldering up to 90 % of the time spent on food preparation (FAO 2011).

Feminization of Agriculture

The abovementioned gender inequalities in the agricultural sector compound the threat of food insecurity due to a growing trend called the "feminization of agriculture." As developing countries become more industrialized, the agricultural sector becomes highly concentrated, commercialized, and export-driven. What was once a collection of small-scale family farms shifts to large-scale, export-driven farming operations (DeSchutter 2013). A mass rural–urban migration usually accompanies this transition as rural agricultural workers trek to urban centers to seek work as waged laborers on commercial farms or to find employment in other sectors. The overwhelming majority of these rural–urban migrants are men, in part because of gender expectations and also because they have the education levels

required to seek diversified employment opportunities, as well as fewer time constraints. Women are left in rural areas tending to the household and the family farm, triggering a pronounced increase in the percentage of female agricultural workers in comparison to men (Agarwal 2011).

In addition to assuming the responsibilities of subsistence farming from their male counterparts, some women also begin farming to produce food for markets (DeSchutter 2013). Here, the limitations women face in terms of land ownership, access to inputs, education, and time constraints can have significant impacts on farm productivity. Without the collateral needed to secure loans, women cannot purchase the inputs needed to increase agricultural yields. Raising livestock, including chickens and dairy animals, presents another opportunity for women to gain capital in agricultural markets. Women make up approximately two thirds of livestock keepers, and the practice offers an appealing alternative mode of income generation in countries where women's land rights are restricted (FAO 2011). However, much like traditional land-based agricultural activities, time required of the care economy limits women's ability to manage the same quantities of livestock as men. Their working hours are restricted, as is their ability to travel to markets to sell goods. As their farm and livestock enterprises scale up, women are often forced to relinquish control of operations to men, who are more likely to have the time and financial resources required to manage a larger business. If women are to remain essential to agricultural production, these obstacles must be removed to ensure they reach production levels required of their households, communities, and regional markets.

The feminization of agriculture also occurs outside the realm of subsistence and small-scale farming. In comparison to men, only a small portion of women in developing countries seek employment for wage, but those who do are more likely to work on farms than in any other sector. In Asia and sub-Saharan Africa, between 60 % and 70 % of female wage earners work in the agricultural sector (FAO 2011). As countries develop and agriculture becomes more

commercialized, women will find more opportunities to work for wages on large-scale industrial farms (DeSchutter 2013). Here, they face a new host of issues including widespread discrimination among waged agricultural workers, hazardous working conditions, and exploitation due to their minimal bargaining power. Without the education needed to pursue other employment opportunities, women are left with few options in the labor market, and in the agricultural sector, they are often forced to settle for low-paying temporary or seasonal work (DeSchutter 2013). Gender stereotypes can also prevent women from obtaining higher-paying jobs along the supply chain, stifling their opportunities to advance in their careers (FAO 2011).

Gender Empowerment in Agriculture

Because of these gendered restrictions, women are circumscribed to low-productivity agriculture and their yields are consistently lower than men's. However, a number of studies have shown that this discrepancy in output levels is entirely attributable to women's restricted access to land, inputs, technology, extension services and labor, as well as time restraints due to the care economy (Agarwal 2011). Some studies suggest that without these gendered constraints, female farmers would produce *higher* yields than men (Agarwal 2011). Using data from the OECD's Social Institutions and Gender Index, the FAO found that lower levels of gender inequality correlate positively with higher average cereal yields (FAO 2011).

As the proportion of women in the agricultural sector continues to rise, their habitually lower production levels have serious implications for the future of food availability in developing countries. Eliminating gender inequality and empowering female farmers thus becomes imperative to increasing agricultural outputs and achieving food security in these areas.

Empowering women in the agricultural sector will require a number of institutional, social, and cultural changes, perhaps the most important arising from the reformed perception of

women's capabilities and responsibilities in the agricultural sector. In countries where they are viewed more as helpers than farmers, women face more difficulty in accessing the resources and services needed to improve their yields (Agarwal 2011). This type of cultural shift can be challenging to execute, but with the help of gender-specific farm policies and programs, as well as coverage in the media, stereotypes and misperceptions of gender can be challenged and overcome (Agarwal 2011).

First, state and local governments need to amend land ownership and inheritance rights to allow women to purchase and inherit property in the same manner as men. In many developing countries, the formal rights to land titles within a household are customarily given to the men. Traditional patterns of land inheritance similarly benefit men over women; throughout Asia, Latin America, and sub-Saharan Africa, parents favor sons over daughters when passing down land, while local chiefs and community leaders typically allocate land to men under the assumption that it will be shared with female family members (FAO 2011). Even in countries where women are given the same legal rights to inheritance and land ownership, they often face an uphill battle in exercising these rights due to flawed legal structures and persistent gender bias toward men (Agarwal 2011). The change will need to come first within national land rights legislation – ensuring equal ownership rights to men and women – followed by reform in legal implementation and customary law. The latter can be achieved with the help of community leaders and collective action by women themselves (FAO 2011). Educating both women and men about their land rights will be imperative to sustaining these changes, a task which both governments and NGOs can undertake.

Second, women need to be given equal access to farm inputs, extension services, and training. In most cases, modern farming technologies (e.g., improved seed varieties and fertilizers and the knowledge of how to properly plant and apply them) are disseminated by farm extension agents – public sector employees who make on-site visits to farms or farmer cooperatives to

educate agricultural workers. The majority of extension agents are male, which poses several problems for female farmers. In some cultures, it is considered inappropriate or taboo for a male to meet socially with a female, especially if she is unmarried or widowed (FAO 2011). Male extension workers are also less aware of the constraints and knowledge gaps specific to female farmers and therefore may not address those issues. Because men have fewer domestic obligations, they are usually the household members who meet with agricultural extension agents, under the assumption that they will then pass that information on to the women, which is not always the case (UNGA 2012). In order to reach more women through extension services, governments and NGOs should make a concerted effort to hire more female extension workers and to train male extension workers on the specific needs of female farmers (FAO 2011).

Third, research and development (R&D) on improved agricultural technologies with respect to women's needs will contribute to higher output levels on female-tended farms and improved household food security. The first step in this process is identifying women's priorities and constraints. For example, women are generally limited by the labor intensity of certain crops, both because they typically cannot hire additional labor and because their own on-farm time is limited. Developing farming systems or mechanizations that minimize farm labor can increase women's productivity tremendously (Meinzen-Dick et al. 2010). Women also have different priorities in terms of the types of crops they choose to produce. Whereas men are often responsible for high-input, high-yield cereal crops that meet the market demands of capitalized agriculture, women are more concerned with the ease of preparation, nutritional content, and taste of the food they harvest (Meinzen-Dick et al. 2010). Most R&D efforts are gender-biased toward men, as the primary objective is increasing yields of commercial crops. For agricultural research to benefit women, it is imperative that researchers consult with female farmers to determine the gender-specific needs that can guide future research (Meinzen-Dick et al. 2010).

Women farmers are also valuable sources of climate- and culture-specific agricultural knowledge that researchers may otherwise never uncover (Meinzen-Dick et al. 2010).

Fourth, making capital available to women, typically through microfinance programs, will provide them with the financial resources they need to enter into market-based agriculture or pursue other business endeavors. Formal financial services (e.g., savings, loans, and credit) are usually inaccessible to the poorest populations in developing countries and even more so for women (UNDESA 2009). Yet access to credit and savings is essential for women's empowerment – it affords them bargaining power within the household and can serve as a contingency fund during periods of food insecurity. Microfinance programs are usually administered by NGOs, offering small-scale loans to poorer clients. Many are targeted specifically at women, who have a higher rate of loan repayment than men (UNDESA 2009). These lending programs are only effective, however, when accompanied by financial literacy education for women, teaching them how to make the best long-term investments (DeSchutter 2013). Research has shown that in some cases, male household members take advantage of women's preferred status as loan recipients and use their wives to obtain loans for their own purposes (DeSchutter 2013). Therefore, in communities where female-targeted microfinance programs are implemented, male household members should similarly receive sensitization training on the importance of supporting and allowing women to control loans (DeSchutter 2013).

Finally, promoting female farming cooperatives will give women more leverage to apply for loans, pool resources to obtain agricultural inputs, and use collective action to affect gender-equal programs and policies. Farming co-ops can take many forms. Some are social groups that meet for educational purposes, often in the company of an agricultural extension agent who can teach co-op members about effective farming tools and methods. Others function as a group farming system, in which a collection of individual female farmers works together to produce

crops for agricultural markets. The benefits of group farming are extensive: women can consolidate finances to buy input and equipment for the collective, increase production and profits by reducing time and costs, access formal loans and credit with greater ease, spread the risk associated with climate and price fluctuation over a larger group, and increase bargaining power with government agencies (Agarwal 2011; DeSchutter 2013).

Of course, this is not a comprehensive list of suggestions for empowering women as agricultural workers and should not be treated as such. As mentioned above, formal education and redistribution of tasks in the care economy are also necessary for women to garner more bargaining power in the household. Moreover, all of the suggested reforms must be met with a shift in the cultural perception of gender roles that no longer discriminates against female members of society.

Ethical Issues in the Feminization of Agriculture

Although researchers and international development professionals unanimously agree that empowering women and eliminating gender inequality in the agricultural sector will improve global food security, these sociocultural transformations do not come without additional challenges. In a recent paper, the UN Special Rapporteur on the Right to Food Olivier de Schutter highlights the dichotomies that arise from the feminization of agriculture, both on the household subsistence level and in commercial agriculture (2013).

First, while many of the proposed programs and policy changes outlined in the previous section are intended to make homestead farming more efficient and productive for women, they also run the risk of perpetuating the gender roles that have kept women in the domestic sphere up to this point (DeSchutter 2013). Many of these support programs do little to expand the choices available to women outside the home; instead, the programs make women's current farming

operations more productive while the onus of household food security and the care economy remains on the female head of household.

Some of the suggested interventions, notably microfinance and lending programs, do have the goal of “emancipating” women from subsistence farming to participate in market-based agricultural operations (DeSchutter 2013). Unfortunately, when women leave the home to work in a capitalized system of farming, they may simply be transitioning into a new cycle of exploitation in which they are beholden to long hours and low wages and sometimes enlisting their children to help make output quotas for commission (DeSchutter 2013).

DeSchutter identifies opportunity as the key force behind female empowerment. Neither subsistence farming nor commercial agriculture and wage labor should be the default option for women farmers. They should have the freedom, both in legal and cultural respects, to make a choice about their futures, whether on or off the homestead (2013).

Summary

On average, women comprise 43 % of the agricultural workforce in developing countries, making them essential to global food production and food security. However, socioculturally constructed gender roles prevent women from reaching their full potential as producers. Gender stereotypes limit women’s access to the tools, technology, knowledge, financial resources, and time required of market-based farming. As the proportion of women in the agricultural sector increases in comparison to men, a number of ethical questions arise about how women should be supported in both subsistence and commercialized agriculture.

Cross-References

- Access to land and the right to food
- Africa, Food, and Agriculture
- Agricultural Cooperatives

- Food and Agriculture in Bangladesh
- Food Security
- Gender Inequality and Food Security
- Human Rights and Food
- Sub-Saharan African Agriculture

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Gender Norms and Food Behavior

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Synonyms

Body; Cooking; Dieting; Eating; Economic; Farming; Fat; Femininity; Masculinity; Nutrition; Obesity; Sustainability

Introduction

Hilde Lindemann (2000) points out that philosophical theories are often based on a flawed picture of society in which the private sphere is utterly isolated from the public sphere – a distinction going back to John Stuart Mill – and what is done in the private sphere is often erroneously considered no fit subject for issues of ethics or justice, certainly not of politics. A classic example is that caregiving by family and friends is seen as a matter of personal obligation but not of justice or politics (feminist treatments of dependency work critique this stance). Like caregiving, many food behaviors occur within this private sphere as people cook meals, grow vegetables in small gardens for supplementation or subsistence, consume meals, or keep food animals for subsistence use or informal trading of eggs and milk. Such “private” food behaviors occur in every society, in both urban and rural settings in the global north and the global south, and are often performed by women. By comparison, food production and preparation which occur within the public sphere – on farms, in restaurants, and so forth – are far more visible and more easily counted and acknowledged in economic calculations (Waring 2004).

Food behaviors, both private and public, are deeply affected by gender norms concerning both masculinity and femininity. In some ways,

food-centered activities constitute gender relations and identities across cultures (Counihan and Kaplan 1998). This entry provides a non-exhaustive overview of how gender norms bear on food behaviors broadly construed, focusing on three categories: food production, food preparation, and food consumption.

Food Production

Food production can differ widely in various economic settings within and between nations. Gender norms governing control and ownership of business, as well as roles in policy-making, routinely mean that even women who are engaged in agricultural work in the public sphere have little say in its conduct. Those engaged in agricultural work in the private sphere, through the use of home gardens for supplementation or subsistence, find their work to be invisible to standard economic measures (Waring 2004).

Carolyn Sachs warns against overgeneralization about rural women involved in agricultural work, noting that they are diverse in race, class, ethnicity, and sexuality. Yet, she argues rural women do suffer from institutional subordination in agricultural work around the world. State agricultural policies regarding domestic and foreign programs have typically supported what she describes as “patriarchal family farms” through extension loans, government loans, development aid, and marketing policies (Sachs 1996). These farms, for good or ill, have been disrupted as large-scale industrial agriculture increasingly provides for the food production needs of domestic and global markets. Sachs argues that this will not necessarily benefit women, however, because – as with so many corporate structures – few women hold positions of power in agro-industries (those who do are likely to be those whose race and class already provide them privilege): “Rather, such systems tend to exacerbate class, ethnic, and racial differences and privileges in rural areas and often rely heavily on the cheap labor of working-class people, especially racial and ethnic minorities” (Sachs 1996).

Such commercial work, being conducted in the public sphere, at least receives economic valuation even as it tends to benefit men more than women and some women more than others. Supplemental food production – backyard vegetable gardens or the keeping of chickens for eggs – and subsistence farming are utterly invisible to traditional economic measures (Waring 2004). As Sachs (1996) notes, studies on sub-Saharan Africa report that women produce roughly 80 % of the food and provide household water by transporting it from pumps, wells, or waterways. Though critical to family welfare, subsistence farming remains invisible economic-based policy measures. Since gender norms dictate that “private” food production be done overwhelmingly by women – carrying water in particular is seen as work for women and girls – their role in food production is often simply irrelevant to those in power even as it is deeply relevant to their families. Meena Bigli attests that 70–80 % of the Pacific Rim’s working women work in the agricultural sector, yet many countries continue to focus on men as planners and decision-makers for agricultural policy and problem-solving, nor are women targeted for capacity building and education in the sector (Report of Women Major Group 2007). Similarly, Signora Maria Francisca de Belo Assis noted that rural women farmers in developing nations such as her own Timor-Leste need to compete in the market economy but do not have adequate information and are not included in decision-making. She argues that this is necessary in order to make rural and sustainable development a reality (Report of Women Major Group 2007).

In the United States, there is a movement to bring more women into agricultural work as business owners, especially in the sustainable food industry. However, even this is fraught with gender norms. Costa (2010) carefully notes that women have long been underrepresented in the public sphere with respect to agriculture despite the work they do at home and outside the home with respect to food production, planning, and preparation. Women indeed do a great deal of work on food production, both as farmers and advocates, comprising 61.5 % of the employees

and 60 % of the executive directors of the top 15 American nonprofits focusing on sustainable agricultural issues. And yet, it is gender norms that drive the success of women in this field: by way of explanation, Costa (2010) notes that women are mothers of children, are nurturers of health, and have the largest impact and concern when it comes to what they feed themselves, their families, and the wider community.

Sustainability has come to be seen as an appropriate women’s issue, as has the quality of crops and meats. While this increases women’s involvement in agricultural policy, it too is based on gender norms. As Marilyn Frye (1983) points out, women’s anger and passionate concern are most likely to be given uptake when it falls within an appropriate, gender normative sphere of concern. With respect to agriculture, concerns over food safety for women’s families, and the condition of the world left behind to their descendants, are just such concerns.

Gender norms often keep women from economically and politically powerful positions in the public sphere of food production despite their work in both public and private food production. Exceptions most often occur when the ways in which women seek power over food production line up nicely with gender norms about their proper role in caring for others.

Food Preparation

Food preparation, like food production, is structured by the flawed private-public divide. Though reinforcing that divide is problematic, it is useful to point out how that divide plays a role in the way that both masculine and feminine gender norms shape food preparation behaviors. On the private side, we have home cooking and service cooking by volunteers working in community settings such as churches or food charities. On the public side, we have commercial cooking performed in restaurants, hotels, and schools. Gender norms affect food preparation.

Home cooking is a loaded activity in Western cultures and around the world, often heavily

gendered (Reiheld 2008). It is often considered women's work and feminized according to gender norms, seen as properly the duty of women; where home cooking is acceptable for men, it tends to be masculinized or is seen as a "favor" or supererogatory. An influential review paper of research on gendered division of household labor in America found that nearly two-thirds of total housework hours are spent cooking and cleaning, work which continues to be – and to be seen as – much more often the purview of women than men (Bianchi et al. 2000). Both cooking and grocery shopping show similar patterns in many studies and many developed countries (Lippe et al. 2011), including the Anglo-heritage countries such as Australia, the United Kingdom, and the United States (Dixey 1996; Breen and Cooke 2005). In particular, highly educated and married women in masculine cultures do less paid work and more housework such as cooking than do their counterparts in more feminine cultures (Lippe et al. 2011).

This gendering of cooking as women's work begins early in American culture, as the division of children's chores shows: in families with both boy and girl children, girls are more likely to be assigned cooking and cleaning chores while boys are more likely to be assigned maintenance chores such as mowing the lawn or repairing things or taking out the trash. Both children's and adult's divisions of household work in the United States follow gender lines, and both children and adults generally do not question such stereotypical divisions (Schuette and Killen 2009), no less so with cooking.

This goes beyond Europe and Anglo-heritage countries. In 1974, O'Laughlin (Furst 1997) reported that in many non-Western societies, men did not do the cooking and had never learned to cook because doing women's work was considered shameful. In one society, cooking was defined explicitly as women's work, and the pots as women's tools, so much so that men were looked upon as no longer men if they used the cooking pots.

However, in Europe and the Anglo-heritage countries, there are certain kinds of cooking that are gendered masculine. One of these is

barbecuing outdoors on a grill or an open flame, especially when cooking heavy meats such as steak. In America, men often take great pride in being good at the grill, as depicted in numerous television ads, but are rarely depicted doing the regular cooking which tends to be gendered feminine.

Regardless of how often gender norms dictate that men should occasionally cook, gender norms also still hold women responsible for the nutritional status of their household. However, doing so ignores how deeply access to food, cooking skills, and cooking time are situated in class, culture, race, and gender. Nowhere is this more apparent than in public health campaigns over obesity and childhood nutrition. Breastfeeding campaigns by the Department of Health and Human Services in the United States, for instance, use slogans such as "breast is best" and, more recently, "babies were born to be breastfed." As Rebecca Kukla has pointed out, the strategy of such campaigns focuses on women as the only relevant moral agent who needs to be convinced; if only such campaigns could reach women, it is assumed they would change their behaviors. Yet, women are overwhelmingly aware of the evidence that babies are healthier when breastfed. Kukla points out that this underlying assumption – that women simply haven't been convinced yet – ignores the vast array of constraints on women's lived experience that restricts their ability to breast-feed, including but not limited to lactation difficulties, workplaces which do not allow adequate maternity leave or facilities to pump breast milk, social stigma against public breast-feeding, and lack of safe spaces in which to breastfeed. Kukla argues that "there are many American women, especially women from the socially vulnerable groups least likely to breastfeed, for whom breastfeeding is not in fact a livable choice" for reasons that go beyond barriers to the very culture that is in fact asking women to put their babies' nutritional needs first (2006). This has potential bearing on UNICEF's initiatives to increase breastfeeding globally, some of which attempt to involve those around mothers rather than aiming squarely at mothers.

Breastfeeding is not the only way in which women are held responsible for the family's nutritional status, however, especially in the context of rising obesity rates in both the global North and South. A quick survey of articles published on children's nutrition shows that those addressing mothers consider food preparation (and the mother's own food consumption) as well as maternal income, whereas those considering fathers solely or as well as mothers focus on paternal income's impact on the nutritional status of children. In the United States, women still make the primary healthcare decisions in two-thirds of American households and are primarily responsible (in two-parent heterosexual marriages) for making the kids' doctor appointments and conveying them to and from appointments. This responsibility for family health in general is consistent with what Joan Wolf (2007) calls an ideology of "total motherhood" in which mothers are held responsible for any harm that may befall their children. This extends to nutrition, at which point the family becomes the site of intervention with women responsible for that intervention (Lupton 2013), and not only in the United States. In the 1990s, children in Nepal faced widespread vitamin-A deficiency which can have serious health consequences. Health experts recruited grandmothers – who had time to get the pills out and authority to make sure they were taken – to distribute nutritional supplements. As of 2005, 48,000 grandmothers distributed vitamin A to 3.5 million Nepalese children. Development agencies often give resources or money for children's health to women in the family, knowing or suspecting that men are more likely to spend it on themselves (Kluger 2010). Dixey (1996), writing about nutritional programs designed to teach healthy cooking and eating skills in the face of rising obesity, cautions against targeting only women and girls with opportunities to learn how to provide healthy food lest cooking skills come to be seen as part of an attempt to re-create traditional gender roles.

Such attention to women as responsible for family health has obvious pragmatic benefits, since dominant gender norms mean they are best situated to improve family health. As with

breastfeeding, however, this general responsibility ignores the situatedness of women's decisions about food acquisition and preparation. Aphramor and Gingras (2009) note that dieticians who advise patients and caregivers on improved eating focus overwhelmingly on "eating plans" and individual agency over them when assisting women in combatting obesity for themselves and their families. This individualistic approach, they say, conserves a "limited, consumerist, and decontextualized understanding of health and fatness in which issues of power, inequity, and gender remain peripheral and occluded," creating a "theoretical desert" with little real hope of achieving health. As an example, we might consider the limited access many Americans have to fresh fruit and vegetables, as exemplified in the US Department of Agriculture's conception, and maps of "food deserts," areas in which access to food is restricted to prepared food and very little fresh food. Abigail Saguy (2013) notes that our assessment of women as food preparers in the private setting is deeply embedded in race and class. She gives the example of Katherine, a young anorexic white woman whose mother drops everything to whip up a three-course meal if Katherine says she is hungry, an example we often view approvingly. However, by contrast, a poor black single mother may lose custody of her son as he gains weight despite her best efforts to take him to the Y and ensure he eats healthy food whenever she can watch him given her time-consuming minimum wage job. As Saguy notes, the white family is considered to have a daughter with a terrible illness while the black family is treated as having a son who suffers from neglect (Saguy 2013). Such assessments are insensitive to class concerns and race issues, especially given the vast disparities in time and resources. Lack of attention to issues of class or geography inappropriately places blame for unhealthy food preparation on individuals who, because of gender norms governing food preparation, are overwhelmingly women around the world.

It is not only nutritional status for which women are held responsible when it is assumed they cook but the very nature of the family. Anglo-heritage nations have long – but not

always – depicted cooking, and housework more generally, as a source of feminine virtue and a duty to family (Reiheld 2008). Recent rhetoric over family values in the United States has urged families to have more sit-down meals, on both public health and moral grounds. With respect to the latter, it is claimed that families are more functional, and a flourishing and good life more attainable, when family members have dedicated time together without the interruption of television, telephone, or portable computing devices. The burdens of preparing sit-down meals fall on women, whom we have seen are generally held responsible for meals the world over. Indeed, a large survey of British women found that they had adopted the norm that “the proper meal” confirms the family as a “proper family” and is, by definition, made by the wife (Furst 1997). In such ways are the norms of domestic femininity often constituted by food behaviors.

Reinforcing the importance of the private-public divide for how cooking is evaluated, Furst notes that cooking may be understood as an expression of “a rationality of the gift,” in which the production of use-values in the home is seen as a gift to loved ones. It should be noted that this notion of cooking as a gift makes it a private matter nearly immune from critiques of fairness which might be levied on an exchange of goods or services that takes place in the public sphere. By contrast, Furst presents “the rationality of the commodity” which governs production in the market. Since food production in the home, still largely performed by women due to gender norms, has no market valuation for reasons discussed by Waring (2004), this form of “women’s work” has far less social value than cooking performed in the public sphere which is visible to markets. That work, while sometimes performed by women, has high-status variants in the form of professional chefs. Chefs and heads of staff in commercial kitchens remain overwhelmingly men. As Furst puts it, when men do the cooking, it is mainly public cooking, the food of money and prestige. It is important to add to this, however, the above-noted fact that when men do home cooking in the private sphere, it is

more often than not highly masculinized with fire, meat, and so forth.

Gender norms strongly affect food preparation behaviors, in ways ranging from division of this labor to holding women responsible for the health of their families and whether the family is a good one. Gender norms also relegate women’s food preparation predominantly to the private sphere, while men’s food preparation is masculinized, often higher status, and generally in the public sphere.

Food Consumption

Food consumption behaviors are no less governed by gender norms than food production or food preparation. And since everyone eats – though not everyone produces and prepares food – food consumption behaviors are perhaps the area in which it is easiest for most people to see how their behaviors are affected by gender norms.

Perhaps the most obvious way is with dieting. Sandra Bartky (1998) influentially describes femininity, and its associated gender norms, as a “disciplinary regime” governing the state of feminine bodies, requiring training so as to achieve normative shapes and habits. She questions the public-private divide and argues that where gender norms – especially those of femininity but also of masculinity – are concerned, there is no real distinction between the public and the private: we must keep in mind that the Second Wave feminist slogan “the personal is political” applies also to the “production of the ‘properly’ feminine subject” (Bartky 1998). Dieting is, for Bartky, a paradigmatic disciplinary practice of femininity. If we take dieting out of the Western context of striving for taut, small-breasted, and narrow-hipped bodies, it can apply to any disciplinary form of eating in order to achieve whatever the feminine norm might be even if that norm is the large-bodied “traditionally built lady” of Botswana described in Alexander McCall Smith’s popular No. 1 Ladies Detective Agency novels. The goal of dieting, regardless of the specific body-shape norm, is of a “properly” feminine body.

Bartky noted a still-true fact that the majority of American women and girls – and an increasing percentage of men and boys – report being on a diet at any given time. One might attribute this to health concerns in a world with increasing obesity except that diet products and even public health campaigns routinely urge smaller bodies rather than healthy eating, and media are filled with promises of rapid weight loss rather than improvements in cholesterol, diabetes risk, or other health indicators. Dieting to restrict calories, as Bartky says, “disciplines the body’s hungers: appetite must be monitored at all times and governed by an iron will.”

Persons who appear to have “failed” at this discipline, who have bodies too fat by some standards or too thin by others, are regarded as actually unable to control their own appetites; as Susan Bordo says, the overeater becomes a libertine (Bartky 1998). Abigail Saguy (2013) illuminates how class and race further complicate such judgments, arguing that stereotypes of African-American women as having unbridled appetites inform discussion of their food consumption and body weight. Drawing a wall of separation between the disciplined and undisciplined disrupts the possibility of social solidarity between women of different body types, and to the extent that fat people are also poor minority women, discussions of irresponsible “fatties” shore up prejudices against women of color (Saguy 2013). It is worth noting that in cultures where larger, even fat, bodies are considered the feminine ideal, it is in part precisely because access to more calories allows such a body to be produced. Access to more calories, and the discipline to consume them no matter your body’s own signals, then indicates both discipline and relative wealth. Gendered expectations for bodily discipline, shaped also by race and class, make failures of those whose bodies appear undisciplined.

While men are far less subject to the need to discipline their bodies with respect to norms of masculinity, nonetheless, this does affect men. Achieving the masculine body norms of visible muscle tone and definition can require dieting, but most certainly requires not only exercise but

a certain kind of exercise aimed at producing a certain kind of musculature. Masculinity, too, is a disciplinary regime aimed at producing the “properly” masculine body. For men as for women, lack of discipline becomes an individual failing.

Gender norms driving food consumption apply not only to body size and calorie consumption but also to what is considered appropriate for men or women to eat. Some elements of French culture view fish as inappropriate for French men to eat because the flaky texture of fish must be eaten in small mouthfuls and chewed gently in a way that contradicts French norms of masculinity (Furst 1997). Women in many Anglo-heritage and European nations are expected to eat salads; it has recently been noted that Internet image searches for a person eating salad are almost universally images of happy, laughing women eating salad. This means of consuming this particular food comports with culture-specific gender norms of self-discipline and feminine bodies. Examples of gendered foods abound, and social status is lost for men if they eat feminine foods in feminine ways, gained when they eat masculine foods in masculine ways. Women, by comparison, lose status by eating masculine foods in masculine ways and retain it by eating feminine foods in feminine ways.

As with self-control and will in food preparation – whether breastfeeding or family cooking – food consumption is deeply affected by norms about both bodies and foods, norms whose nature and application are highly gendered and deeply embedded in culture, class, and race.

Summary

The public-private distinction, though of dubious utility, plays a significant role in how gender norms govern the three food behaviors considered here: food production, food preparation, and food consumption. Norms of domestic femininity are commonly constituted by food behaviors. The impact of gender norms on food behavior is often complicated by issues of culture, class, and race. Several gender norms are of particular

importance, especially norms which make women responsible for others, specifically within the traditional private sphere, and gender norms which make women responsible for conforming their own bodies to ideal standards of femininity.

Cross-References

- [Body Image, Gender, and Food](#)
- [Child Nutrition Guidelines and Gender](#)
- [Ecofeminist Food Ethics](#)
- [Farm Management](#)
- [Food Advertising to Children: Policy, Health, and Gender](#)
- [Food Culture and Chefs](#)
- [Food, Class Identity, and Gender](#)
- [Gender and Dieting](#)
- [Infant Feeding](#)
- [School Lunch and Gender](#)
- [Sustainable Consumption and Gender](#)

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Gender, Obesity, and Stigmatization

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Synonyms

Gender and dieting; Gender and eating; Gender and food

Introduction

Obesity is defined and identified in a number of ways, depending on whether it is in a medical,

social, public health, or other context. Most commonly used medically is the body mass index (BMI) scale, which uses a formula based on the relationship of height to weight. On this scale, 19–24 is normal, 25–29 is overweight, and a BMI of 30 and above is defined as obese. A BMI of 40 and above is defined as extreme (also called morbid) obesity.

Medical and public health experts consider obesity to be a major health problem. More than 500 million people worldwide are obese, with more than 1.9 million considered overweight (Finucane et al. 2011). Obesity is a major risk factor for type 2 diabetes, and it is also linked to hypertension, cardiovascular disease, sleep apnea, infertility, and osteoarthritis, among other conditions (CDC 2011).

Although the standard medical account of obesity explains it as an energy imbalance – more calories are taken in than expended, resulting in excess weight gain – both its causes and effects are complex and multifactorial.

Obesity affects individuals in a variety of ways: medically, socially, psychologically, and economically, to name a few. Many of these effects are the result of what public health and other experts call “weight stigmatization.” Weight stigmatization is not just an aesthetic judgment of physical unattractiveness. It is about using those judgments about someone’s weight to form conclusions about other dimensions of their lives (Hebl and Heatherton 1998). Studies on the effects of weight stigmatization are well represented in the social science, psychological, and medical literature. Across the board, these studies show gender differences in both the types and magnitudes of weight stigmatization; women tend to experience more weight stigmatization than men in virtually all social contexts, and the effects on them tend to be more extreme and longer lasting.

After a brief primer on obesity, its causes and effects (and in particular its gender-based effects), this entry will examine weight stigmatization in more detail, giving an overview of some of the major results of studies across social science and public health fields. Next will be a discussion of two main approaches from which to understand

and address effects of weight stigmatization. Two common approaches – those pursued by public health ethicists and by various feminist scholars – overlap in some ways but differ substantively about the nature and medical status of obesity. Finally, this entry summarizes responses to issues of obesity and gender from the standpoints of both ethical approaches. There is a growing consensus across disparate groups about how to understand obesity as a social phenomenon, how to address it, and even how to reconceive health and fitness in ways that underplay the importance of body weight.

Obesity: Its Causes and Effects

Currently, the most common way to determine obesity is the BMI (body mass index) scale, which is calculated by taking a person’s weight in kilograms and dividing it by the square of his/her height in meters. The resulting numbers fall on a scale in which below 19 is underweight, 19–24 is normal weight, 25–29 is overweight, and 30 or higher is obese. There are classifications for higher BMI values within the obesity category: 35–40 is class II or severely obese, and 40 and above is class III or very severely obese. BMI is the standard used both by the World Health Organization and by the Centers for Disease Control in the United States. Some gender- and race-specific BMI scales have been proposed, but most health organizations use the standard scale. A separate BMI scale is used for children.

According to 2009–2010 data in the United States from the Centers for Disease Control (Fryar et al. 2012), 33 % of Americans are overweight, 35.7 % are obese, and 6.3 % are extremely obese. Breaking the data down by gender, we see fewer women overweight than men (27.9 % vs. 38.4 %), women with about the same obesity incidence as men (35.8 % vs. 35.7 %), but with a much higher incidence of extreme obesity (8.1 % vs. 4.4 %). Among Black and Mexican-American survey respondents, the gender differences are more pronounced. Black and Mexican-American women have a higher incidence of obesity than men (58.5 % vs. 38.8 % for Black respondents, 44.9 % vs. 36.6 % for Mexican-American respondents).

Causes of Obesity

Obesity has multiple causes – genetic, psychological, cultural, economic, and environmental conditions contribute in many ways to increased body mass in populations. Public health approaches to combating obesity have increasingly focused on features external to the individual as causes to target in proposed interventions, policy, or regulation. The built environment, availability and price of fresh fruits and vegetables, amount of food advertising, and access to fast food and sugar-sweetened beverages have been cited as factors that should be addressed at a governmental level in order to help reduce the incidence of obesity.

It is not clear which causes of obesity are gender specific, but income as a contributing social determinant for obesity seems to affect women more than men; studies show that income seems not to be a contributing factor for men, whereas women with incomes under \$75,000 are much more likely to be obese.

Effects of Obesity

Obesity is considered a major public health problem because clear links have been established between obesity and a number of adverse health outcomes, including hypertension, type 2 diabetes, cardiovascular disease, stroke, numerous cancers, osteoarthritis, and gall bladder disease (Kim and Popkin 2006). Suggested medical treatments for obesity range from dieting and exercise to bariatric surgery. Estimates of how many Americans are on a diet range from 45 to more than 100 million. Women are the vast majority of dieters (estimates vary from 50 % to 85 %). They also undergo more bariatric surgery to treat obesity than men do – different studies estimate that at least 80 % of gastric bypass surgeries are performed on women. Bariatric surgery carries with it the possibility of mortality, postsurgical complications, and other short- and long-term effects.

Studies have suggested many effects of obesity on women's fertility, pregnancy, and complications in childbirth. Obese women have higher rates of infertility, are at higher risk for

hypertension and gestational diabetes during pregnancy, and have higher rates of caesarian sections and longer labors (Linne 2004). Obesity has been positively associated with depression for both women and men, but its relationship with suicide is still unclear. There is some evidence that extreme obesity (BMI > 40) is more likely to be associated with suicidal thoughts and attempts in women than in men. With respect to the relationships between eating disorders and obesity, there is much evidence that women (young women in particular) are at higher risk for eating disorders and that body dissatisfaction can contribute to development of binge eating disorder, bulimia, or anorexia nervosa.

The most pervasive effects of obesity, according to most studies across disciplines, are those resulting from weight stigmatization. In the next section, weight stigmatization will be discussed, with a focus on its effects on women.

Weight Stigmatization

The effects of obesity are not limited to the effects covered in the medical literature. In fact, the most powerful and pervasive effects of obesity are due to weight stigmatization, according to experts in fields ranging from public health to gender studies. Weight stigmatization (also called obesity stigma, fat stigma, weight discrimination, or weight bias, henceforth referred to as weight stigma) is the formation of negative judgments about a person's character or personality traits based on observations and judgments about that person's weight. Weight stigma results in discrimination against obese people in virtually every social context; its effects are extremely well documented by studies across social science and health fields in many countries.

A Sample of Research Findings on Weight Stigma

Weight stigma effects have been documented for virtually all social contexts of life; from education,

work, and family to healthcare, overweight and obese people experience negative judgments from others that result in lower wages, less professional advancement, less access to quality healthcare, and lower overall life satisfaction. Research on weight stigma and its effects is conducted in all fields of social science as well as health and legal disciplines. Below is a brief sample of some of the results from current research.

Economic Effects of Weight Stigma

There is an extensive body of research on the effects of weight stigma on overweight and obese people, documenting a variety of economic effects and psychological effects. For some sample sources and bibliographies, see Baum and Ford (2004); Puhl et al. (2010a); Fikkan and Rothblum (2012); and Friedman and Puhl (2012).

In many studies, overweight and obese people are found to receive lower wages for the same position, fewer promotions than their non-overweight coworkers, and less desirable work assignments and experience lower hiring rates. In a survey of recent research by Friedman and Puhl (2012), they report that 54 % of overweight workers reported being stigmatized by coworkers - negative judgments include being perceived as lazy, lacking in self-discipline and personal hygiene, less competent, less ambitious, and less productive.

Weight stigma effects for women in the workplace have been shown to be much stronger than for men. In one study about perceived job candidate desirability (cited in Fikkan and Rothblum 2012), participants were less likely to recommend overweight or obese female job candidates than male candidates of similar weights. In other studies cited in the same paper, participants made no job-related distinctions between males of different weights, but made many discriminatory work-related decisions about heavier females.

Lost wages due to weight stigma are greater for women than men. Overweight or obese women earn less than non-overweight women (estimates range from 9 % to 17 % less; Fikkan and Rothblum 2012, p. 577). Studies also show that overweight or obese women near retirement

age have an overall lower net worth than non-overweight women. This result contrasts markedly with men, for whom being overweight or obese is associated with higher net worth at retirement (cited in Fikkan and Rothblum 2012). Weight stigma workplace effects are also triggered at much lower BMIs for women than men (25 for women vs. 32 for men). Weight stigma in the workplace diminishes with years of work experience for men, but it persists throughout women's careers. At higher incomes, obese women are largely unrepresented: less than 10 % of female CEOs have a BMI over 25, but more than 61 % of male CEOs have a BMI over 25.

Weight Stigma Effects in Education

Studies on weight stigma in educational settings identify a variety of effects that are relevant both economically and psychologically for those experiencing weight discrimination. Overweight and obese adolescents are at greater risk of lower academic achievement and lower rates of social acceptance among their peers. These effects are, once again, much stronger among adolescent girls than boys. In one study, obese female high school graduates were shown to be less likely to go to college than their nonobese counterparts; the researchers found no such effects for boys. Studies have shown that college students with higher weights receive less parental financial assistance than those with lower body weights and found stronger incidence of this effect among overweight females than males. Psychosocial effects of weight stigma in adolescents also appear to be stronger in females – those who perceived themselves as obese were more at risk for depression and lower grade point averages. This effect was not observed for adolescent males.

Weight Stigma and Effects on Mental and Physical Health

Weight stigma effects on health have been shown to erode physical and psychological health in a number of ways. First, those experiencing weight

discrimination tend to receive less and lower-quality healthcare; a recent study of 400 doctors showed that one of three surveyed associated obesity with patient noncompliance, hostility, dishonesty, and poor hygiene (Friedman and Puhl 2012). Overweight and obese patients are more likely to cancel or delay medical appointments, including diagnostic screening tests. In surveys, more than 69 % of overweight people reported being stigmatized by doctors (cited in Friedman and Puhl 2012). This effect is even stronger among overweight women; in one study, 83 % reported avoiding appropriate healthcare because of their weight (cited in Puhl et al. 2010a).

Weight Stigma Effects on Dating and Marriage

The effects of weight stigma on dating and marriage are much stronger for overweight and obese women than they are for men of similar weights. Smith (2012) argues that a primary reason why weight stigma affects women so much more severely than men is that overweight and obese women are seen not only as lacking control but also as unattractive. Many studies show marked gender asymmetries in social penalties for obesity. Obese women have lower marriage and cohabitation rates than their nonobese counterparts. When they do marry, their partners tend to have lower levels of education and lower incomes. These effects were either less strong or not observed for men (cited in Fikkan and Rothblum 2012). Among adolescents, studies show that obese girls are seen as less physically attractive, having a lower sex drive, and less warm than nonobese girls. Again, this effect was not observed for obese boys.

Obesity and Weight Stigma as a Vicious Cycle

There is a common view still present in popular discussions about obesity that stigmatizing obesity functions as a motivation for overweight and obese persons to lose weight. Stigmatizing weight, seen in this way, is like stigmatizing

smoking, which has resulted in lowered incidence of smoking in the United States (see, e.g., Beam 2011). Potential merits of this strategy have also been argued for by bioethicist Daniel Callahan (2013), provoking considerable backlash from obesity researchers.

However, there is much scientific evidence to suggest that the abovementioned view is not true – that is, weight stigma exacerbates rather than diminishes the incidence of obesity (Sutin and Terracciano 2013). Weight stigmas can increase psychological stress, which itself can contribute to poor physical health and increased obesity. States of extreme psychological stress can activate physiological mechanisms governing appetite and satiety, contributing to increase food intake and abdominal obesity, the latter of which is a risk factor for type 2 diabetes (cited in Puhl et al. 2010b). Weight stigma also exacerbates eating disorders, often resulting in weight increases among obese and overweight people already suffering from discrimination. Studies have shown that among both women and men, internalizing weight stigma leads to increased risk of binge eating, higher calorie intake, and reduced exercise. Puhl et al. (2010a, p. 1023) note that research suggests connections between perceived weight discrimination and increased weight gain, glucose intolerance, and abdominal obesity. Among women, weight discrimination has been found to be the third most common source of perceived discrimination (after gender and age) – more so than race, sexual orientation, religion, or physical disability (Puhl et al. 2008).

Public Health and Ethical Ramifications of Weight Stigma

Scholars in science and humanities fields have provided varied and extensive analyses of some of the cultural and societal sources of weight stigma. Social science researchers have documented the prevalence of negative views and stereotypes about those who are obese, including blaming obese and overweight people for a lack of willpower or self-control. This is the case despite the fact that to date there has been

little progress in developing effective medical treatments to bring about and maintain long-term weight loss. Many public health researchers (e.g., Puhl et al. 2010a) argue that weight stigma is a social justice as well as a public health issue. Historically vulnerable populations (e.g., low income and minority groups) are at greater risk for obesity and, because of income and health inequalities, also suffer disproportionately from many of the effects of both obesity and weight stigma. Groups that already suffer from racial, sexual, and other forms of discrimination have been harmed in measurable ways by the pervasive effects of weight stigma. Friedman and Puhl (2012) argue for the need to develop federal, state, and local laws and policies specifically prohibiting weight-stigmatizing practices in business, schools, healthcare facilities, and all levels of government. Public health ethicists have long argued that disease stigma results in harms to vulnerable populations (especially in cases of alcoholism and HIV/AIDS) and has blocked advancements in prevention and treatment. Enacting legislation, regulation, and policies designed to protect overweight and obese people from the harmful effects of weight stigma is, in their view, a basic human rights issue.

Gendered Judgments, Fat Bodies, and Weight Stigma

Feminist scholars have long argued that weight stigma against women takes place within cultures obsessed with thinness as an ideal (Orbach 1978; Bordo 1993). Since the publication of these early groundbreaking works, many scholars have pursued arguments that reveal inconsistencies in the ways norms about body weight, health, and social equality have been conflated and leveraged against women. Saguy (2013) objects to the ways obesity has been pathologized and demonized in Western societies. Noting the lack of effective medical treatments for obesity and scientific evidence that fitness and health do not equal lack of fatness, she argues for a reframing of conceptions of body size as more neutral points along a spectrum. Her position is embraced by

many obesity support and obesity rights advocacy groups like the National Association to Advance Fat Acceptance and Health at Every Size.

Fat studies – a recently developed field – engages in critical examinations of the origins and justifications for normative claims about body size in societies where weight stigma is common. Comprised of both social scientists and humanists, fat studies scholars like Rothblum and Solovay (2009) self-consciously blur the lines between academic and activist approaches to the social phenomena that underlie claims, theories, and practices surrounding body weight norms. In particular, fat studies scholars often situate judgments about fat bodies within a context in which political power is gained through marginalizing vulnerable groups (e.g., women, racial minorities, overweight and obese, LGBT, disabled) and creating a social and political “other” to be excluded. By endorsing liberation for these groups, fat studies scholars are advocating for political change, cultural shifts in how members of society are viewed and accepted, and a new set of expanded identities that embraces diversity.

The politics of fatness is not just at the individual level, according to feminist scholars, but also at the center of international commerce and geopolitics. In Vandamme et al.’s (2010, pp. 143–157) work, Wilkerson argues that cultural practices that enforce strict body ideals and pathologize heavier bodies are part of what she calls the Thin Contract – the body and its status (e.g., as fat or thin) are “central to determinations of sociopolitical inclusion.” She claims that any discussion of obesity and its effects is shaped by political dynamics that span food production, labor, and global commerce. Her position is echoed by Lebesco (2004), who argues that fat is not a medical or aesthetic, but rather a political state of body; she entertains the idea that fat bodies are considered failed citizens, deficient in multiple ways and deserving of social rejection. Her response to what she sees as political injustice is to transform fat identity through community activism, aligning fat, queer, and disability groups for more effective and increased fat-positive messages.

Summary

Obesity is generally defined as an energy imbalance in which more calories are taken in than expended. The body mass index (BMI) scale is the most common way of measuring obesity. A majority of both women and men in the United States are overweight or obese, and to date there are few effective treatments for loss and long-term maintenance of weight loss. In addition to the physical effects of obesity, overweight and obese people are harmed by the pervasive effects of weight stigma in the workplace, in schools and healthcare facilities, and in social relationships. Women experience stronger and longer-lasting weight stigma effects than men, affecting them economically, socially, psychologically, and physically. Public health and feminist scholars agree that weight stigma is a violation of the rights of overweight and obese people and argue for a variety of ways to redress the harms that they suffer. Approaches vary, ranging from proposed antidiscrimination legislation to a reconceptualization of body identity.

Cross-References

- [Eating Disorders and Disturbed Eating](#)
- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Medicalization of Eating and Feeding](#)
- [Obesity and Consumer Choice](#)
- [Obesity and Responsibility](#)

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Geographic Indications

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Synonyms

Appellations; Appellations of origin; Certification marks; Collective marks; Designations of origin; Denominations of origin; Geographic indications; GIs; Marks; PDO; PGI; Trademarks

Introduction

In the production of commodities, each producer of a particular good is a direct competitor to every other producer of that same good, a situation known as the commodity trap. To avoid the commodity trap, where price is the only differentiating characteristic amongst similar products, farmers have long joined collective marketing arrangements, coming together to cooperatively differentiate their products from others', thereby increasing their incomes (Wolf 1944). Geographic indications (GIs), although not new, are an increasingly popular instrument of such collective marketing arrangements amongst producers and exporters of agri-food products.

In 2009, there were more than 10,000 protected GIs in use globally whose estimated trade value exceeded US\$50 billion (Giovannucci et al. 2009). The vast majority of GIs are not well known and are often legally unprotected. It could be argued that the average consumer has consumed, knows of, or has seen GI products without realizing that those products are in fact GIs or what the GI represents. This entry will discuss the value, costs, and caveats of utilizing GIs as well as their current status in the global trading and legal environment. The practical considerations of pursuing and protecting a GI are also provided.

The discussion will demonstrate that pursuing and protecting a GI is not an easy, inexpensive, or short-term undertaking. This is particularly true for a GI originating in a developing country that is pursuing a “greenfield” export strategy in which the GI is entering a new export market (usually in a developed country) where it lacks profile, is relatively unknown amongst consumers, and therefore must “start from scratch” in terms of building awareness. Some studies exist that empirically show GIs earning price premiums but do not take into account the costs incurred to do so. Given that producers in developing countries have limited resources, pursuing GIs as an export strategy poses significant and high risks with uncertain outcomes; those limited resources may be better utilized elsewhere with less risk and more reliable results. Some developed country governments and NGOs are advocating the use of GIs as a strategy to improve agricultural incomes in developing countries without strong evidence of the efficacy of the strategy. The governments of developing countries considering utilizing GIs as an agricultural and export development strategy should reconsider until empirical evidence conclusively illustrates that GIs increase producers' incomes. Essentially, GIs require further study utilizing empirical cost-benefit analysis before they can be recommended as an export strategy for developing country producers or as an agricultural development strategy for developing country governments.

What Is a GI?

Agri-food products with associated geographic names provide information to consumers. While an indication of the source (i.e. Product of Canada) informs consumers of a product's place of origin, a GI imparts further information regarding specific quality characteristics of the product due to its geographic source and grants exclusive rights to producers to market their designated products from a specified geographic area. Giovannucci et al. (2009) describe a GI as a concept that:

Identifies a good as originating in a delimited territory or region where a noted quality, reputation or other characteristic of the good is essentially attributable to its geographical origin and/or the human or natural factors there. (p. 5)

GIs are a form of intellectual property, where a name is associated with a process or product's originating region or locality *as well as* a specific reputation for quality or authenticity. They can be applied to agri-food products, nonagricultural products, traditional cultures, processes, and production methods. GIs evolved from the French concept of *terroir* where a specific geographic locale whose natural environment, possibly in interaction with the climate or other natural phenomena, in combination with a traditional production knowledge, lead to a product that exhibits unique traits and reputation which are associated with the physical attributes of the natural environment or location-specific human capital where it was produced (Kerr and Yeung 2012). As with any knowledge, it can be used by others without attribution, meaning that the originator receives no return on efforts to produce that knowledge. This lack of attribution or return on efforts to create knowledge has long been a public policy issue as the absence of reward creates an economic disincentive to create and innovate. It has also become an ethical issue when the value of traditional knowledge is not recognized and is freely exploited by others for economic gain (Isaac and Kerr 2003). In the case of geographic indications, it is the traditional ability to exploit unique physical characteristics to produce geographically unique products or to

use location-specific (often traditional) knowledge in production that is open to free exploitation by others. Endowing those having that knowledge with intellectual property rights and commensurate legal protection is an attempt to correct an ethically based market failure.

GIs impart the exclusive right to market designated products from a particular geographic locale to a group of producers and processors. As consumers become more familiar with a particular GI, the value of that GI may increase, in a process comparable to that of developing a marketable brand name. The GI becomes a symbol for the relationship between the product's name, its special qualities, and its place of origin. It is important to note that a GI will protect a name and its *relationship* to a specific product, not the product itself. The actual product, its ingredients or formulation, independent of origin, is not protected by the GI. For example, a winemaker based anywhere in the EU can create a fortified red wine; so long as they do not call it "Port," it is a legitimate product. Only producers in the Oporto region of Portugal can call such a product "Port."

GIs signal a product's credence attributes to consumers. Credence attributes are characteristics of goods that cannot be detected by consumers, even subsequent to purchase and consumption, without some form of labeling. In the agri-food industry, credence attributes may include production methods (traditional, organic, free range), qualities (smoked, effervescent), source (local, Bob's family farm), or food safety characteristics. For example, even post purchase and consumption, an average consumer may not be able to organoleptically differentiate between olive oil that is grown in a famous, historic olive-growing region of Greece, on trees grafted from the original Phoenician groves, and regular, conventional olive oil. The only means to indicate these unique traits is labeling (i.e., through a GI) and to take advantage of the marketing opportunity such labeling facilitates.

GIs are registered and protected in different forms across different countries and may be protected in one country but not another. In fact,

many GIs have considerable profiles with consumers but do not enjoy universal GI protection because they are considered generic terms (i.e., their names are now in regular use as part of the common lexicon) in some markets. For example, Feta enjoys protected status as an inherently Greek product in the European Union (EU) but not in North America where the word “feta” can be used generically to describe a type of cheese, whether produced in Greece or not. Generic terms are a point of international contention because of this inconsistency in protection. Should the original producers of a GI product, name, or process neglect to register and actively protect that particular GI outside their domestic market, they risk losing their exclusive rights to it in those markets. This issue will be discussed in greater detail in a subsequent section.

Use and Status of GIs

GIs are increasingly popular amongst a broad range of stakeholders for a variety of reasons. Consumers benefit from GIs due to their provision of information, thereby reducing information costs and increasing transparency in the market (Josling 2006). Consumers may also benefit from a guarantee of quality provided by GIs. A growing segment of consumers are interested in a product’s guarantee of origin whether for the particular place, production method, expected quality, or tradition. Reports indicate that consumers prefer and/or would be willing to pay a premium for the guarantee of origin and/or quality provided by a GI (Giovannucci et al. 2009). GIs enable producers to escape the commodity trap by conveying information about, and thereby, differentiating their product from those of competitors. This type of differentiation provides a strategic form of competitive advantage that is not easily eroded while also providing a means of protection for the group’s cultural or intellectual property (Giovannucci et al. 2009). Producers also benefit from the “feel good” factor of having their product gain recognition as being special (Kerr 2006).

It is also argued that GIs benefit their larger environment (rural areas, regions, and even countries) through improving the reputation of a place or region, with the potential for encouraging tourism, as well as providing the structure and means to affirm and place value on an area’s unique sociocultural and agroecological traits, including quantifying the importance of “local” in products, production, and values. Producers’, processors’, and suppliers’ incomes increase due to their associative relationship with the GI; economic development occurs based on the competitive advantage developed through utilizing local natural resources. Local or regional development initiatives are increasingly including GIs as a component due to this fostering of competitive advantage in natural resources. The EU has made GIs an essential element of its agricultural and rural development strategies (Josling 2006), significantly increasing the number, profile, and protection of recognized GIs. The EU is the most active proponent of GIs, with a total of 6,021 protected GIs in 2009 (of which 5,200 are wines/spirits and 821 for foods) and more are in process; the vast majority of protected GIs, many of them wines and spirits, originate in the OECD countries. While developing countries have innumerable products that are potential GIs, not many enjoy formal protected status as GIs; few currently have significant economic value beyond their domestic markets, and formal GI status would not necessarily increase their profile or demand in export markets.

The actual number and value of GIs is difficult to calculate, particularly in developing markets, or even on a global basis, due to different registration systems and the lack of a central registry. GIs that are protected as trademarks are difficult to differentiate from those that are not GIs, while difficulties also arise where GI registration systems overlap or are duplicated. The great variance in protection systems used by different countries and their associated costs and benefits mean that a producer group must cautiously and completely assess a broad range of factors in deciding whether or not to pursue a GI registration as part of their export strategy.

How Are GIs Protected?

GIs require protection because, like any other brand, their names and therefore their intrinsic values are in the product's reputation or guarantee of quality. Fraudulent use of that name by imitations lacking the expected quality or reputation will erode its value. Protecting a GI is achieved through the granting of intellectual property rights (IPR), albeit this is implemented in practice in a number of different ways. Without adequate protection and enforcement of that protection, GIs invariably lose their geographic connection in the minds of consumers, allowing extra-regional competitors the opportunity to imitate the GI, free riding on its reputation. Eventually lack of protection and enforcement will result in a GI becoming generic where its geographic connection is universally and irrevocably lost as the name becomes part of common lexicon. Mocha coffee (originally of Yemeni origins) and Gouda and Swiss cheeses are examples (Giovannucci et al. 2009).

A protectable GI must have a geographic link that imparts a specific quality or reputation; therefore, most indications of source such as "Made in China" do not constitute a GI. A GI becomes protected initially in its country of origin through a variety of methods including, either individually or in combination, certification marks, denominations of origin, collective membership marks, trademarks, formal *sui generis* systems, administrative rulings, registers, and even under laws pertaining to consumer protection, unfair competition, and labeling (Giovannucci et al. 2009). This diversity of methods and systems contributes to the difficulties in accurately accounting for GIs globally as well as the potential for confusion and conflict. The combinations of legislation, regulation, and administration with the variance in terminology used in intellectual property law further confuse a complex topic, even amongst legal professionals.

International trade agreements offer little enforceable protection for GIs. The Lisbon Agreement and Madrid Protocol both have diminished effectiveness due to limited membership and the inability to settle disputes (Kerr 2006).

The Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) of the World Trade Organization (WTO) provides the basic regulatory framework to protect GIs, but individual countries choose the method of implementation and degree of enforcement. Countries pursuing bilateral and regional trade agreements are increasingly including GI protection as components of such agreements. There is a push amongst some WTO member states to create a multilateral register of GIs that would extend greater TRIPS protection to GIs across foreign jurisdictions, with little consensus to date.

Some countries (e.g., the USA, Canada) use trademarks as part of their existing intellectual property protection regimes to incorporate GI protection. Other countries utilize a *sui generis* system to protect GIs. The EU has created a sophisticated and comprehensive body of GI legislation and regulations which focuses on the registration of protected designation of origin (PDO) and protected geographic indication (PGI). A PDO uses the name of a place whereby a product must be produced *and* processed within the defined geographic area, exhibiting qualities that can be attributed to that area, including natural and human factors (Giovannucci et al. 2009). A PGI is a more flexible designation as the product must be produced *and/or* processed in the defined geographic area. A PGI must exhibit some contribution from the defining qualities or characteristics of that area in its production and/or processing and/or preparation, but not necessarily the human contributions.

Collective marks and certification marks are other popular means of protecting GIs. Collective marks can only be used by members of a collective group, association, or cooperative to identify the connection between the goods/services they provide and their standards. A certification mark is one that indicates the product or service has met standards and specifications, in production methods, for example, set by the owner of the mark. The owner of the mark controls its use but may not discriminate against any applicant who meets the set standards so long as the mark is used for the purposes for which it was registered.

Although both the USA and EU appreciate the value and function of GIs, they approach their protection of them in vastly different ways, both philosophically and methodologically. As some products and place names are protected in one market (EU) but are considered generic and therefore not protected in another (USA), IPR tensions can arise. Feta, port, cheddar cheese, mocha coffee, Worcestershire sauce, and Gouda and Swiss cheese are all examples of products whose original origins were geographic that do not have global protection (Giovannucci et al. 2009).

Attempts by the originating owners to reclaim a generic name in a process known as “clawback” invariably cause conflict as existing users of the generic name have vested interests in maintaining their use of the name. A Wisconsin cheese manufacturer that currently produces feta legally will be unwilling to relinquish the use of the word “feta” in describing its product. Should the EU be successful in its attempts to clawback the word “feta,” where only Greek holders of the GI “feta” could use that word to describe their cheese, the Wisconsin cheese maker’s ability to use “feta” to describe its product would be negated, necessitating finding an alternate name. If clawbacks are applied in developing country markets, as the EU is pursuing in its regional trade agreements, developing countries must spend their limited resources protecting the monopoly rents of foreigners (Yeung and Kerr 2011). In exchange for clawbacks, the EU is offering reciprocity by protecting developing country GIs in its market. As few developing country GIs have a profile in the EU, thereby negating the opportunity for rent seeking via clawbacks, reciprocity for developing country GI holders entails pursuing a greenfield GI development strategy, an endeavor that requires careful assessment.

Strategy for a Successful GI

While the success and benefits of GIs have been reported as general market trends in many studies as examined in Giovannucci et al. (2009), there is

little empirical evidence showing that increases in producers’ incomes can be singularly attributed to GIs. Most studies report price premiums which are attributed to GIs but fail to examine other market factors that may be contributing to the premiums achieved or the additional costs incurred to produce, establish, and maintain a GI (Kerr 2006). Many studies report potential benefits for producers including positive externalities such as preservation of traditional culture, community self-esteem, or improved organizational skills, all of which are beneficial in their own right, but such externalities do not constitute clear, empirical proof that GIs increase producers’ incomes (Yeung and Kerr 2011). This paucity of empirical evidence raises a number of questions regarding the expenditures needed to support GIs as firstly, an agricultural and rural development tool, particularly for developing countries; secondly, a viable strategy for producers, again in particular for those in developing countries; and thirdly, as an instrument requiring further protection under commercial and international trade law. GIs present challenges in two main areas.

Establishing and maintaining greenfield GI development in new markets is a complex process. However it is registered and protected, either via trademarks or *sui generis* in its domestic market, significant additional transactions costs will be incurred in registering and protecting a new GI product internationally, given the fact that two main systems are in use globally. Prior to incurring the associated costs of seeking protection in foreign markets, however, a new GI must have a strong establishment strategy to support its success.

Markets for GI products are generally in developed countries where consumers have sufficient incomes to purchase products at premium prices. Yet such markets are characterized by fickle consumers for whom novel products are the norm. Garnering and sustaining their interest to generate more than passing initial success is a risky endeavor. In order to achieve long-term success, a greenfield GI must have a strategic plan and a long-term commitment of resources to establish, develop, and protect it, both on the demand and supply sides of its marketing chain.

The value of owning a GI is its exclusivity (the monopoly on its use); strategically it must be recognized and then defended in an export destination's market. Gaining recognition in foreign markets will require the GI owner to demonstrate the inherent link and unique value between the product's quality and its GI to the appropriate foreign authorities in the registration process. The granting authorities may require that the owner of the GI demonstrate consumers' willingness to pay a premium for these quality gains. Such consumer research can be costly to obtain. If the GI is such a novel one that consumers have no experience with it, a consumer education and marketing campaign will be necessary prior to determining whether a price premium for such a product is warranted. Such a campaign has the risk of alerting potential competitors prior to the GI becoming protected in the destination market and creates a potential challenger in the registration process. Registration may be denied if domestic interests can illustrate valid objections. Thus, the registration of a GI in a foreign market must be strategic in its finances, timing, and execution as well as have strong counterarguments prepared for any potential objections.

Once the GI gains official recognition in the destination market, it must then be defended and its exclusivity enforced. The GI owner must monitor the market continuously for counterfeit products and/or infringement of the GI. Should this occur, the onus will be on the owner to inform the appropriate authorities in the foreign market and, subsequently, gather and present evidence of the transgression, including the potential preparation and financing of legal cases. The greater the success of the GI, the greater the potential for infringement and counterfeiting as competitors attempt to free ride upon that success. The nature of agri-food products has inherent safety risks, despite the most stringent production, processing, and distribution controls. A GI must have a disaster management plan to ensure safety and address any potential food safety issues. Procedures for product recall, cooperation, and communication with local authorities and consumers and an emergency management plan must be prepared and ready to implement. Therefore,

a GI's strategic plan must have a well-financed long-term commitment to monitor and protect it, including contingencies for avenues of legal action if necessary and an effective, rapid-response emergency disaster plan.

Once a GI is officially registered in the destination market, a comprehensive marketing effort must be launched to create the perception of value in the minds of consumers. Consumers in the destination market will need to be educated about the GIs existence and convinced of its special qualities that would make it worthy of a price premium as well as be provided with information regarding its preparation, storage, and use. Once the initial consumption experience proves positive, consumers must be moved from novelty to sustained consumption where dietary habits change to regularly include the GI or commit to the GI-based brand. This is a formidable challenge as the marketing efforts and resources devoted to GIs such as Kona coffee, champagne, or Columbian coffee can illustrate. If consumers cannot be convinced to regularly consume the GI beyond that first novelty "test-drive," the owners' investments to increase production for sustained export purposes may not be justified.

GIs also face supply side risks where long transport distances from field to foreign consumer, passing through many steps that can affect its quality, necessitate strong supply chain management. As vertical supply chain integration is often infeasible for developing country GI owners, independent contractors will handle the GI on its way to the final consumer. Whether such contractors are able or willing to maintain the GI's quality cannot be fully guaranteed. Quality in contents or packaging, timely and appropriate transport, perishability, optimal storage, timely shipping, and delivery are all aspects of a supply chain that can negatively affect a GIs quality and reputation, beyond the control of the producer. Effective supply chains manage information flows both up and down the chain (Hobbs 2001); managing information requires resources. The relationships within the supply chain must also be organized such that GI holders capture a significant portion of the returns from the GI; producers in the developing world who undertake

the effort to create and protect the GI should not bother if they cannot capture a considerable amount of the extra value created by the GI (Yeung and Kerr 2011).

Within the producer group that owns the GI, stringent quality controls must be created and enforced to ensure the quality of the product. The group must collectively support and internally enforce the GIs standards while managing group dynamics and settling internal disputes, all in the name of preserving the GI's quality. The GI's producers each have a stake in each other's performance and the product's integrity and success, as well as an equity share of the value of the GI. They must also be able to manage any changes, hopefully due to success, that the GI garners, whether a need to expand production, respond to consumer demands, manage new producers who want to produce the GI, production of new products under the GIs reputation, undertake alternative marketing initiatives, address issues of tradition compared to innovation, etc. The producer group that owns the GI must be able to anticipate change and have the means to adapt. They must also have a long-term and dynamic business plan that will provide a mechanism for effective supply chain management and address any threats to their exclusive monopoly that may arise due to their success.

Each of these elements contribute essential components towards a GI's commercial success in a foreign market. As Josling (2006) notes regarding the success of some EU GIs:

A quick glance at the scale of production of many of the GIs suggests they are not geared toward global markets. Many names protected by GIs would not be recognised in other parts of the same country, let alone in other member states in the EU. So the role of these GIs in marketing is unclear. If small groups of producers choose to register their name and production process, . . . they are unlikely to benefit from sales beyond their own region if the information is not meaningful to more distant consumers. (p 360)

This strategy also demonstrates that GIs are not a rapid solution to low returns for agricultural producers, despite some benefits for developing countries incorporating GIs in their export-oriented

development strategies. A GI's success depends on the ability of producers to capture any competitive advantages endowed through human and natural resources as well as their ability to convey meaningful information to consumers. This requires a certain level of organizational skill and resources to maximize any rents garnered by a GI designation, which often does not exist in developing countries. For developing country producers, greenfield GI development in developed markets is a risky and expensive strategy; given that evidence of the ability of GIs to increase producers' incomes is weak, recommending that developing countries expand the role of GIs in their development policies is complicated. Consequently, furthering the protection of GIs at the WTO on the basis of reciprocal protection in developed countries' markets may not represent the best option for developing countries (Yeung and Kerr 2011). While developing countries should access GI protection in developed countries where the situation warrants, whether via trademarks or *sui generis*, encouraging developing countries to actively pursue development strategies based on GIs should be deferred until the efficacy of GIs in generating sustained increases in producers' incomes can be credibly assessed.

Summary

Geographic indications are a form of intellectual property protection that protects a link between a product's (or process's) place of origin and specific qualities or reputation attributed to that place of origin. GIs provide information to consumers about a product's credence attributes and are used by a collective group of producers as a type of guarantee that the product (or process) is authentic.

GIs are protected through a variety of methods, including as trademarks within the existing IPR systems of countries *sui generis* systems, and collective and certification markets. This broad range of methodologies makes it difficult to accurately measure the actual number of GIs in use around the world, or even in specific

countries; it also creates tensions between countries that use different systems to protect GIs. GIs can be protected in their domestic market but not in foreign markets due to these differences in systems. The use of a GI's name can become generic where the inherent connection with its place of origin is irrevocably lost in the mind of consumers. Attempts to regain the exclusivity of a generic GI by the originating country are known as clawback. Clawback is controversial as foreign firms legally using the generic name have vested interests in maintaining that use.

Seeking a GI designation in foreign markets as an export strategy is a complex and costly process, particularly for developing country producers. They must have a long-term commitment of finances and resources to ensure the successful registration, marketing, and protection of the GI in that specific export market. They will face demand side challenges and challenges along their supply chain as well as change management issues. For any long-term commercial success, they must have a comprehensive strategic plan for that GI in that particular market as well as some essential organizational skills and resources, which often simply do not exist in developing countries. GIs are therefore a highly risky and expensive undertaking for producers from developing countries.

GIs originating in developed countries have proven to be popular tools for their producer groups with many positive externalities and the potential to expand exports. The differences between the circumstances of developed and developing country GIs, however, greatly influence their potential export success. Developed country GIs tend to already enjoy consumer awareness and use in their destination markets prior to becoming GIs, thereby reducing their establishment costs in foreign markets. Developed country GIs enjoy the IPR protection benefits of well-established government institutions, infrastructure, programs, and systems. Their producers have easy access to information, assistance, services, and support for their GI, all of which may not be accessible or available to producers in developing countries.

That is not to say that developing country producers should not export their GIs or seek GI protection in foreign markets should their individual circumstances allow, but, positive externalities aside, until there is credible empirical evidence proving the efficacy of GIs in increasing producers' incomes, producer groups must carefully weigh the full costs and benefits of such a strategy. Similarly, developing country governments should reassess any development strategy that relies on exporting GIs to developed country markets.

Given the paucity of evidence illustrating that rises in producers' incomes can be singularly attributed to GIs, particularly in conjunction with the costs incurred in pursuing, establishing, and protecting the GI, recommending that developing country producer groups pursue a green-field GI export strategy in developed country markets would seem a risky use of their limited resources.

Cross-References

- ▶ [Agricultural and Food Products in Preferential Trade Agreements](#)
- ▶ [Ancestral Cuisine and Cooking Rituals](#)
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- cultures, including those of emerging countries, whose producers have little means for independently claiming reward for their most original work; thus, as noted in a United Nations Conference on Trade and Development (UNCTAD) study, GIs “reward producers that maintain a traditional high standard of quality, while at the same time allowing flexibility for innovation and improvement in the context of that tradition” (Downes and Laird 1999, p. 6). On the other hand, major international corporations – voicing their position especially within the WTO (Handler 2006) – have stressed that GIs create monopolistic opportunities, obstaculating free trade around the globe. Further criticisms, finally, point out that GIs are inefficacious in rewarding the people from within the know-how originated. After a summary of the historical and legal highlights regarding GIs, the entry addresses the main metaphysical and ethical interrogatives surrounding GIs of agricultural origin, in connection with the identity of the food product and its cultural underpinnings.

Geographical Indications, Food, and Culture

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Synonyms

Labels of protected origin and culture

Introduction

Over the past two decades, geographical indications (henceforth GIs) have been at the center of a tensed international debate. Favoring their enforcement, some argue that GIs comprise the best legal tool for defending regional culinary

Historical and Legal Highlights of GIs

GIs are one of the oldest and most renowned ranks of entities covered by intellectual property right in modern history (see O'Connor 2004). Their role is to protect the essential contribution of a geographical location in the making of a product, provided by special climatic, geological, and biotic conditions and by a *sui generis* know-how. GIs protect goods of all sorts, including jewelry, textiles, and handicrafts. The vast majority of GIs, however, are agricultural products, in particular wines and spirits. Some early and well-known specimens include Chianti Classico wines, whose geographical area of production has been specifically designated since 1716; Tokaj-Hegyalja wines, whose threefold classification was introduced in 1730; Champagne wines, invented at least in 1531, defined in 1662, and then protected from 1891; and Port wines, specially denominated and regulated since 1756.

Four major agreements over the last 130 years have come to define the legal status of GIs: the Paris Convention for the Protection of Industrial Property (1883); the Madrid Agreement (1891); the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958); and the Agreement on Trade-Related Aspects of Intellectual Property Rights (1994), henceforth abbreviated as TRIPs. Articles 22 and 23 of the TRIPs, signed within the WTO by 117 countries, regulate to these days the protection of GIs at the international level. Article 22.1 establishes that

Geographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.

The comma sets GIs as a more restrictive legal category than “indications of sources.” An indication of source, indeed, may more modestly flag that a good was once invented, tended, and fabricated in a certain region. This does not imply that the good, whose source is indicated, was produced in the region where it first originated. Indications of source, that is, establish a generic tie between a kind of good and a geographical area. On the contrary, a GI implies a specific tie of the labeled product to a geographical region: for instance, each single bottle of Port wine must come from the Port district in Portugal.

Article 23 of the TRIPs, then, bestows an even higher level of international legal protection to wines and spirits. In fact, the Article requires that each member country “to prevent the use of such GIs irrespective of whether the consumers are misled or whether the use of such indications constitutes an act of unfair competition” (Das 2006, p. 463). Wines and spirits, protected by an “appellation of origin” as specified in Article 23, enjoy labels that have a more restrictive legal status than generic GIs in two respects. First, appellations of origin must indicate a geographical area, whereas some GIs may be attached to a non-geographical descriptor, such as Basmati (which refers to a variety of rice,

rather than to a region of production). Secondly, the more generic reputation of a product is not sufficient to establish an appellation of origin; the essential tie to the geographical area must be proved (cfr. Das 2006, pp. 462–463).

Five aspects of the ways GIs are understood under the TRIPs are particularly relevant from a philosophical perspective:

- (i) GIs are treated as intellectual property rights.
- (ii) GIs are identified through relationships with a spatial region.
- (iii) GIs are identified with respect to no temporal limit.
- (iv) GIs are identified through some *essential* properties of the protected items.
- (v) Recognition and protection of GIs is left to each individual country.

In other words, for any item that is ranked as an instance of a GI, some individual or corporation may claim its exclusive ownership (i). The ownership in question stems from the relationship between the item produced and a certain portion of land (ii), which is not temporally characterized (iii). Not all the items produced on that land, however, qualify to be protected under the GI; a GI is a method of ranking items based on whether they present those traits that essentially define the intellectual novelty to be protected under the agreement (iv).

Chianti Classico is a case in point of GI. A wine can be included under this rank only if the grapes from which it originated were grown in specific portions of nine townships in Central Tuscany, between the provinces of Florence and Siena. The property right over items produced in these territories does not have any temporal limitation; in order to qualify as Chianti Classico, a product must fulfill a relatively long list of requirements, including grape variety, fermentation techniques, organoleptic aspects, and bottling restrictions.

A widespread belief among consumers has it that – as Sophie Reviron et al. recently put it – “GIs are not only a business but part of a regional patrimonial strategy, perceived to be for the benefit of both farmers/processors and consumers” (Reviron et al. 2009, p. 27). Is this really the case?

On which grounds can the introduction of a GI such as Chianti Classico be, metaphysically speaking, accounted for? In other words, which features of the wine can serve to justify a claim of intellectual property right and the introduction of a rank with the five above specified characteristics? Two principal methodologies for answering this question have been advanced, one centered on the concept of *terroir* and the second resting on scientific considerations. Both are liable of important criticisms.

The View from Terroir

The most common argument in defense of GIs is that they stem from and are key to protect specific *terroirs*. “Over recent years, place has come to play a central role in defining the character and quality of agricultural products” (Demossier 2011, p. 685); the trend goes hand in hand with the rising importance of *terroir*, a concept that has no easy metaphysical analogues. A great deal of publications in the social sciences has been devoted in the past dozen years or so to uncover the nuances of such a concept. *Terroir* is supposed to capture some qualitative aspects of an item while being unable to pin them down specifically. Thus, the *terroir* of the wine in a Chianti Classico bottle is a qualitative aspect of the wine itself, derived from the biotic conditions of production (the rocks, soil, air, plants, insects, birds, yeasts) as well as the complex system of practices – often indicated under the expression “know-how” – that yielded it.

Accounts of GIs based on the specificity of *terroir* seem to be disputable for two main reasons. First, because the economic model promoted by GIs seems to defy the condition of localized know-how embedded in the definition of *terroir*. Indeed, once a GI is bestowed upon a certain product, its increased economic attractiveness encourages heterochthone investors and workforce to take part in the production process. Recent trends in wine production, for instance, bear witness to this. Just to stick to the example cited above, a large proportion of Chianti Classico wines are owned by investors that would not

identify themselves as inhabitants of the region; at the same time, a large percentage of the workforce comprises recent migrants from Macedonia, Albania, and countries in Northern Africa (cfr. Cicerchia 2009). While such a trend may increase creativity in wine production, it flies in the face of those arguments relying on the stability of wines’ know-how.

Secondly, GIs have no temporal boundaries, yet climatic, geological, and biotic conditions within *terroirs* change, sometimes drastically, over decades and centuries (cfr. Ingold 2000, Chap. 11). For instance, the environmental conditions in the Champagne region have considerably changed over the past five centuries, thus making unclear what are the essential characteristics that the GI over Champagne wines aims at protecting.

The concept of a GI is often equated to the one of *terroir* in the relevant literature; a sample is the following passage by Tim Josling: “The form of intellectual protection known by the term ‘geographical indications’, or GIs for short, is central to providing the concept of *terroir* legal expression” (2006, p. 338). However, as the remarks above underline, there are some important distinctions between “*terroir*” and “geographical indication.” The latter is a legal category defined through an essential tie to a geographical location, with important economic implications, as Addor and Grazioli underline:

In consequence, the improved protection of geographical indications for all products on a level similar to the one granted at present for wines and spirits, would promise trade and investment advantages, in particular for all these developing and developed countries which depend on exports of primary commodities. Extension is thus an economical asset for countries wishing to maximize the benefits from the excellent reputation of many of their products in order to consolidate their markets and avoid illegitimate use by and identification of products manufactured outside their borders. (Addor and Grazioli 2002, p. 896)

The economic advantages offered by GIs, however, have tended with time to alienate local producers from their product and may prevent the due flexibility in order to keep track of changing conditions in the environment of production and

in the relevant know-how. *Terroir*, on the contrary, is a cultural concept, with scarce legal efficacy, enjoying far more flexibility with respect to the changing of specific environmental conditions and of the traditions of human tender.

The View from Science

Another approach to GIs seeks out to uncover their peculiar biochemical characteristics. Modern chemistry successfully identified chemical compounds such as water in terms of necessary and sufficient conditions based on a typical structure; can similar conditions be offered also for cheeses, teas, wines, spirits, and the like? A trend of research moving in this direction gained increasing credibility over the last 15 years (see Baxter et al. 1997, represents a pionieristic study in the field, moving from the analysis of Spanish and English wines). The idea is to pair a specific agricultural product to certain values of (bio) chemical compounds that are specific to that product, under the conviction that such values reflect the specific environmental conditions within which the product originated. For instance, Angus et al. (2006) have shown that wines made from grapes grown in different regions of New Zealand will be distinguishable, with a degree of accuracy of 80 % circa, based on the amounts of nine of chemical elements (Sr, Rb, Ni, Co, Pb, Mn, Cd, Ga, and Cs) that they contain.

Notwithstanding the difficulty of the enterprise, let it be granted that one day appropriate techniques will be in place to fully read the unique chemical structure of each sample of an agricultural product; how could such data be put to use in order to delimit the boundary parameters of a GI is still unclear. The complexity of the issue is not merely practical: the point is conceptual. An agricultural product is not just a chemical formula but an artifact, identified also via nonscientific aspects such as farming methods (e.g., organic) or the tools used to produce and package it. In other words, the identity of a GI, thus far, does not depend solely on its *natural* aspects but also on the *process* through which it is produced. As a forged painting and the original

may not differ at all materially, while still being quite different artworks, so a GI cannot be equated to its material constitution: some aspects of its making are key to its identity. The upshot is that the chemical or biological data, which allegedly help fixing the identity of a GI, need be accompanied by some requirements as to the process of production.

G and I the Protection of Culinary Milieus

Despite the difficulties in ascertaining sufficient grounds to comprehend their conditions of identity, GIs arguably constitute an efficacious legal tool to prevent the exploitation of cultural *milieus* both within the country of origin of the product and at the international level. It is for this reason that, in recent years, some authors (on behalf also of GI producers) have argued for a strengthening of the international legal tools available to prevent infringements (cfr. Vittori 2010), such as an extension of the rights granted under Article 23 of the TRIPs – now limited to wines and spirits – to all GIs (cfr. Addor and Grazioli 2002; Das 2006). The rights would allow producers of specialty foods (as well as nonagricultural products) to see recognized the novelty of their produce, without the risk of unfair imitation. No doubt, such a scenario would open up new economic opportunities for many small producers in less affluent countries. In an optic of preservation and valorization of local traditions as well as promotion of small economic entrepreneurs, this seems a legal scenario with beneficial implications also from an ethical perspective.

On the other hand, according to some, GIs are trade-distorting legal tools; in the words of Josling,

To some countries, GIs are an unnecessary and undesirable form of protection for producers in a particular region against competition from new entrants. If a type of product traditionally associated with a geographical region can be successfully produced in regions other than that which gave it its name, then any restriction on the competitive new product is likely to be resisted. If the new producer is located overseas then the restriction is presumably trade-distorting. (2006, p. 340)

There is indeed the possibility that some producers, working in a geographical area outside the one essentially associated with a GI, place on the market items comparable in terms of characteristics and quality to those items that are bestowed the GI label. When this is the case, the legal restriction imposed by the GI appears to be a simple branding measure, an obstacle to free trade. At the same time, it must be recognized that, in several occasions, new entrants operate in bad faith: they exploit the reputation on the market of a certain product by creating an imitation of lower quality.

GIs seem, then, the best measure so far devised to cope with those operating in bad faith. The question is whether they are an effective tool. Besides the practical difficulties of legally enforcing the rights associated with a GI at the national and international level, two additional drawbacks of GIs may be pointed out, one concerning the “boomerang effect” of GIs and the other regarding GIs and food authenticity. To begin with the former, in an initial moment, GIs empower producers of a local specialty with an exclusive right to a certain etiquette. As described above, however, in a successive phase, the attractive opportunity of a market exclusive product recalls also the attention of heterochthone investors and work labor, which may end up alienating the very initial producers from the good they initially wished to see protected. Thus, while Chianti Classico producers and workforce may have been initially locally sourced, the situation is now reversed, so much so that the original population involved in the production of this GI is now largely alienated both as a producer and as a consumer. This may be described as a “boomerang effect”: a GI creates a brand representing a specific relationship between a people and a land, through which conquering new markets; renewed attention on the GI recalls heterochthone investors and workers, which end up transforming the production process in order to suit the new markets.

Secondly, GIs do not necessarily align with basic claims of product authenticity (see ► [Authenticity in Food](#)). For instance, while the environmental conditions and the practices of human tender of wineries in the Port region may drastically change to the point of suggesting to

autochtones that the authenticity of the product was compromised, the GI would continue to support labeling the wines produced as authentic Port wines. Arguably, analogous circumstances have obtained with respect to a number of GIs, thus revealing the shortcomings of GIs as a legal measure protecting local food cultures. If, on the other hand, claims to a GI are justified in terms of the unique chemical composition of the produce, the authenticity of the process of production is left out of the identity of the product, thus removing from the picture the significance of human tender.

Summary

Geographical indications are among the earliest sorts of entities covered by intellectual property right in modern history, having been in usage since 1700s. Their legal enforcement today is regulated under Articles 22 and 23 of the Agreement on the Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement). From a metaphysical point of view, the identity of GIs may be accounted for under two alternative perspectives, one resting on the concept of *terroir* and the other based instead on distinctive biochemical characteristics of a product. Both accounts result problematic. Finally, the entry assesses the efficacy of GIs in protecting food *milieus*: while GIs are the best available legal tool to protect food *milieus*, they come short in preventing the alienation of local producers from their products as well as in ensuring the authenticity of a product.

Cross-References

- [Authenticity in Food](#)
- [Food and Place](#)
- [Recipes](#)

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Gluttony

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Synonyms

Drunkenness; Edacity; Gormandizing; Intemperance; Overeating; Overindulgence

Introduction

Gluttony describes either (a) the action of overindulging in food or drink or (b) a state of character in which one regularly overindulges in food and/or drink. Gluttony is recognized by most moral and ethical codes, except for the most ardently hedonistic, as a moral failing. While the term “gluttony” has etymological roots in Latin and Old French, the moral assessment of gluttony, in the Western world, goes as far back as the Ancient Greeks. Presented here is a brief historical sketch of the concept of gluttony as understood in the Western world. Changing conceptions of gluttony will be traced from Ancient Greek philosophers through the Judeo-Christian understanding of gluttony as a sin and to the way that gluttony has become intimately connected to moral judgments of fatness.

Ancient Greek Views on Gluttony

Plato (427–347 BCE) and Aristotle (384–322 BCE) are undeniably the most important and influential moral thinkers of the Ancient Western world. Both, as virtue ethicists, present normative theories of ethics in which gluttony, as overindulgence in food and drink, plays a unique role. The philosophical views of Plato and Aristotle are intimately tied, as Plato was Aristotle's teacher, yet their views on ethics (and therein their views of gluttony) are quite different. The relationship between Plato and Aristotle is possibly best captured by Raphael in his fresco “The School of Athens” (“Scuola di Atene”) which was painted in the Apostolic Palace of the Vatican in the early sixteenth century. Here, surrounded by philosophers, mathematicians, and thinkers of the Ancient world, Plato and Aristotle stand side-by-side, at center stage, under a vaulted arch. Plato, holding a copy of the *Timaeus*, is pointing towards the heavens and the abstract world of the nonmaterial. Aristotle, holding a copy of the *Nicomachean Ethics*, is gesturing downwards, towards the material and scientifically understood world. While both Plato and Aristotle hold similar philosophical

ideas, they advance these theories in reference to radically different ends leaving their accounts of virtue, the human life, and gluttony related yet radically different.

Plato on Gluttony

Plato's understanding of gluttony, as a form of moral failing, can be found scattered throughout his writings, but his most influential argument is presented in the *Republic*. Plato's general understanding of the human life and its purpose can be grasped by looking at the famous Allegory of the Cave (*The Republic*, 1997, pp. 1132–1135). This allegory describes a group of prisoners held captive in an underground cave. The prisoners are tied down and forced to stare at shadows as they dance on the wall in front of them, spending the entirety of their lives seeing and understanding only these shadows. From among these prisoners, one is able to break free from their restraints, enabling them to turn around and see the fire which casts the shadows. Eventually this prisoner is able to climb out of the cave and into the sunlight where she can, for the first time, come to see the world in full vibrant color as illuminated by the sun. This allegory, for Plato, represents the life of the philosopher who, alone, can escape the trappings of the material world (comprised of false representations and epistemological missteps) and come to full knowledge of reality, life, and the good.

Plato's vision of life's purpose is intimately connected to his understanding of epistemology. For Plato, the material world is one of constant change and speculation. Knowledge is gained when the mind moves beyond the physical and material world to understand the immutable essences. For Plato, the highest function of humans is to be found in the mind, and the highest purpose of the mind is the acquisition of knowledge.

While Plato ultimately places all value and purpose in the pursuits of the human mind, he does account for the human body as it too has a purpose and must be understood ethically. For Plato, proper health, and therein the proper

functioning of the mind, is essential for the philosophical goal of knowledge in that people are bound to their bodies and bodies act as vehicles of the soul. When the body suffers, or is put into an unhealthy state, the physical existence of a person will detract from their ability to achieve the highest purpose of knowledge. Thus, bodies and bodily health are necessary instrumental values for the achievement of knowledge. Individuals are required to tend to their bodies as a way of ensuring that the pursuit of knowledge is uncorrupted and undeterred.

Plato's understanding of gluttony, or overindulgence in food and drink, is explained through the virtue of temperance (Hill 2011). Temperance is the control of one's physical desires. The good life, or the life of knowledge, can only be pursued and achieved by controlling these desires and acting on them in the right way. Those who cannot control their passions towards food and drink are scorned by Plato, as these gluttonous individuals remain tied down and tethered, like prisoners, to their physical existence and are thus unable to properly pursue the higher faculties of reason. For Plato, when one allows their physical desires to control their life, their rational faculties become enslaved to their physical desires. These gluttonous individuals are denied the highest human pursuit of philosophical knowledge.

Broadly speaking, Plato's understanding of gluttony, as an overactive and overfed appetite, is presented as morally problematic because this overindulgence denies the flourishing of the higher faculties of the mind. Gluttony is the ultimate act of intemperance, the earmark of the ignorant and simple, and is to be avoided at all costs.

Aristotle on Gluttony

Aristotle's understanding of gluttony is somewhat similar to Plato's in that gluttony describes the actions of the intemperate person. Whereas Plato characterizes the highest good and the best life as a life of the mind in abstract contemplation, Aristotle conceives of the good life as the

complete flourishing of the totality of human capabilities such that happiness (*eudaimonia*) can be achieved. While Plato advances an ascetic view that the life committed solely to contemplation is the good life, Aristotle believes that contemplation must coincide with pleasure for the achievement of happiness.

Aristotle's teleological conception of life is outlined in Book I of the *Nicomachean Ethics*, and most of the rest of the book is devoted to the task of outlining, defining, and explaining the virtues and the way virtue is acquired. Aristotle's most important contribution to the tradition of virtue ethics is his description of moral virtues as an intermediate, or "mean," state which lies between two extremes, one of excess and one of deficiency (Aristotle, 1941, pp. 958–959).

Aristotle's condemnation of gluttony is explained as a failure of the virtue of temperance. Temperance is the virtue that governs the human capacity for pleasure regarding the physical body. While temperance governs the desires for sex and drinking, it also governs the desires for food. Temperance *qua* food, as the proper control of one's desires to eat, exists as a mean state intermediate between a vice of excess (where one desires food too much or in the wrong way) and a vice of deficiency (where one lacks a desire for food). Through critical self-reflection and reinforced positive actions, done under the guidance of practical reason, individuals can habituate themselves to develop a moderated desire for food where food is desired in the right way, at the right time, in the right amount, and for the right reasons. Aristotle notes (Aristotle, 1941, p. 982) that there are few people who suffer from a lack of desire in regard to temperance *qua* food and drink, and thus the moral concerns regarding food-related desires are, by and large, worries about an overwillingness to indulge.

The failure to properly control one's desires for food and drink is a moral harm for Aristotle in that an overindulgent person's desires will prohibit her from habituating other virtues and achieving the complete life. In one respect, the overindulgent person will harm their health, and without health one cannot pursue all the goods of life and will thus fail to achieve true happiness.

In another respect, the overindulgent person's uncontrolled desires for pleasure will lead them to states of ignorance. These states of indulgence and ignorance, while suited for grazing animals (Aristotle, 1941, p. 938), do not describe the full flourishing of human life as humans possess faculties beyond physical appetites. Thus, in some ways, Aristotle mirrors Plato's view of the instrumental good of the body and health and notes the ability of unchecked physical desires to distract from the rational goods of the individual. Yet while Plato privileges the life of the mind as the only pursuable good, Aristotle wants to conjoin this with an evaluation of pleasure as important and good in many respects. Plato seeks to transcend the body and views the material existence of humans as a regrettable yet necessary aspect of life, while Aristotle seeks to fulfill the body under the guidance of reason as both the rational and physical aspects of life contribute to one's happiness. For Aristotle, the pleasure that one draws from food is a good to be pursued, and physical pleasure is an important aspect of life when rationally guided, controlled, and moderated. Gluttony then is a form of unrestrained desire which harms the individual in their pursuit of the complete life.

Gluttony in Christianity

The most iconic understanding of gluttony in the Judeo-Christian world is tied to its inclusion as one of the so-called seven deadly sins. While capturing certain moral and ethical proclamations found in the Bible, the identification of gluttony as a moral transgression carries with it not only a theological message of moral failure but also a long history of artistic and literary depiction.

The seven deadly sins, of which gluttony is one, trace their origin to the Greek monk Evagrius Ponticus, who in the fourth century outlined gluttony as one of the "eight principle temptations" (also known as the "eight patterns of evil thought"). John Cassian, Evagrius Ponticus' student, translated this work into Latin and brought the "eight temptations" to Western

Christendom. Two centuries later, in 590, Pope Gregory I revisited and revised these eight patterns, reducing them down to a list of seven and issuing them as “the seven deadly (or mortal/capital) sins.”

Interest in the seven deadly sins was popularized in the fourteenth century when Dante Alighieri, in his *Divine Comedy*, immortalized the seven deadly sins by enshrining them as levels of hell. Gluttony is described by Dante in Canto VI where, in the third level of hell, gluttons are tormented by Cerberus as they wallow and float like swollen logs in a putrid bog of filth. Following Dante, in the fourteenth, fifteenth, and sixteenth centuries, theologians assigned specific demons to the seven deadly sins, claiming that either Beelzebub or Belphegor (each was one of the so-called seven princes of hell) was the demon responsible for tempting people into the sin of gluttony. Late Medieval and Renaissance artists, such as Nardo di Cione, Taddeo di Bartolo, and Hieronymus Bosch, visually depicted sin (and its related demonology) in paintings, sculptures, and reliefs, often portraying the glutton as a ravenous and hedonistic individual plagued by horned demons and physically suffering at the hand of their desires.

This history of the Christian sin of gluttony, as intertwined with theological and artistic depictions of hell, perdition, and demons, has resulted in gluttony being identified with highly visual and visceral images of damnation and lecherous corruption. Interestingly, this visceral imagery of gluttony is not found in the Bible, although the scriptures do present gluttony as moral transgression.

At the root of the identification of gluttony as sinful and wicked is the way gluttony acts as a form of idolatry. Individuals who overindulge their appetites for food or drink value too highly the pleasures they receive from these indulgences. These pleasures become the object of striving and individuals who overindulge shift their focus from the divine to objects of consumption. The gluttonous person, whose eyes are looking towards their belly, is described as one who has their mind set on only earthly things (Philippians 3:19 New International Version).

This shifting of focus, from the divine to the worldly, is a way of replacing a striving towards God with a worship of all things physical, pleasurable, and material. For the gluttonous, the quest for holiness has been exchanged for the satisfaction of desires, whereas food and drink are worshiped and consumed in excessive amounts as if these consumable goods were of the highest purpose. In this way, gluttony becomes the practice of a life lived in devotion to pleasure and not God. Idolatry, and the worshiping of anything above God, is a cardinal sin in that the conception of divinity in Christianity is singular and monotheistic. God, and God alone, is to be worshiped. The centrality of this claim is repeated throughout scripture and is, famously, the first of the Ten Commandments handed down by God to Moses (Exodus 20:3, Deuteronomy 5:7 New International Version). While idolatry is most often associated with worshiping so-called false gods, it also captures the possibility of worshiping objects as if they were God. Gluttony, as a way of turning away from God and towards pleasure, makes a false idol out of food and drink and thus pulls one into the false worship of a false god.

Three things should be apparent in Christianity's assessment of gluttony as a form of idolatry. First, the assessment of gluttony as a form of idolatry does not privilege gluttony as either the ultimate form of false worship or a variant of false worship which is uniquely pernicious. Similar claims of idolatry can be found in scripture about the worship of money and the associated sin of greed or avarice (Matthew 6:24 New International Version) and the worship of sex and the associated sin of lust (1 John 2:15–16, Matthew 5:28 New International Version). Gluttony is merely one of many ways one may overindulge in earthly pursuits such that one comes to worship objects rather than God. Second, it is noticeable that the root of the negative assessment of gluttony found in Christianity is not a condemnation of fatness. The sin of gluttony is not rooted in aesthetic judgments about beauty or body shape, and social stigmas and assumptions about physical standards of taste have no bearing on the prohibitions on gluttony. Gluttony is the shifting of

devotion away from God, not a proclamation of a specific vision of beauty standards. Thirdly, the condemnation of gluttony in Christianity is not a judgment of the baseness of food and drink in-and-of-itself. In fact, food and drink plays an important role in Christianity. Most notably, food and eating is at the center of the sacrament of communion, the miracles performed by Jesus often involved food and drink (such as turning water into wine at the wedding in Cana, the feeding of the 5,000 from fishes and loaves, the miracle of the draught of fish, and the catching of the 153 fish), and the consumption and sharing of food (both as a religious practice and an act of charity) is a common motif in biblical stories and parables. Scripturally, Christianity does not advance a conception of asceticism or the ascetic life. The moral concerns about food focus on the temptation to supplant the value and prestige of God with a value of pleasurable consumption and are thus not a condemnation of all things physical.

Gluttony's Nineteenth Century Connection to Fatness

Historical understandings of gluttony were, by and large, disconnected from an assessment of body types and body shapes. The immorality of gluttony before the mid-nineteenth century had little to do with fatness and was rather centered on either (a) describing the harmful effects of uncontrolled desires or (b) the ability of unrestrained behavior to distract one from the proper worship of the divine. This assessment has shifted. Since the mid-nineteenth century, gluttony has come to be associated with social, aesthetic, and medical judgments about fatness.

Up until the mid-1800's, fatness (in the Western World) was, for the most part, linked to wealth, health, and prosperity (Schwartz 1986). Fatness was a luxury of privilege and indicated a lifestyle above the toil of physical labor and beyond a meager existence of subsistence eating. While individuals, such as Daniel Lambert (a famous British man who weighed in excess of 700 lb), who were "excessively fat" were mainstays in spectacle shows (or so-called freak

shows), fatness was, to a point, socially accepted as a status symbol. In the mid- to late-nineteenth century, this social image began to change in conjunction with growing critiques of opulence and wealth. As social and economic critics began to target privileged classes and question the justice of accumulated wealth, fatness transformed from an image of prosperity and high social status to one of corruption, excessive opulence, and oppression. Industrialists and capitalists, by the 1920s, were being described as "fat cats" and unjust opulence began to become associated with bloated laziness and decadent lifestyles (Ayto 2006).

In conjunction with the social shift in the understanding of fatness came a change in the medical understanding of body shapes. Up until the mid-nineteenth century, medical professionals were not concerned with the health effects of fatness and rather focused the perils of those diseases that caused chronic wasting (Farrell 2011). As social attitudes towards fatness shifted, so too did medical attitudes. The mid-1800s saw a sharp rise in "medical" treatments for fatness, some from medical professionals and others from savvy entrepreneurs looking to capitalize on anti-fat biases. Dietary weight loss cures were marketed in magazines and traveling salesmen hawked miracle weight loss devices. By the early 1900s, fatness had become a medical concern, and medical opinions about body shape and size had become a central preoccupation (ibid).

The shifting of social and medical attitudes surrounding fatness has persisted to the present day. Fatness is still the subject of ridicule, particularly in regard to women, as well as a continued source of spectacle, as seen in the plethora of reality TV shows concerning weight loss challenges for the fat. Additionally, fatness has remained the focus of health campaigns as seen in First Lady Michelle Obama's "Let's Move" campaign which targets fatness and obesity in children. These continuing negative attitudes towards fatness have resulted in what some call "anti-fat bias."

As anti-fat bias has persisted and grown, so too has the social view of gluttony. Individuals who are labeled as fat have become stigmatized as gluttonous and edacious. Research into social

perceptions of fatness and gluttony has revealed that gluttonous overeating is perceived as the cause of obesity and fatness. Joint research from the University of Virginia, Yale University, and Oxford University revealed that test subjects displayed not only explicit and implicit anti-fat biases but connected these biases to ascribed gluttonous overeating done by “overweight” people (Teachman et al 2003). Researchers found that while providing information demonstrating a medical cause of fatness and obesity (such as an established thyroid condition) lessened the negative judgments of test subjects towards fat people, subjects (a) still negatively judged fat individuals even with medical or genetic conditions which predispose them towards larger body types and (b) still identified overeating as the cause of obesity both in these individuals as well as in society writ large.

What this study helps identify, along with other similar studies (see Chlouverakis 1975), is the assumption that gluttony is the cause of fatness. Gluttony has become a post hoc explanation for fatness, and the negative assessment of this fatness can be traced to the perception of gluttonous indulgence. For the tested subjects, despite being confronted with evidence to the contrary, gluttony is the only possible reason that someone could become fat. Since, for these people, being fat is bad, gluttony, as the cause of fatness, is also bad.

If this research data is true, what it indicates is that the persistence of fat biases influences, socially and culturally, the way individuals view gluttony both in cases where the gluttony is real and where one erroneously perceives it to be the cause of fatness. In this way, gluttony has become not only intimately tied to social norms about body shape but the way in which anti-fat bias is grounded and explained in negative moral assessments. In comparison to historical views of gluttony, this modern understanding of gluttony is now tied to social and cultural judgments of fatness.

Leaving the Language of Gluttony Behind

Recently there has been a trend, in both social and medical communities, to move away from the

language of gluttony in favor of new language, and therein new understandings, of overeating. For some, the language of gluttony has become antiquated and undesirable. The reason for this change is that gluttony, historically, described both the action of overeating (and more broadly overconsumption) and the excessive desires which caused overeating. In this way, gluttony describes both an action and its source. In describing an individual as gluttonous, the person's actions of overconsumption are traced back to a relatively simplistic picture of desire where one overeats because they desire food too much. The implication of this understanding is that actions of overeating always have a common origin in an excessive desire for food. For many, this understanding maligns the physical and psychological complexities which lie behind the actions of those who compulsively overeat.

Contemporary medical professionals researching eating disorders prefer the language of “compulsive overeating” to the language of gluttony. Research into bulimia (and also anorexia nervosa) has revealed that this eating disorder cannot be understood or reduced to overactive desires for food. Understanding eating disorders as merely excessive desires for food “completely ignores the reality of these conditions” (Johnson 2004). Psychologists have shown that eating disorders, by and large, stem from “a fragile sense of self and a core belief that life is uncontrollable” such that individuals with eating disorders use food and body weight as an “arena in which they can establish a feeling of control over their lives” (ibid). Understanding that the overconsumption of food found in certain forms of eating disorders stems from psychological states beyond merely an overactive appetite leads these researchers to jettison the language of gluttony. Labeling these eating disorders, variants of gluttony fails to capture the complexity of these conditions and perpetuates an anemic understanding of their cause(s).

Paralleling this move in the medical community, recovery programs aimed at helping individuals who are facing issues of overconsumption have jettisoned the language of gluttony in favor of “compulsive overeating.”

Overeaters Anonymous (OA), a 12-step program modeled on the principles of Alcoholics Anonymous (AA), opted for their current name during their first national conference in 1962. At this meeting, participants rejected a proposal to call the emerging organization “Gluttons Anonymous” (A Step Ahead 2011). This choice of name typifies this organization’s understanding of gluttony. The compulsion to overeat is not the product of excessive desires for food but rather a myriad of psychological compulsions of varied origins. Sharing a common view with other recovery organizations such as AA, OA members seek to identify the unique circumstances and compulsions which cause them to overindulge. For OA, it is not the case that similar indulgent actions shared among different individuals are indicative of a common and shared underlying cause, desire, or state of character. Each person who suffers from compulsive overeating does so for specific and unique reasons. Individuals in OA (in a way similar to people in AA) have chosen to distance themselves from the historically situated understanding of “gluttony,” preferring a more robust understanding of the actions of overeating which extends beyond the confines of the traditional discourse.

In this way, the medical, social, and moral landscape of gluttony has, again, changed. While the medical and social understandings of overconsumption have intentionally distanced themselves from the language and history of gluttony, the physical, medical, and ethical dimensions of health, compulsion, and responsibility remain. To some this might mean that gluttony, as a term and a concept, has become outdated, archaic, and useless (Su 2013). Yet to others it means that the moral and ethical issues surrounding gluttony have been, and need to be continually, expanded from its traditional roots into broader discussions of psychology, physiology, and addiction.

Summary

Dominant Western views of gluttony, and the assessment of gluttony as a moral failing, have undergone many changes. In Ancient Greek

virtue ethics, gluttony was chided as the manifestation of errant desires and proclaimed a barrier for the achievement of the good life. The emergence of Christianity altered this view and transformed gluttony into a form of idolatry where gluttonous individuals are rebuked as having shifted focus from the divine to the sinful pursuit of worldly pleasures. Moral views of gluttony again shifted in the mid-nineteenth century and have become intimately tied to social views of fatness and body shape. As attested to by experimental psychology, gluttony has become the perceived cause of fatness. The persistence of anti-fat biases have resulted in gluttony being identified as a moral failure which relates to unhealthy lifestyles and aesthetically displeasing body shapes. In addition to historical changes in understandings of gluttony, some have chosen to abandon the language of gluttony as a means for exploring the moral harms of overconsumption. Research into overeating as it relates to addiction and eating disorders shows that the language of gluttony fails to capture the psychological complexity of the compulsion to overconsume.

Cross-References

- ▶ [Alcohol as Food and the Good Life](#)
- ▶ [Christianity and Food](#)
- ▶ [Eating Disorders and Disturbed Eating](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Plato and Food](#)
- ▶ [Virtue Theory, Food, and Agriculture](#)

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GM Food, Nutrition, Safety, and Health

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Agriculture; Ethics; Food science; GM crops; GM foods; Risk; Socioeconomics

Introduction

Research on and development of genetically modified organisms (GMOs) has been facilitated by modern biotechnological techniques. The first GM plant, a tobacco plant expressing an antibiotic resistance gene taken from a bacterium, was grown in a greenhouse in 1983. Since then a variety of GM crop plants have been released

into agricultural fields. At present, herbicide-resistant crops are the most widely grown GM plants (approximately 70 %). These GM crops contain genes that enable them to degrade ingredients in herbicides and imply that farmers can control weeds by herbicides as well as low tillage practices. Genes from the *Bacillus thuringiensis* have been inserted in plants to make them resist insect attacks and are the second most popular GM crops at the market together with plants that contain stacked genes, a combination of herbicide tolerance and insect resistance. At present, there are a huge interest and research initiated to achieve disease tolerance, altered compositions, stress tolerance (especially related to drought tolerance), as well GM plants that can be used to produce pharmaceuticals and be used for environmental remediation.

Applications of GMOs offer prospects for better human and/or animal health, food improvement, new ways for production of biofuel and fiber, as well as environmental protection. The cultivation of GM crops agriculture has, however, also been followed with concerns. Opposition and scepticism to GMOs has been especially prominent in Europe, where the introduction and use of GMOs have become subjects of scientific and public discussions and controversies. There are divergent opinions on whether GMOs and GM food are representing risks of adverse effects on health and the environment. Part of the controversy over GMOs may originate in the novelty of the genetic modification techniques, the time before health and environmental impacts can be assessed, and the differences in value commitments, ranging from safety to social and sustainability issues (Melo-Martin and Meghani 2008).

In this entry, the technology behind genetic modification will be described together with a brief presentation of innovations with an emphasis on new events and usage. Concepts for risk assessments and the main concerns for safety, health, and nutrition will be explained together with a brief discussion of the importance to include assessments of socioeconomic effects and the sustainability by the use and introduction of GM crops.

GM Plants and the Technology Behind Genetic Modification

From the very simple GM plants with only one inserted transgene, the world is now facing plants containing multiple genes from several different species, encoding not only the trait of interest but also genes that enable the plants to express different traits.

The technology in use involves the transfer of genes from, among others, microbes into plants and includes laboratory methods used to identify and isolate DNA fragments or genes from one organism and insert into a vector (usually a bacterial plasmid) and transfer of the vector combination into a host cell (usually with help from a gene gun or by injection). This has evolved from the simple insert of, for instance, one gene of a *Cry* protein (derived from the bacterium *Bacillus thuringiensis*) and to what today is termed stacked GM plants, containing several different genes expressing both insect resistance and different kinds of enzymes leading to resistance to several kinds of herbicides at the same time (de Schrijver et al. 2007). This innovation trajectory has been driven by the increasing development of resistance among pest insects as well as evolving development of resistance among weed towards the herbicides in use.

Herbicide Tolerance

The most used approach is the development of glyphosate-tolerant crops. Glyphosate kills plants by blocking the enzyme EPSPS, important for biosynthesis of aromatic amino acids. In the glyphosate-tolerant plants, one has introduced a technology into the plants, targeting key enzymes in the metabolic pathways of the plants, like the EPSPS enzyme, and made it glyphosate tolerant.

The cultivation of herbicide-resistant crops has become a challenge due to the development of herbicide-tolerant weeds. One solution to this has been to introduce genes that have other ways of detoxifying the herbicide (Benbrook 2009). Another option is to use a combination of herbicides to give a more effective treatment. The target protein of the herbicide can also be

modified in ways that in the end makes it unaffected by the herbicides used.

Pesticide Resistance

The second most used approach is development of insect-resistant crops, dominated with what has been termed Bt plants containing *Cry* protein from the bacterium *Bacillus thuringiensis*. The main targets are insect orders considered as pests in fields such as Lepidoptera, Diptera, and Coleoptera. When the insect ingests the *Cry* protein, the protein is converted to its active, toxic form. The toxin binds to receptors on the midgut epithelial cells, which subsequently are followed by development of pores in the cell membrane. The development of pores affects the regulations of osmotic pressure, and this disruption of the digestive system causes the insect to starve and eventually die.

The intention behind Bt crops is to avoid using chemical insecticides to control pests in agriculture. From the onset, there was a concern that Bt crops could harm nontarget insects and that target insects could develop resistance. Bt plants enable a constant exposure, potentially creating an evolutionary pressure for pest resistance to the toxin. Although management strategies have been implemented as refuges, areas surrounding the fields with non-Bt crops to facilitate nonresistant insects to survive and establish a susceptible population, pest insects have developed resistance (Gassmann et al. 2011). There are many different options when it comes to solving the upcoming challenges of resistance development. It has, for example, been identified around more than 100 different variations of Bt toxin that can be used in combinations to reduce the speed of development of resistance in pest insects. Other insecticidal compounds as defense proteins are also under investigation for being used in future insect-resistant plants.

Analogy to the History of Antimicrobial Resistance

The history of resistance development between weed and pests by cultivation of GM plants is starting to look like the history of development of antibiotic resistance in pathogenic bacteria.

With antibiotic resistance, the answer to the increase in resistance development has been to decrease the use of the causing agent – not to increase it. As it is now, the development of tolerant weeds and resistant pests is forcing farmers to increase their use of herbicides and pesticides as well as the use of multiple applications to overcome this evolving challenge. There is crucial need to consider new and more constructive ways of dealing with the development of tolerance and resistance. The problem will not disappear with the emerging stacked GM plants and herbicides and pesticides in use, unless there is a change in management practices.

Food, Feed, Fuel, and Fiber

In 2012, the most planted GM crop was GM soy (approximately 80 mill acres planted), followed by GM maize, cotton, and oilseed rape (ISAAA 2013). In addition, GM papaya and sugar beet are grown commercially in the USA and tomato and peppers in China. GM soy, maize, cotton, and oilseed rape are crops that can be used for different purposes as, for example, food, feed, fiber, and fuel. At present, most GM plants are used in food and feed around the world either as the plant itself or in processed form. GM cotton is used both for fiber and animal feed, while especially GM maize, soy, sugar cane, and oilseed rape are relevant as sources for producing bioethanol. Research has also been initiated with trees as GM poplars for pulp and biofuel production.

Innovation/New GMs

Future releases of GMOs may be plants that will be intentionally designed to be physiologically or nutritionally significantly different or contain a number of different transgenes (stacked events). Traits resulting in climate tolerance and enhanced benefits for the consumer such as better taste, longer shelf life, and increased nutritive value may be expected. The future of GM and innovation in plant improvement technologies

(agriculture) will be affected by the future needs of our increasing populations.

The food industry has already innovated new GM plants containing higher amounts of compounds that is heavily used in the food industry. This includes new traits for industrial processes as starch from GM potato and oilseed rape with changed content of fatty acids.

As a response to consumers request for more nutritious food, there are several initiatives using genetic modification for developing “functional food” with either higher levels of nutritious substances already found in plants (as fatty acids) or plants that produce substances not found in plants (as omega-3 fatty acids). The most famous example of GM plant with substances beneficial to human health is the Golden rice developed by Ingo Potrykus and colleagues. The Golden rice contains beta-carotene, a metabolic precursor to vitamin A. The intention behind the development of the Golden rice is to prevent vitamin A deficiency in especially Southeast Asian countries. The health and benefits of this rice addressed is, however, controversial. For example, it has pointed out that beta-carotene may increase the risk of cancer in smokers and asbest workers (Omenn et al 1996). That the early version of the Golden rice produced to low amounts of vitamin A to even tackle vitamin A deficiency. New and improved versions of Golden rice have been made, but the bioavailability of vitamin A from these plants has also been questioned (Botha and Viljoen 2008). And as of today, Golden rice is still not commercialized.

At present, there are a huge interest and research initiated to achieve new GMs, and this also involves new approaches as using nanotechnology, RNAi technology, and synthetic biology that can be used separately or in combinations. Whether the introduction of new GMs and new technologies will translate into greater health and environmental risks than present is not clear.

Regulatory Frameworks

There is international law that covers regulation of GMOs, which includes the WTO (SPS and TBT)

and the Cartagena Protocol on Biosafety under the Convention on Biological Diversity (CBD). In addition, there is international soft law, made up of the emergent standardization on the level of protection together with the decisions taken by individual countries on risk assessment and risk management based on the precautionary principle among other things.

There are national laws, with some of the most marked differences between the USA and Europe. Regulation varies in a given country depending on the intended use of the products, and in general, GMOs can be notified for import and processing, for food, feed, and industrial use and/or cultivation. A GMO application can cover one or more of the different categories.

Europe

The EU has enacted some of the most restrictive rules when it comes to regulatory frameworks for GMO assessments, matched only by Norway's GMO legislation. The biosafety regulatory framework follows the GMO development process from research in contained use to deliberate release and placing on the market; to labeling and traceability of GMOs as food, feed, or for processing; and to transboundary movement. Risk assessment in the EU is conducted via the European Food Safety Authority, EFSA, who coordinates scientific committees, which provide advice to decision-makers. The different regulations are the Deliberate Release Directive where the objective is the protection of human health and the environment, and it is based on the precautionary principle, and the GM food/feed regulation where the objective is the protection of human and animal's health and the environment. It also ensures transparency, so that consumers are aware of the GMO content of a product. Further, the regulation on traceability objectives allows for the control and monitoring of GMO production and the marketing chain, and the regulation on transboundary movements (export and import) of GMOs in the EU implements the obligations under the Cartagena Protocol on Biosafety. It states that no export of GMOs destined for environmental release can be carried out by any European exporter without the advanced

informed agreement from the potential importing country.

Norway must in addition to the criteria of health and the environment heed the criteria of social utility and sustainable development. The purpose of the Norwegian Gene Technology Act (No. 38/1993) is to ensure that the production and use of GMOs take place in an ethically justifiable and socially acceptable manner, in accordance with the principle of sustainable development and without adverse effects on health and the environment. The ethical criterion as well as the wording on socioeconomic concerns of EU Directive 2001/18 may also have some opening for inclusion of issues beyond health and environment (EFSA 2011).

USA

The USA has far more GM crops on the market than any other nations, and their regulatory systems with respect to GM foods are organized under existing statutes design for invasive plants, chemical pesticides, and food additives. Hence, in the USA, the use of recombinant DNA techniques per se would not trigger any special regulatory consideration. These policy directives led to the doctrine that later became known as the "substantial equivalence" (Freese and Schubert 2004). The federal statutes that are used to regulate the products of agricultural biotechnology give primary jurisdiction to three agencies: the Food and Drug Administration (FDA), the Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), and the Environmental Protection Agency (EPA).

In general, technical experts consider the safety of GM crops on a case-by-case basis in line with the concept of substantial equivalence. The substantial equivalence approach entails that the chemical composition and some biological characteristics of a GMO and its unmodified counterpart is compared with the purpose to identify if there are some relevant changes that need to be further assessed. Furthermore, the US risk-based regulation does not as the European regulation involve ethical and social factors in their risk evaluation.

Cartagena Protocol

The Cartagena protocol on biosafety is an international agreement that seeks to establish an international framework for safe management of all potential uses of GMOs (LMO is the term used in the protocol) that could affect biodiversity. The protocol, which is a supplement under the Convention of Biodiversity, went into force in 2003. The objective of the protocol is to contribute to ensuring an adequate level of protection under transboundary movement, handling and use of LMOs that may have adverse effects on the conservation and sustainable use of biological diversity. Risks to human health are also included. Moreover, the parties may take socioeconomic consideration arising from the impact on the conservation and sustainable use of biological diversity into account.

By March 2013, 166 countries have signed the protocol; however, the main producing countries as the USA, Canada, and Argentina are not at present signatories.

Risk Assessment

Genetically modified plants, such as crop plants intended for food and feed or release into the environment, have to undergo risk assessment prior to marked authorization in many countries. In most countries, governmental employees are responsible for the performance of regulatory risk assessments in accordance with international and national laws. In general, the safety assessment of GM food and feed should be assessed in a case-by-case basis, and it should not be possible to make general statements on the safety of all GM foods.

The main lines of arguments or principles applied in GMO assessments can be divided into three broad categories: environmental, health, and social concerns. When it comes to potential health risks associated with GM crops for human or animal consumption, concerns about increased resistance to antibiotics, toxicity, and allergenicity have arisen. In general terms, the safety assessment of GM foods should investigate toxicity, allergenicity, specific components

thought to have nutritional or toxic properties, stability of the inserted gene, nutritional effects associated with genetic modification, and any unintended effects which could result from the gene insertion (WHO 2002).

Antibiotic Resistance

Antibiotic resistance is a highly efficient tool for practicing GM techniques because it easily allows the scientist to identify the cells that are expressing the cloned DNA and to monitor and select for the transformed progeny. The selectable marker gene is usually co-transformed with the gene of interest and can therefore be transferred to other organisms. In the case of antibiotic resistance markers, there is a fear that the presence of these markers in GM crops could lead to an increase in antibiotic-resistant bacterial strains in general and that the antibiotic resistance genes should be transferred to a pathogen (VKM 2005).

While Norway, when assessing cases of antibiotic-resistant GMOs, bans the production, import, and sale of all GM products that contain genes coded for antibiotic resistance, the EU does not. Generally, selectable marker genes are not required, and methods are being developed to create marker-free plants.

Allergenicity and Toxicity

There has been an increased focus on health/toxic effects associated with not only the introduction of a foreign gene but also the effects associated with herbicides used with GM crop cultivation. Also, since the prevalence of allergic diseases has been increasing continuously, the question if GMOs exhibit increased allergenicity has been raised. There are studies today that show that GM crops do have the potential to cause allergic reactions, due to the introduction of potential foreign allergens, to potentially upregulated expression of allergenic components caused by the modification process or to different means of exposure (Freese and Schubert 2004; Spök et al. 2005).

In the EU, the assessment of the allergenic or toxicological potential is required for marked authorization of GM crops. However, very often the applications only contain arguments

supporting why the GM plant does not present any allergenic or toxicological risk, and no experimental work to assess the allergenic or toxicity potential of the GM plants is included. The most frequently used arguments for allergenicity assessment are “the source of the novel protein does not derive from a known allergen source, lack of sequence homology to known allergens, the novel protein can be easily digested, and the inserted gene is expressed at low levels.”

For toxicity assessment, the most frequently used argument is very often based on the general “weight of evidence approach” consisting of history of safe use, lack of structural or functional relationship to proteins that adversely affect human or animal health, low expression level of the protein in the grain, rapid digestion of the protein in mammalian simulated gastrointestinal fluids, and lack of acute toxic effect to mammals.

Very often, biotechnology companies do not test the transgenic protein actually produced in their engineered crops. Instead, for testing purposes, they make use of a bacterially generated (usually *E. coli*) protein that may differ from the plant produced one. Many of the posttranslational modifications (PTMs) differ between species, tissues, stage of development, and according to environmental variables such as temperature and light intensity which makes it important to test the transgenic protein actually produced in the engineered crops and not the surrogate protein (Gomord et al. 2005; Küster et al. 2001).

In order to scientifically address the potential health effects of a GM plant, it is necessary to have access to tests, preferably on mammals. Mammalian feeding trials have been usually but not always performed in applications in order to obtain commercialization for GM plant-derived food or feed (EFSA 2008). There is an ongoing debate regarding the necessary length of mammalian toxicity studies that should be included in a risk assessment before a GM plant product is released on the market for food/feed consumption.

There are many in vitro systems (such as usage of human cell cultures) that can be used to assess relevant risks regarding allergenicity and toxicity, testing in such systems not required today.

In addition, new methodological toolboxes, such as genomics, proteomics, and metabolomics, have been developed to cope with complex interactions, the cooperation and coordination of multiple genes, and the dynamics of total genomes. These developments opens up for new possibilities and will have future implications for biosafety assessment of GMOs (Heinemann et al. 2011).

The Precautionary Principle and Approach

The role of the precautionary principle and approach in risk assessment and management of GMO use and release is a subject for scientific and public discussions. There has been a shift in the debate from how to apply the precautionary principle into elaboration over what a precautionary approach might entail. A precautionary approach to GMOs requires a renewed look at the science underpinning risk assessment and management of GMO use and release and entails an awareness of that there is a difference between risk and uncertainty. This also implies that there is a need to identify practical means for a precautionary-oriented research design and to explore the role of precautionary motivated science in GM policy and research decisions.

Sources of Information

Most assessments and biosafety data are produced by the GMO applicant and submitted to the regulatory authority together with the technical details of the products as well as responses to other requirements, often with portions labeled as confidential business information (CBI). Data that are considered to be CBI (e.g., insert sequences, toxicology and allergenicity studies, environmental interaction) are not accessible and can therefore not be scrutinized by others than regulators (Nielsen 2013). With most of the data submitted by the companies to the regulatory authorities being considered as CBI, independent scientific studies concerning potential toxic effects/health risks of GM crops for animals or humans are severely lacking from the scientific

literature. As showed by Domingo (2007), few studies (most of them being short-term studies) have been conducted until now. In 2012, Séralini and coworkers published that herbicide-tolerant GM maize and the herbicide Roundup were toxic to rats. The controversy that followed this publication illustrates the need for long-term studies of health effects by GM consumption.

GM crops are grown in agriculture fields and may have impacts on biodiversity within the fields and in the surrounding. Some scientists have raised concerns regarding the spread of transgenes to wild or weedy relatives, the impact of GMOs on nontarget organisms, the accumulation of *Bt* toxins in the soil, and adverse impact of GMOs on insects (such as bees), nematodes, and birds, all of which either consume GMO seeds or their by-products or are present in glyphosate-saturated soils. These are all areas of concern where additional studies are needed to gain a fuller understanding.

In general, it has been argued that there is a need to achieve a more transparent assessment process, where it will be possible to get access to information and raw data as well as testing material. A more open process will also allow for testing and verification by other institutes and scientists and hence provide broader assessments of the risks and uncertainties involved.

Monitoring and Labeling

According the EU Directives, the applicant has to elaborate plans for post-market monitoring (PMM) of the GMO. The purpose of monitoring is twofold, firstly to confirm assertions made in the risk assessment regarding the occurrence and consequences of potential adverse effects by introduction of the GMO or its use, so-called case-specific monitoring, and secondly to identify the occurrence of unanticipated effects on health or the environment of the GMO, termed general surveillance monitoring. This is a challenging task, for example, at the European level, there are different regions and a variety of agroecosystems with differing protection, environmental, and socioeconomic goals.

To monitor, one needs historical data that can only be provided by baseline information and indicators. Such data may relate to characteristics of agriculture practices, ecological conditions for farming systems, and ecosystem functions. In many countries, there are established environmental monitoring programs that may provide baseline information; however, unwanted health effects may be more difficult to identify. When monitoring for the health effects of a GMO, we have to know when, what, and how much of a GMO was eaten and for how long which means that exact labeling for all GMO components is important. And also, in order to systematically assess the impact of any GMO on health or the environment, one must be able to answer the questions, “is the GMO present in the material of interest?” and “how much of it is present?” which means that analytical methods are important.

To have an actual free choice on what you eat also involves that you know what you eat (Thompson 2007). One cannot identify GMO products barely by looking at it; thus, one is dependent on proper labeling to do an active choice. The concern for human and environmental health, animal welfare, and biodiversity has caused evolving demands for labeling of GMO products. Hence proper labeling is necessary for enabling consumer choice and for traceability in case of unforeseen effects. The EU has GM food and feed regulations that allow a threshold of 0.9 % for presence of EU-authorized GMO in cargo or food and feed samples. In contrast to the EU, the USA has no GMO thresholds or obligatory GMO labeling. Industry should take an active part of this, especially since labeling in general of food products increases the trust of consumers towards food industry.

Sustainability and Socioeconomic Aspects

The issue of sustainability, social, and ethical aspects of gene technologies and the use of GMO is often a part of the national and

international debate. Some countries consider some of these aspects in their regulations and some not.

Recently, there has been an increase in interest in defining potential or observed socioeconomic impacts of GM crops. To get an improved understanding of socioeconomic aspects by producing GMOs, there is a need for identification of monetary and nonmonetary implications at farm and community level, impacts on sociocultural and institutional context of GM crop introductions, as well as elaboration of protection goals in relation to socioeconomic welfare.

The Brundtland Commission defined the concept of sustainable development in the following way: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987).

In a report by Rosendal and Myhr (2009), it was found through an analysis of the scientific literature that very little experimental research has been carried out to identify how GM crops in practice affect sustainability and societal issues around the world. Accordingly, the author's emphasis the need for research on how GMOs affect sustainability and socioeconomic aspects in countries that grow GM crops and in those that import GM-based products. Moreover, the scepticism against GM in food production within Europe has shown that consumer preference and acceptance are needed to be taken much more seriously (Thompson 2007). The cultural significance of food is closely attached to concepts as naturalness, religion, ethics, and tradition, which are societal aspects that need to have a much more important role.

Summary

GM plants and products are at present used as food and feed around the world. GM plants are also increasingly used for fiber and in biofuel. Most of the commercial varieties are developed to provide tolerance against herbicides and resistance against pest. There are initiatives for development of new GM plants that may have changed

nutritious value or other characteristics of interest for consumers. However, there are still unresolved questions with regard to potential risk to health and the environment. This has triggered a call for application of a precautionary approach as well as awareness to the broader issues as sustainability and socioeconomic aspects by introduction and use of GM plants. In the future, it is important that more broad assessments are carried out of GM plants; this is a responsibility that lies on the industry, on the scientific community, and on the governmental authorities.

Cross-References

- [Agricultural Ethics](#)
- [Biotechnology and Food Policy, Governance](#)
- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Climate Change, Ethics, and Food Production](#)
- [Environmental Ethics](#)
- [Functional Foods](#)
- [Transgenic Crops](#)

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GMO Food Labeling

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Synonyms

Genetic engineering and food labeling; Genetically modified organisms; Transgenic crops and food labeling

Introduction

Genetically modified organisms (GMOs) are organisms made using recombinant DNA (rDNA) technology, also referred to as genetic engineering or gene-splicing. This technology involves using individual genes from a source organism to modify the living DNA of a target organism from a different species, which can be an animal, plant, or microorganism. Producers are thus able to overcome the species barrier, a natural limitation of traditional methods of genetic improvement such as plant hybridization. First developed in 1973, transgenic techniques have been used to create disease-, pest-, and herbicide-resistant crops, faster-growing animals, and plants with enhanced nutritional properties (NAS 2010; Blatt 2008).

Countries vary widely in how GM food products are labeled and regulated. Over 40 nations currently require all foods with GM ingredients above a certain threshold to be labeled, including all European Union (EU) countries and most Asian nations. In Europe, transgenic crops can be planted only in very limited areas, and in most African countries, growing GM crops is illegal. Labeling is also mandatory in Australia, New Zealand, and Japan (Paarlberg 2010). But in others – most notably, the USA, Canada, and Argentina – labeling is voluntary and rare. In these countries, GM crops are widely grown,

especially soy, corn, cotton, and rapeseed (canola). Over 80 % of processed foods currently found on American grocery shelves contain ingredients derived from GMOs. However, surveys show that most consumers are unaware of the extent to which their food contains GM ingredients and the vast majority of consumers are in favor of mandatory labeling (Radas et al. 2008). This entry will discuss current policy and common arguments for and against GMO labeling.

Historical Background

In the 1990s, countries around the world first began approving GMOs for commercial use. Beginning in 1994, the US Food and Drug Administration (FDA) approved the Flavr Savr™ tomato, soon followed by the Monsanto Corporation's Roundup™ Ready soybean and its Bt versions of corn and cotton. Roundup Ready™ crops are engineered to resist glyphosate, the main ingredient in Monsanto's popular Roundup™ herbicide, and Bt plants have been modified to produce their own insecticides using a gene from a soil bacterium (Blatt 2008). Since the mid-1990s, the FDA has cleared many other crops. It is currently considering a proposal to allow the sale of genetically engineered salmon developed by AquaBounty which would grow much faster than natural salmon. Through the early to mid-1990s, many other countries followed a similar regulatory trajectory: the EU approved several GM crops for commercial use while selected others were approved in Australia, Mexico, Japan, and Argentina (Thorpe and Robinson 2004).

Soon thereafter, countries began to diverge in their treatment of GM foods. The US and Canadian governments have continued on a supportive path and have consistently denied the need for the mandatory labeling of GM food ingredients. Food labeling in the USA is governed by the FDA, under the authority given to it by the federal *Food, Drug, and Cosmetic Act* (FDCA), with the exception of meat and poultry products which are overseen by the US Department of Agriculture (USDA). In 1992, the FDA announced that the

fact that consumers might want to know whether a food had been produced using transgenic techniques did not justify mandatory labeling since it found no evidence that human consumption of biotechnologically produced food was unsafe (FDA 1992). Since the FDCA authorizes the FDA to prevent misleading labeling practices, implicitly this meant that in the agency's view, nondisclosure of GM content does not make a product's label misleading. At the same time, the FDA announced that GM foods can be marketed without independent testing unless they contain surprising ingredients, like a tomato containing a peanut protein, which could pose problems for consumers with peanut allergies. Companies seeking to market GM crops now participate in a relatively informal approval process called an FDA "consultation" in which they voluntarily present the results of their own testing to the agency. All GM foods and feeds currently available in the USA have undergone this review, as it is in the interest of producers to do so (McHughen and Smyth 2008). By and large, the Canadian government has taken a similar approach. As in the USA, GM foods need not be labeled as such, although in Canada manufacturers must submit data for pre-market review before GM products can be sold (Wohlers 2010).

The European approach has evolved to be quite different from the American model. Broadly, whereas the US regulatory focus has been on the end product, the EU has focused more on process. Beginning in the late 1990s, the continent's previously more permissive attitude was replaced by a more conservative position. Guided by what is known as the "precautionary principle," the idea that in the absence of sufficient scientific evidence, potentially harmful activities should be treated cautiously, EU regulators need no specific evidence of risks to health or the environment to block a GM food from coming to market. All products with more than 0.9 % GM content now must be labeled (Paarlberg 2010), and special requirements apply to GM foods which exceed the general "traceability" mandates that apply to all EU foods, food ingredients, and feed (EU 2007).

Several things help to explain this comparatively cautious approach. The continent's experience with "mad cow" disease in the late 1990s heightened concerns over food safety, giving anti-biotech activists an opportunity to take advantage of consumers' fears. Also, Monsanto and US grain processors blundered in their first shipments of GM products to Europe by mixing GM and conventional soy together and sending the mixture to the continent unlabeled and unannounced. In response, European media started to give GMO foods significant coverage, leading to high consumer awareness of what soon became derided as "Frankenfoods." Some grocery chains gained market share by pledging to carry only GM-free foods, and others soon followed suit. Moreover, all of these events took place in a cultural and political context different from that found in the USA and Canada. Europeans have a long-standing cultural attachment to locally grown food, and agribusiness firms have less political clout in Europe than in North America. Whereas most farming in the USA is done by large-scale agribusinesses, in some areas, European farming remains comparatively nonindustrialized and family oriented (Schurman 2004).

Arguments for Labeling

The most common argument in favor of GMO food labeling is based on considerations of consumer autonomy, often expressed in terms of the customer's "right to know." In general, personal autonomy is the right to make important decisions about one's life for oneself, free of deception and coercive influences, in light of one's values, goals, and conception of the good life (Brock 1999). The standard argument for GMO labeling is thus that respect for autonomy requires allowing consumers to decide for themselves whether to use products with GM ingredients, which is a decision consumers can make only if food manufacturers disclose the GM content of their products. Some authors have argued that so-called negative labeling – labels that state the absence of GM content – is equally respectful of consumer autonomy as positive labels that reveal

the presence of GMOs (Hansen 2004). Also, negative labels effectively put the cost burden on consumers who desire information about GM food by enabling a price premium to be charged for non-GM products (Schmitz et al. 2010). Thus, negative labels are sometimes defended as a more fair way to allocate the costs associated with labeling and product differentiation. Current US standards require products labeled as "certifiably organic" to be GMO-free, which thus amounts to a kind of negative GMO label (Guthman 2003). Typically, however, consumer autonomy is used to argue for mandatory positive labeling.

The consumer autonomy argument is supported by numerous surveys over the years showing the vast majority of consumers in favor of required labeling. Recent studies by the Mellman Group and MSNBC found over 90 % of American consumers supporting mandatory labels (Cummins 2012). Such results need to be interpreted with some care, however. At least in the USA, most consumers know little about GM-related issues, although this is not surprising given the relatively scant attention American media have given to the topic over the years. Consumer antipathy typically lessens when buyers are informed that they have likely been consuming GM products for years (Radas et al. 2008). Also, at present, most consumers see little personal benefit from GM foods. Currently, most of the gains from GM techniques accrue to manufacturers and growers by way of reduced production costs (Schmitz et al. 2010). Consumers derive no additional nutritional benefit from most transgenic crops, since corn syrup, soy protein, and corn oil are the most common GM ingredients found in processed food (Blatt 2008). Their attitude becomes notably more positive when consumers are surveyed about GM techniques that enhance food quality, such as when they allow for the use of less pesticide or a longer shelf life or when they yield ingredients with enhanced nutritional benefits (Boccaletti and Moro 2000). Note also that there has been virtually no social resistance in developed countries to the use of genetically engineered recombinant medical drugs.

Especially early on, the consumer autonomy argument was commonly coupled with concerns about the safety of GM foods. Critics often point to the fact that GMOs rarely undergo independent safety testing. They also commonly allege some level of collusion between the US government and agribusiness firms in covering up harms, frequently citing the so-called revolving door that exists between government and the biotech industry (Smith 2008). Scattered reports of allergic reactions and other adverse events allegedly resulting from GM consumption also can be found. Thus, labeling is often advocated as a way for consumers to protect themselves. However, to date, the overwhelming scientific consensus is that GM foods are safe and “substantially equivalent” to their traditional counterparts, given that the changes brought about by genetic engineering usually fall well within natural ranges of biochemical variation. In fact, some scientists argue that GM crop varieties usually can be assumed to be safer than those that are produced by traditional breeding methods since GM technology targets isolated genes, leaving the rest unchanged, while traditional breeding sometimes produces unexpected changes (Spencer 2002). Regardless, since the 1980s, various distinguished scientific societies and organizations have pronounced GM crops to be safe, groups such as the National Academy of Sciences (NAS), the Royal Society of London, the French Academy of Sciences, the World Health Organization (WHO), and the American Medical Association (AMA). Consequently, worries about the safety of GM foods are less prevalent than at one time. Still, comparatively few independent health studies have been conducted and those that have been done tend to be short-term studies involving small sample sizes (NAS 2004).

However, consumers often have reasons other than health for wanting to know whether or not their foods contain GMOs. They may be wary of GM products because for religious or other reasons, they oppose what they see as an attempt to “play God.” The fact that genetic engineering involves mixing genes from different species strikes some as disconcerting hubris. Other consumers worry about the long-range

environmental effects of these technologies. Though in some cases the use of genetically engineered crops yields net environmental benefits, these effects may reverse themselves over time. For example, the advent of herbicide- and pesticide-resistant weeds and insects is a distinct possibility, particularly on farms where the same kinds of seeds and chemicals are used year after year (NAS 2010). Companies may be forced to continually introduce new varieties of organisms that can be sprayed with increasingly potent chemicals, resulting in a genetic engineering “treadmill.” Also, widespread GM farming means a loss of biodiversity, since GM techniques lend themselves most readily and efficiently to industrialized, mono-crop agriculture. Mono-crops are vulnerable to threats other than those that they have been engineered to resist (Blatt 2008). Other consumers are concerned about the privatization of agriculture that GM crops represent. Whereas seed used to be part of the commons, GMOs are patented forms of intellectual property. Growers’ contracts with seed companies require them to buy new seeds every year instead of saving seeds from the previous year’s crop, as is common in traditional farming practices (Shiva 2011). Monsanto in particular has sued numerous farmers for patent infringement when seeds from nearby GM crop fields end up in an unsuspecting farmer’s land, regardless of how they got there (Center for Food Safety 2010). Concerns about privatization are also fueled by the fact that agriculture is becoming increasingly controlled by a small number of powerful, multinational corporations. GM techniques contribute to that trend. Lastly, some fear the effects of GM agriculture on nontarget species. Controversy has existed for some time regarding whether or not the insecticide produced by Bt corn kills monarch butterfly larvae, and genes from the same hybrid have found their way into native maize in Mexico (Kuzma et al. 2009).

Arguments Against Labeling

The most common argument against GM food labeling is that labels would not significantly

enhance consumer autonomy and might needlessly scare people away from GM foods. This charge can take various forms. One complaint is that labels are unlikely to be specific enough to convey useful information. Labels announcing that a particular product “may contain genetically modified ingredients” might be largely ignored. Consumers who are concerned about the presence of some GM ingredients but not others would be poorly served by a generic label, and absent something more definitive, consumers may pay little heed (Spencer 2002). Requiring the labels to be more specific has its own drawbacks, however. For example, many processed food products contain highly refined oils derived from GM crops, but such oils typically lack any of the source organism’s DNA (McHughen 2002). A consumer trying to avoid ingesting genetically modified DNA would have no reason to forego these products, but most consumers are unlikely to understand these subtleties. The greater the amount of technical information conveyed, the more knowledge consumers need to make use of the information.

Another way to question the need for labels is to emphasize the difference between nutritional labeling and GM labeling. If it is assumed that GM foods are safe and healthy, then mandated GM labels require a rationale different from that used to justify current nutritional labeling requirements. Against this, though, current US label requirements demand more disclosure than is strictly speaking related to health and safety. Manufacturers must reveal the presence of artificial flavors and colors, country of origin, and quantitative information about products, none of which are directly related to health (Streiffer and Rubel 2004). Critics of mandatory labels also compare the absence of GM labels to the absence of labels disclosing extraneous ingredients like hair fragments, animal excreta, and so forth (Spencer 2002). Such contamination is unavoidable, given the realities of modern food harvesting and processing. Yet the fact that the FDA does not require such information to be disclosed is not usually taken to be a violation of consumer autonomy.

GM labeling requirements also must resolve some practical difficulties. One problem is that of determining an adequate threshold for the distinction between GM and non-GM ingredients. Given the widespread sharing of grain elevators, transportation vehicles, and processing facilities and the reality of wind-blown seeds and insect pollination, it is virtually impossible to completely prevent non-GM fields from GM contamination. Some reasonable cutoff point must be decided upon, then, for the distinction between GM and non-GM to be viable (McHughen 2002). Relatedly, in order to be effective and meaningful, labeling requirements must be enforced. However, enforcement requires testing, and testing crops for GM content is expensive. Perhaps the most likely scenario is that non-GM producers would face increased costs resulting from validation procedures, costs that would almost certainly be passed on to consumers. The more difficult and costly it becomes for producers to certify their products as non-GM, the more likely they are to engage in rent-seeking behavior (Guthman 2003).

Summary

Given the multiple possible uses of genetic engineering and the variety of new organisms likely to be developed, labeling practices are likely to remain controversial for some time to come. Several nongovernmental organizations (NGOs) such as the Center for Food Safety, Greenpeace, and the Union of Concerned Scientists continue to push for tighter regulation of GMOs. In several states, legislation has been introduced to require mandatory labeling and some members of Congress have supported pro-labeling bills for several years. To date, however, these efforts have had little effect. In 1996, Vermont voters passed a referendum to require labeling of dairy products from cows treated with recombinant bovine growth hormone (rBGH) which is used to increase cows’ milk production. Following an appeal by Monsanto and the dairy industry, however, the law was struck down on First Amendment grounds. A 2002 ballot initiative in Oregon

that would have required GMO labeling failed by a wide margin after agribusiness advertised heavily against it. A similar 2012 voter referendum in California was defeated after opponents of labeling outspent supporters by five to one.

Stepping back from such skirmishes, however, the debate about the labeling of GM food and GM technology itself illustrates a divide that reappears in many disputes about food and the environment. Those against mandatory labeling tend to regard genetic engineering as an extension and refinement of traditional breeding methods. For them, this technology is a means of solving important problems in agricultural production and the world's food supply by introducing foods with improved nutritional qualities or resilience to climate change and other vulnerabilities. Those in favor of mandatory labeling tend to regard genetic engineering more negatively. For them, this technology represents an unwelcome and unnecessary change in the relation between humans and the rest of the natural world.

Cross-References

► Food Labeling

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Grocery Store Design

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Synonyms

Architecture: supermarket, grocery; Interior design: supermarket, grocery; Supermarket design

Introduction

Grocery stores in the United States, with few exceptions, share similar floor plans and display items in a similar fashion. This is no coincidence, nor is it an accident. Grocery store design is a deliberate process that is informed by a variety of factors, not the least of which is profit. Since their introduction into the American landscape, grocery stores have grown and changed in order to meet greater customer demands and increase profits. Merchants of old would hardly recognize their modern counterparts and the innovations that have been introduced, adopted, adapted, and are now commonplace in our grocery stores. They would likely be surprised to find that psychologists, anthropologists, and sociologists can be found, at one time or another, on the payroll of every major food retailer. Along with experts in marketing, sales, and advertising, social scientists have found a place in the industry determining the best way to structure a store, from the floor plans to promoting the items within, in order to yield the greatest revenue. This monograph discusses the history of American grocery store design and the factors that influence modern design. It will examine the ways in which population trends, consumer research, technological innovations, and competition have contributed to the evolution of the market, from a one-on-one interaction to something akin to a self-guided tour, concluding with a brief discussion of some of the ethical questions surrounding modern grocery store design.

Background

From the Trading Post to the Piggly Wiggly

First came the trading post; then the general store, which evolved into the neighborhood grocery store; and eventually the supermarket. In the days before supermarkets, consumers purchased items at multiple stores, such as a mercantile and general store, or directly from the source, e.g., the farmer. Certain stores carried dry goods, while others carried dairy items. The greengrocer sold produce and the butcher supplied fresh meat. It was not until the 1920s that self-service stores began to offer fresh meat, produce, and other perishable items under the same roof as dry goods.

As American cities became larger and more densely populated, the demand grew for more efficient stores that carried a greater variety of items under one roof. Shoppers grew weary of the way that early retailers operated, with clerks measuring out bulk items for them while they waited. They were not alone in their frustration. Retailers recognized that waiting on customers was a labor-intensive process that adversely affected their revenue stream, shrinking their profit margins. The retailer's ability to wait on the customers was limited by the number of staff available, and their earning potential was, in turn, hampered by staffing costs. In short, the system was inefficient for both retailers and customers, and it was their mutual frustration that inspired the development of the self-service system upon which modern retail practices are based (Petroski 2005).

In 1916, Clarence Saunders, founder of the Piggly Wiggly stores, introduced the concept of a self-service grocery store, a precursor to the modern supermarket, wherein the nonperishable items were sold alongside perishable goods. Saunders, who was once a clerk in a general store, recognized the inefficiencies of grocery store operation. He identified high overhead and credit losses as principle issues limiting the success of retail grocery stores at the time. The highest of these costs was staffing. Before self-service, customers required assistance in order to access items, which necessitated a high staff to

customer ratio, or, in the absence of such, they waited an excessively long time for service, increasing the potential for customer frustration and dissatisfaction. In response to these issues, Saunders developed and patented a three-point plan for his grocery store system, improving efficiency and the consumer experience, leading to larger profits for store operators (Petroski 2005). Elements of his plan are still an integral part of grocery store design to this day.

The first step in his plan called for an entrance/exit room or lobby. In this area, incoming shoppers would enter the store and exiting shoppers were routed to clerks who would pack customer orders and operate the cash register. Saunders later reconfigured this area in a patent issued in 1920, separating the two and making the exit room resemble today's checkout areas. Under the original design, shoppers entering the store were met with shoppers attempting to check out, resulting in congestion that prevented incoming shoppers from easily reaching the sales floor. The new design included two checkout lanes, one that was constantly in operation and a second one on standby, to be opened in the event that the active checkout lane was overcrowded with customers (Petroski 2005).

Point two of the three-point plan addressed customer flow or circulation, with a floor design that amounted to a long, winding path along which shoppers flowed, herding customers past as many items as possible, encouraging them to linger in the store, potentially resulting in greater sales. This closed system made it impossible for shoppers to access aisles at random or to limit their visit to a few choice aisles. It was in this part of the plan that the idea of bringing perishable items into the same space as nonperishables was executed. Saunders' plan called for a glass-doored refrigeration unit in which perishables could be stored and displayed, limiting the need for shoppers to acquire those goods elsewhere (Petroski 2005).

The third and final point of the plan called for a storeroom set apart from the sales floor and a gallery of sorts, above the stacked inventory, which would allow for a clerk to observe and monitor activity on the sales floor, including the

need to restock popular items. This was a departure from the old method under which storeowners would wait until after closing time to restock. No longer were sales lost because it was impossible to restock shelves and wait on customers at the same time. Introducing the concept of self-service and limiting customer-employee interaction resulted in lower overhead, which meant that the business could pass the savings on to customers by lowering prices, thereby ensuring a steady stream of customers, victory over competitors, and increased profits (Petroski 2005).

Migration and Urbanization

Most of the changes to retail practice took place on the West Coast, more specifically, Los Angeles, California, beginning in the 1920s and 1930s. The size and shape of groceries stores began to change. Supermarkets demanded more space than their pedestrian-friendly predecessors. Inside the store, there was a departure from narrow aisles and floor to ceiling shelves, making the stock more easily accessible to customers without the aid of a clerk (Longstreth 2000). The first modern supermarket, a King Kullen, was opened on the East Coast, in Jamaica, New York, in 1930 (Jackson 1995). This was the first large-scale market that resembled markets of today, with dedicated parking and affordable prices. The endeavor was so successful that within two years, an additional seven King Kullen markets opened in this region (Jackson 1995).

The proliferation of the modern supermarket follows the same trajectory as automobile ownership, particularly in suburban areas, and is strongly linked to class, as it was in middle-class areas that these markets were established and thrived (Longstreth 2000). When automobiles came into fashion, the drive-in or drive-through market emerged, allowing customers to shop from their car windows. The novelty and convenience of these shops facilitated the survival of certain retailers despite the changes in the retail practices seen during the mid-twentieth century. Skinner Dairy shops flourished across the southeastern United States well into the 1990s, and Dairy Barn stores are still in existence

in the northeastern part of the country (Longstreth 2000). The widespread adoption of automobiles signaled the advent of the shopping strip, whole streets dedicated to retail markets that catered to the driving public, a contrast to stores of old found close to the town square or city center and conveniently located for pedestrian traffic (LeGates and Stout 2011).

Interestingly, the land parcels upon which supermarkets were built were further and further from the once prized city center. The demand for larger stores meant that storeowners needed larger pieces of land upon which to situate them. In a city setting, space was a commodity, but out along the roads that bordered city limits, there was plenty of space to be had, and much of it at a reasonable price (LeGates and Stout 2011). Commercial enterprise, specifically retail outlets like supermarkets, is a contributing factor in the urban sprawl that is now commonplace in semi-suburban and suburban areas (Frumkin 2002).

Competition Leads to Innovation

In the waning economy of the 1970s, competition among supermarket chains was fierce and the strategy had to change once again. Competition among grocery chains led to the emergence of the “jumbo” or “superstore” in the late 1970s, with big-box stores beginning to carry groceries, in addition to housewares, clothing, etc. (Strasser 1982). In an effort to retain existing customers and lure new ones, stores became inventive in their operations. The 24-hour schedule was born and the larger grocery chains began to offer non-grocery services within their stores, such as, banking, postal services, pharmacies, and later video rental (Strasser 1982). The 24-hour schedule cost storeowners little extra in operation costs, since the stores were already staffed at night, albeit with stock workers and the benefit of attracting a new group of customers was profitable enough that the idea caught on. Storeowners began to enter into partnership with outside vendors and lease space in order to stay afloat. The inclusion of these services was intended to capitalize on the convenience of one-stop shopping, much in the same way that superstores had done by bringing the supermarket into

the department store (War in the supermarkets 1972; Strasser 1982).

When the dust settled, after a number of mergers and closures, the retailers left standing embraced innovative thinking, and as technology evolved and computers shrunk in size, computer technology was applied in the marketplace. Point-of-sale systems were implemented in the mid-1980s, making checkout faster and more efficient (Gilchrist et al. 1982). Cashiers were no longer required to do basic math in order to make change and stores could be assured of fewer errors of this sort. These systems have been continuously improved upon over the years progressing to the point where customers could scan their own orders, further reducing staffing costs (Eskin 2005).

The introduction of online grocers to the mix of retailers sparked another round of innovative thinking in the early 2000s. Many brick and mortar grocers have introduced a “clicks and bricks” business model in order to compete (Prasarnphanich and Gillenson 2003). This hybrid model attempts to capitalize on the best of both worlds, the familiarity of the traditional physical store experience and the convenience of the virtual buying experience. Grocers recognized the convenience of online shopping, but also knew that shopping for food is a decidedly tactile experience. It can be difficult to judge the quality of produce or meat in an online setting. These items are likely to bring shoppers into the store; however, nonperishables and non-food items can easily be purchased from an online competitor. In order to retain their base, grocers have adopted online sales in one form or another. The most common configuration allows customers to order items online and have them delivered or stop by the store and pick up the completed order (Prasarnphanich and Gillenson 2003).

Unlike the competition of the 1970s, where grocers competed with one another for business, today, they are competing with farmer’s markets, specialty stores, and stores that feature artisanal goods. In order to remain relevant, grocers have taken to creating the illusion of stores within stores. Lighting, flooring, sampling stations, and service counters are used to distinguish between

departments within the grocery store. As the customer moves from one department to another, they are met with a distinctly different décor, signaling that they have entered a new “store” where specialty or unusual items are carried. The investment pays off in higher profit margins for the successful grocer (Kinsey and Senauer 1996; Nestle 2006).

Basic Principles of Grocery Store Design

Ultimately, it can be argued that there is but one basic principle of grocery store design, product placement. Circulation through the store and conveniently locating companion or complementary products are the mainstays of grocery store design, and these are achieved largely through product placement. As Clarence Saunders demonstrated in his 1916 patent application, circulation is an essential element in promoting sales. Saunders’ approach, in effect holding shoppers hostage and forcing them to pass by every item in the store until they reached the checkout counter, was effective to some extent (Petroski 2005). Modern retailers have built upon this method, achieving the same end by enticing shoppers to travel along a number of predicted paths, where high impulse items have been placed, while allowing shoppers to travel the aisles at will and in any pattern they choose. This is, however, an illusion of freedom because retailers long ago discovered, with the help of marketing experts and social scientists, that consumers could be manipulated into traveling a prescribed pathway. For example, there are certain items, staple items, like milk and bread, that bring shoppers into the store and if placed strategically, promote movement through the store along a few expected routes. Typically, these products are placed furthest from the door, ensuring that customers navigate their way through the store to that area on virtually every trip and ensuring that shoppers must traverse the store, passing numerous items and displays in order to get to their planned destination (Nestle 2006).

Convenience and coordination of complementary items goes hand in hand. Conveniently placing the hamburger buns, condiments, and chips on a display near the prepackaged frozen

hamburgers is not an unusual sight. The promotion of companion items ensures that shoppers receive the message to purchase all of the elements of a meal, along with an impulse buy, in this case, the chips, thus generating additional revenue. In recent years, grocery store operators have increasingly catered to customer convenience by offering “home meal replacements” of the heat and serve variety. Meant to rival take-away and fast food outlets and capture some of the revenue lost to these establishments, stores had to be remodeled in order to accommodate refrigerated display cases that could be located away from those areas that are normally outfitted for perishables, like dairy, meat, and frozen foods. These take-away-style foods are displayed in a way more consistent with a food court than a market (Humphrey 2000; Petroski 2005). Supermarkets wanting to capitalize on special events, holidays, etc., want the flexibility to relocate displays to various parts of the store, so as to encourage companion buying, e.g., heat and eat Buffalo wings are co-located with the carrot, celery, and blue cheese platters and carbonated beverages in a featured space within the store (Caplan 2007; Humphrey 2000).

Every aspect of the shopping experience is filled with behaviors worth studying and great attention is paid to how environment influences shopping behavior. Grocery store interiors are similar, if not identical and are meant to maximize profits by appealing to the consumer’s senses. The perimeter of the store is where the most perishable items are displayed. These are also the products with the greatest profit margins, and it is in the retailers’ best interest to encourage consumers to make purchases in these areas. Placing the produce section just beyond the entrance ensures that shoppers walk into an area that is brightly lit and teeming with vibrant colors. The stimulating sights prime the customer to shop, communicating that the store stocks fresh items. Larger stores will often boast a floral section and a bakery; these too will be situated very close to the entrance of the store. Taken together, the bright colors from the produce and floral sections and the scent of fresh-baked goods are a heady mix Inspiring a wave of

emotion that encourages shoppers to relax and makes them feel more at home (Nestle 2006). The scent of baked goods reinforces these good feelings and stimulates the salivary glands, which has been associated with increased likelihood of spending, particularly on impulse buys. Also highly perishable, meat, poultry, seafood, and sometimes dairy, occupies the back wall of the store, so that these sections are visible to the consumer from the every aisle. Similar to the produce, floral, and bakery sections, retailers encourage spending in these areas by routing shoppers through the area or making it highly visible from anywhere in the store (Schardt 1994).

Product placement is well thought out, even within the aisles. Shelf placement is critical to both retailers and manufacturers. Items that appeal to children, such as cookies, candy, fruit snacks, and sugary cereals, are usually located at their eye level, where they can easily reach for and place the items into the shopping cart. Bulk items and less processed foods are typically located on the highest and lowest shelves, as research shows that those for whom these products would be a priority, the items would be deliberately sought out, requiring less prominent placement (Nestle 2006). Retailers use shelf placement to maximize sales, and manufacturers, who already pay a listing fee or slotting fee to ensure that their products are carried, pay extra to ensure that their items are strategically placed. Slotting fees can cost up to \$25,000 per item, per store and manufacturers may pay several million in listing fees to supermarket chains (Nestle 2006). The aisle ends or “end caps” are prime real estate within the grocery store and manufacturers pay a premium to have their products featured in end cap displays. Contrary to popular belief, the items featured in these displays are oftentimes items that are lagging in sales, rather sale items. Customers often purchase these items mistakenly believing that they have been discounted (Nestle 2006).

From beginning to end, retailers design an environment that promotes spending. The check-out area, the last point of contact and the last opportunity to encourage customer spending, is typically populated with displays of items that are

most regularly bought on impulse, such as magazines, candy, soda, and chips. The placement of these items is intended to tempt shoppers to buy something with which to occupy themselves as they wait to be checked out (Nestle 2006; Warfare in the aisles 2005).

The Psychology of Supermarket Design

Market research has shown that time pressure and the presence of other shoppers in the shopping environment influence the likelihood that consumers will visit a retail outlet, spend time in the store, and make a purchase before leaving. Time pressure is felt as the time a shopper allots for the business of browsing, selecting, and purchasing items is depleted. In the presence of low pressure, there is a direct relationship between the time spent in the store and the likelihood of purchase (Hui et al. 2009). It would seem logical that the inverse would also be true; however, such is not the case. Time pressure can lead shoppers to feel forced to make a purchasing decision rather than allow themselves the option of leaving the store empty-handed. The increase in time pressure might make shoppers more focused in their efforts, however, reducing the likelihood that they would buy anything outside of those items that were planned purchases, thereby minimizing sales potential (Hui et al. 2009).

Shopping is a social activity of sorts. People gather in a common place for a common purpose and are often influenced by each other’s behavior. The presence of other shoppers in a store or within a specific area of the store may signal to consumers that this is a preferred location or that the products attracting attention are sought after. Retailers must maintain a delicate balance, as this social influence can be a double-edged sword. The presence of other shoppers may attract more customers and encourage spending; however, there is a tipping point. Crowding has been shown to decrease willingness to visit a store and the intention to purchase, as well as actual purchasing (Hui et al. 2009).

What Is Old Is New Again

Supermarket renovation and redesign takes place, on average, every 7–8 years. It is very

important for these stores to keep up with changes in the industry in order to remain competitive (Humphrey 2000). Clarence Saunders, shortly before his death in the mid-1950s, filed a patent for the precursor to the self-checkout lanes that are commonly found in supermarkets and big-box stores today. Saunders' Keedoozle was a key punch-based system that allowed shoppers to select items which were then carried by conveyor belt to the checkout and tallied up. Saunders sought to automate grocery shopping and further reduce retailers' overhead by reducing staffing costs such that only one staff person would be required to oversee a number of checkout lines. Building upon Saunders' innovations, modern retailers have moved beyond the self-checkout to the electronic shopping trolley and interactive technology in the aisles (Petroski 2005).

Patents filed for the electronic shopping trolley are among the newer developments in grocery store design. The various patents describe variations of a shopping cart that stores consumer information and promotes an interactive relationship between the receptacle and the shopper and builds upon the basic principles of grocery store design, alerting shoppers to items they may have missed or those that complement something already in their cart. Several of the plans describe a shopping cart that can recall prior shopping trips and direct shoppers to another area of the store, where items they regularly purchase are located (Kenney 2000; Jacobi et al. 2001; Blaeuer 2002; Petroski 2005). Scanner technology has also moved away from the checkout lane into the aisles. In a process similar to that used in wedding and shower registry, retailers have been experimenting with furthering the self-service concept by equipping shoppers with handheld scanners, allowing them to keep a running tally of their order, bag it themselves, and, aside from the final, singular scan at a checkout station, have almost no interaction with store employees. Tied into kiosks in key locations throughout the store, the handheld devices allow customers to learn about a particular item or get assistance in planning a meal and even determine the best wine to accompany the meal (Eskin 2005). In keeping

with previous efforts to keep customers in-house for as many services as possible, the scanners are tied into non-grocery services like the pharmacy, allowing the shopper to be notified of a filled prescription dropped off at the beginning of their visit (Eskin 2005).

Some innovations are quite literally looking outside of the box. Civil engineering and history researcher Henry Petroski, in his discussion of supermarket design, proposes a design that rejects the traditional rectangular configuration of nearly all retail outlets in favor of a circular design (Petroski 2005). Petroski posits that a radial design maximizes shopper convenience by allowing access from any aisle to any other aisle, simply by transecting the store's core. Additionally, he suggests that placing a checkout lane at the end of every aisle would be appealing to shoppers, as they could check out from wherever in the store their shopping has taken them. He further suggests that the entire edifice could be placed on a sort of turntable, allowing it to rotate such that shoppers could wait until they reached a point close enough to their vehicle that would make exiting the building most convenient, particularly in inclement weather. Petroski filed a patent for his radial store system in 2004, but it has yet to be implemented by a retail outlet (Petroski 2005).

Ethical Questions and Dilemmas

Advances in technology have led to a reduction in brick and mortar stores and consequently a decline in the employment opportunities in the field, from entry level to management. Retailers are continually seeking ways in which to minimize overhead and increase profit. Technology has made it possible to reduce contact with store staff to a bare minimum. The advent of self-checkouts and online purchasing options further reduces opportunities for employment in this setting. The number of jobs lost in this industry over the last 20 years is staggering. Employment opportunities will continue to diminish as technology advances further with the implementation of interactive shopping carts eliminating or reducing the need for personal customer assistance. What may be beneficial to the retailer's

bottom line may not be beneficial to the American economy. How do retailers ensure that they are maximizing profits without eliminating employment opportunities, especially for youth and the working poor, populations most often found in these settings? Additionally, information kiosks and interactive shopping carts might be useful in promoting the sale of complementary items, increasing profits, but will these innovations also contribute to the growing obesity problem that is front and center of American health today? Retailers may have the opportunity to play a role in the implementation of interventions that support shopping for healthy food items, but it is unlikely that the promotion of produce and whole foods will yield the same opportunities for revenue as processed food that have been linked with increasing rates of overweight and obesity.

Summary

Technology may add bells and whistles to the American shopping experience, but in the end the same issues remain, efficiency and profit. Every innovation, every development in retail is designed to bring customers into the store, encourage them to view as many items as possible, and convince them to spend as much as possible.

Cross-References

► [Obesity and Consumer Choice](#)

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Gustatory Pleasure and Food

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Synonyms

Consumption; Ethics; Food; Gluttony; Happiness; Morality; Pleasure; Taste

Introduction

Eating food is necessary for our survival, but unlike various other things we need to do to survive – sleeping and breathing – eating can provide great pleasure. Maybe alone among the activities we need to do to survive, eating can bring us great joy.

Which ethical concerns does gustatory pleasure raise? There are the normal questions about pleasure: Is it a *good*? An *intrinsic* good? The *only* intrinsic good? *Ought* it be maximized? Are there any ethical concerns raised peculiarly by gustatory pleasure? Are there any ethical concerns especially well raised by gustatory pleasure?

This is hard to say. In our everyday lives, food is complicated because it functions at so many levels of experience, or as philosopher David Kaplan argues, “food is vexing.” In fact, Kaplan (2012) argues that the difficulty of analytically containing food explains a general philosophical neglect: “the subject quickly becomes tied up in countless empirical and practical matters that frustrate attempts to think about its essential properties (Kaplan 2012, p. 2).” This entry surveys some ethical concerns about gustatory pleasure and some responses and also some hypotheses about why these concerns aren’t more often discussed. Some of the topics we will consider include gluttony, aesthetics, puritanism, purity and pollution, and, to start, the relative lack of discussion of the ethics of pleasure.

Why So Little Discussion of the Ethics of Gustatory Pleasure? Several Hypotheses

Why isn’t there more literature about the ethics of gustatory pleasure?

Hypothesis #1. *Eating is outside the realm of ethics since eating is a necessity. Hence, the pleasure derived from eating is outside that realm. It’s like breathing: No one thinks breathing raises any interesting ethical questions. No one thinks pleasure from breathing raises ethical*

questions. Likewise with any normal bodily function, they can’t be helped and, hence, are morally uninteresting.

Francine Prose writes,

Unlike the other deadly sins, lust and gluttony are allied with behaviors required for the survival of the individual and the species. One has to eat in order to live; presumably, the race would die out if lust were never permitted to work its magic. (Prose, p. 8)

Furthermore, one gets the impression from Prose’s book that our need to eat makes the topic of the ethics of eating uninteresting. Yet if that is Prose’s view, it is mistaken. Eating is a necessity for staying alive, but the choices we make aren’t necessary. We can pick the Whopper or the whale, the figs or the fudge. We can try to eat the yummiest foods we can or, as Prose alleges St. Francis did, go out of our way to make those foods disgusting: “According to an early biography of Francis of Assisi, the saint used ashes as a spice with which he sprinkled food in order to destroy any hint of taste (Prose 2003, p. 28).” The pleasure we get from our Whopper is not a necessity. It might be that it raises no interesting ethical issues, but, if so, that isn’t because it is something that can’t be helped.

Hypothesis #2. *Pleasure comes from taste and philosophers have given taste scant attention.*

As philosopher Carolyn Korsmeyer points out, in the Western intellectual tradition, taste has been given short shrift, especially compared to the attention paid to the power of sight and sound. In this philosophical tradition, these two senses are deemed superior, “labeled the ‘cognitive’ or ‘intellectual’ senses – or in short, the ‘higher’ senses (Korsmeyer 1999, pp. 2–4).” According to Korsmeyer, the necessity of a total bodily engagement in order to taste food (or drink for that matter) is what makes this sense problematic for philosophers. Such sensual reality has made it difficult for Western philosophers to relate food to moral action, unless as an example of actions (e.g., eating and drinking) that must be *controlled* in order to achieve a moral state.

As a sociological explanation of why there isn’t much on the ethics of gustatory pleasure, this might well be compelling. But absent some

grounds for thinking taste is philosophically uninteresting, it shouldn't bar us from giving taste its due. Is the ethics of the topic of gustatory pleasure a topic worth discussing?

Hypothesis #3. *Gustatory pleasure is too sensuous to be a proper subject of philosophical inquiry.*

In a way, hypothesis #3 might provide a negative answer to the question above and an answer to the question of why philosophers haven't been particularly interested in gustatory pleasure. Inquiries into the sense of taste and aesthetics have been more philosophically fruitful, but the seeming subjectivity of the gustatory taste experience has also made the topic difficult for philosophers to engage with fully. As Korsmeyer explains, "There is thus an abiding tension in aesthetic theories between the idea of taste as a sense pleasure and taste as discriminative capability: fine discernment is accomplished by means of the pleasure, yet the pleasure itself is too sensuous to count as aesthetic (Korsmeyer 1999, p. 6)." "Taste" and "tastefulness" as aesthetic concepts have primarily resided outside of bodily tastes or mediated bodily tastes through higher order aspirations. Thus gustatory pleasure and aesthetic pleasure have not been consistently linked. The problem of the body in the attainment and explanation of the aesthetic ideal haunts Western philosophy; it is no surprise, therefore, that gustatory taste suffers from philosophical neglect.

The problem of the body raises a number of issues that are also explored in *Pleasure Principle* in Food and Taste, Distaste, and Food.

Hypothesis #4. *Pleasure is a bodily sensation and philosophers of a certain ilk – and there are numerous such philosophers – have given bodily pleasures scant attention.*

Hypothesis 3 can be developed in more detail as hypothesis 4. Korsmeyer writes, "The physical necessity of eating is one of several factors that traditionally sidelined taste and food from philosophical attention in the Western tradition as eating was often dismissed as a matter of the animal 'body' rather than the uniquely human

'mind (Korsmeyer 1999, p. 90).'" For some of the philosophers in question, the body is akin to a vehicle that our immaterial souls use to make their way around the world. If this metaphysics of persons is right, attending to bodily pleasure is a bit like attending to the well-being of one's car or bike. It's not that it's unimportant – it's very important for getting around – but, rather, it's not the sort of thing you write a philosophical book about. Moreover, so far as the concern with one's body is just to keep it in shape to ferry the mind around, one needn't eat *yummy* food to do so. One could eat a diet of bland, empty calories and multivitamins. (On the history of philosophers doing something like this, see Stuart (2006).) For others of the philosophers in question, bodily pleasures just aren't as important as intellectual ones. Separating the higher pleasures from the lower, John Stuart Mill (2002) lumps a "beast's pleasures" in with the lower and says that "a beast's pleasures do not satisfy a human being's conception of happiness." Presumably, gustatory pleasure is among the beast's pleasures. Certainly a pig enjoys its food, and, yet, Mill claims, "it is better to be a human being dissatisfied than a pig satisfied."

As sociology, this hypothesis is quite plausible. As a justification of why little should be written about the ethics of gustatory pleasure, it leaves quite a bit to be desired.

The first defense of the hypothesis – the appeal to the thesis that the body is basically a vehicle – depends on an extremely contentious metaphysics, one not nearly as widely endorsed in the West as in the past. Section "[The Ethics of Gustatory Pleasure: Case Studies from the Past](#)" below returns to it. The second defense – the appeal to different kinds of pleasure – grossly underestimates the pleasure of eating bacon and overestimates the pleasure of reading, say, John Stuart Mill.

Hypothesis #5. *There is nothing special about gustatory pleasure. Just as pleasure from a massage or from sniffing flowers has garnered little attention because it is entirely unexceptional, so has pleasure from food garnered little attention.*

Perhaps this is the most plausible hypothesis. Yet it is not fully satisfying. As Korsmeyer rightly points out that gustatory pleasure is generated by food by simultaneously engaging numerous senses, making eating and tasting food as a pleasurable experience is intrinsically more complex than massages or flowers.

Also, eating and tasting food are a much bigger part of our life than massages and flowers. In fact, it is quite unlike the vast majority of pleasures in this way. Breathing can be pleasurable, but it's a pretty boring pleasure. Sleeping is not pleasurable (though lying in bed is). Sex isn't necessary. Being with other people isn't. Such acts might be necessary to having a good life, but, unlike food, they aren't necessary to having a life at all: celibate hermits are possible. Maybe these differences between eating and, say, sniffing flowers show that there is something special about gustatory pleasures.

So there is a lack of writing on the ethics of food, and the hypotheses for why there is this lack aren't entirely compelling justifications for why this *ought* to be the case. However, gustatory pleasure does get discussed in an ethical context from time to time, usually in the course of discussing gluttony and discussing the permissibility of killing animals for food and of gluttony.

Billions of animals are killed each year so that we can eat them. Before they are killed, they live lives containing an impressive amount of suffering. When it is permissible to kill or hurt things, there typically is some justification for this. What justifies our killing and inflicting suffering on animals? That death and suffering is nothing to them? That we need to do so to survive? Neither is very promising. It's striking that we raise and kill animals we enjoy eating. What role does our enjoying eating, say, cattle, play in justifying our hurting and killing cows? Is it *sufficient* justification? Or a case of giving our palate too much importance? For more on these questions, see *The Good Life for Animals*, *Animal Welfare*, and *Meat: Ethical Considerations*.

We will focus instead on gluttony. There are three main conceptions of gluttony, only two of which are tied to pleasure – those are the ones on which we focus. One conception, the one with

which we won't be concerned, is that gluttony is overeating. It's simply stuffing oneself.

Another idea is that gluttony is overeating *that is motivated by the desire for pleasure*. So only some instances of overeating are gluttony. This is voiced by St. Thomas Aquinas when he writes,

The vice of gluttony does not regard the substance of food, but in the desire thereof not being regulated by reason. Wherefore if a man exceed in quantity of food, not from desire of food, but through deeming it necessary to him, this pertains, not to gluttony, but to some kind of inexperience. It is a case of gluttony only when a man knowingly exceeds the measure in eating, *from a desire for the pleasures of the palate* (emphasis added). (Aquinas 1964)

A third – slightly odd to contemporary ears maybe – conception of gluttony is that it is a desire for gustatory pleasure that is somehow out of whack. For example, you might desire to eat nothing but Oreos. Or you might desire meat only if served perfectly. On this conception of gluttony, overeating is no part of gluttony. In *The Screwtape Letters*, Screwtape focuses on “gluttony of Delicacy” rather than “gluttony of Excess.” The delicate glutton’s “belly...dominates her whole life” though she does not eat much (Lewis 2003, pp. 328–329). But, as with the second conception, the desire for gustatory pleasure is crucial to the sin. What is producing these out-of-whack desires is a desire for pleasure.

That gluttony – the desire for gustatory pleasure, in particular – is sinful, that is, that it is a certain sort of moral wrong, stems from three different concerns.

First, it encourages eating and then overeating and, in doing so, diverts the eater's attention away from what's important (being a good citizen, loving God) and toward food, something not important. On this, Augustine writes,

Although the purpose of eating and drinking is to preserve health, in its train there follows an ominous kind of enjoyment, which often tries to outstrip it, so that it is really for the sake of pleasure that I do what I claim to do and mean to do for the sake of my health. (Augustine 1961, p. 235)

And Aquinas writes,

The vice of gluttony becomes a mortal sin by turning man away from his last end: and

accordingly, by a kind of reduction, it is opposed to the precept of hallowing the sabbath, which commands us to rest in our last end. For mortal sins are not all directly opposed to the precepts of the Decalogue, but only those which contain injustice: because the precepts of the Decalogue pertain specially to justice and its parts, as stated above. (Q[122], A[1])

The view in both passages seems to be that the pleasure we get from food turns our attention away from the fact that food is merely a tool to keep our body in good health so that we can pursue whatever it is we should be pursuing and turns our attention toward the food itself, so that we try to get ever more pleasure out of it.

When Paul complains that, for some, their god is their belly or appetite (Phil. 3: 19), it is hard to believe that gustatory pleasure isn't a large part of what is to blame. It is hard to believe God would be a belly if eating weren't so fun. For no one is God a root canal.

Besides turning us away from what should be our focus, gustatory pleasure is suspect because it is a sign of bad character. The rich man who feasts in front of Lazarus flaunts his eating (Luke 16: 19–21). Generally, some hold that enjoying one's food is an expression of gloating or meanness. William Ian Miller argues that any well-off person these days is in the rich man's boat: "[The rich man] ate...in the face of Lazarus. . . . We, on the other hand, must exercise a bit of imagination to see the starving as we eat (Miller 1997, p. 100)." Nevertheless, he thinks the starving are there and we indulge in the face of their starvation. To enjoy this food is to show off our bad character. For more see *Ethics and Food Taste and Gluttony*.

The pleasure we take might also be a sign to us of our own weakness. We continue to enjoy food even past the point at which we know it is good for us. Having a third helping of dessert, we continue to enjoy what we know is harmful to us.

Finally, the pleasure we get out of eating leads, some think, to significantly worse things than eating and overeating. Augustine claims, "the snare of concupiscence awaits me in the very process of passing from the discomfort of hunger to the contentment that comes when it is

satisfied" (Augustine 1961, p. 235). And he writes, "The Israelites in the desert deserved rebuke, not because they wanted meat, but because in their greed for food they sulked and grumbled against the Lord" (Augustine 1961, p. 237). C. S. Lewis's *Screwtape* claims, "[Mere excess in food's] chief use is as a kind of artillery preparation for attacks on chastity (2003, p. 330)."

And the rich man in the parable of Lazarus is led by the pleasure he gets in eating to commit a crime of negligence toward Lazarus. (If the food were foul, he'd have been more likely to give some to Lazarus.) Expanding on this, Miller writes, "For that earlier economic order [eating too much – which is motivated by the pleasure of doing so –] was, in a sense, murder or a kind of criminal negligence, like drunk driving is for us (1997, p. 97)."

The Ethics of Gustatory Pleasure: Case Studies from the Past

Tea Ceremony

So the neglect of gustatory pleasure in the Western philosophical tradition is clear, in part due to the sense that yummy food does not create ethical human beings. There are cases, however, in which to engage in gustatory pleasure is understood to help attain ethical or moral virtue. And there are cases in which a consequence of pursuing moral and virtuous acts is the ability to pursue forms of gustatory pleasure. Examples of the first type of case can be found in Asian religious tradition, where the body and soul are not seen as disassociated as in the Western Christian tradition. In the religious traditions of Confucianism, Buddhism, and Taoism, it was considered that, "by disciplining the movements and postures of the body through ritual practice, one could refine the faculties of the whole human being (Parkes 1995, p. 82)." The moral and aesthetic self are displayed through particular bodily practices and rituals. The tea ceremony is one example. The ceremony involves a number of exact and exacting gestures made by both the host and guests: the size and look of the room,

the type of teacups and teapots, and the rituals of making, pouring, and drinking the tea. In a striking comparison to the Western discomfort with the body as a locus of virtue, in Japan “the practice is understood to be integral to cultivating and refining one’s essential humanity (Parkes 1995, pp. 92–93).” The entire tea ceremony focuses on aesthetic pleasures – “a time when the wind blows” – and savoring the freshly brewed tea is especially important. For more see Buddhism and Food.

Hindus

In Hindu South Asia, “good” food integrates concepts of morality and aesthetics: pleasurable food must combine moral precepts, social relations, and sensory qualities. For Hindus, the good food you prepare marks your moral standing. This involves what you use as ingredients (your respect of the environment), those with whom you share your food (your similarity and difference with others), and your gifts of food (to people and to gods). For example, food offerings have long been a gift to the gods, an important component of religious ritual, both in people’s domestic shrines and at the large pilgrimage sites or temples for the gods. Offerings of sacred food, or *Prasad*, are particularly powerful for in Hinduism “food is an inherently moral substance (Toomey 1986, pp. 55–56).” In a continuing practice through today, Hindu pilgrims offer *Prasad* to the deity and eat the leftovers; among devotees of Krishna, this food offers moral enhancement and gustatory enjoyment. For more see Hinduism and Food.

Land of Cockaigne

And then there is the notion that moral virtue will be rewarded with gustatory pleasure. This is exemplified in the medieval period in Europe. In medieval Europe, tales of the Land of Cockaigne were extremely popular, an important oral and written story that created a fantasy of a place somewhere on earth that always involved two promises: “Work was forbidden, for one thing, and food and drink appeared spontaneously in the form of grilled fish, roast geese and rivers of wine (Pleij 2003, p. 3).” This was a paradise on earth

that transformed the sufferings of everyday life into an endless sea of pleasures, and the basic need for food becomes a desire constantly fulfilled. One version of the tale includes this description: By anyone old, young, weak, or strong./There no one suffers shortages;/The walls are made of sausages./Windows and doors, though it may seem odd,/Are made of salmon, sturgeon, and cod./The tabletops are pancakes. Do not jeer,/For the jugs themselves are made of beer (Pleij 2003, p. 33). This world was not only worry-free but also allowed for pleasures without the requirements of virtuous actions expected by the Catholic Church. The Land of Cockaigne resolves the long-standing question of whether gustatory pleasure somehow transgresses or undermines virtue by making it easy to both have food and enjoy the taste of it. Interestingly, Marion Rombauer Becker, coauthor of *The Joy of Cooking* (with her mother Irma Rombauer), named her country home “Cockaigne” and subsequently her favorite recipes followed suit, e.g., Brownies Cockaigne and Fruit Cake Cockaigne.

Brillat-Savarin

By the 1800s, the dialogue about necessity and pleasure in Europe had expanded beyond the confines of religious virtue and incorporated Enlightenment principles of rationality and individuality. Jean Anthelme Brillat-Savarin’s work *The Physiology of Taste* was first published in 1825 and has been continuously in print ever since (including multiple editions in English). Brillat-Savarin was a philosopher of the French Revolution who argued that the pleasures of the table were now available to all social classes, another example of the benefits of democracy. For him, the pursuit of gustatory pleasure was a hallmark of any civilized person, a democratic principle. In one of his famous aphorisms that begin his book, Brillat-Savarin claims that “The Creator, though condemning man to eat to live, invites him to do so by appetite, and rewards him by enjoyment (Brillat-Savarin 1970, xxxiii).” He names such a pursuit of enjoyment “gastronomy” and argues that if foods (and drink) are defined by their simultaneous ability to provide pleasure,

nourishment, and virtue, civilized gastronomes rather than barbarous gluttons can be cultivated: “Gastronomy considers taste in its pleasures as well as in its pains. It has discovered the gradual degrees of excitation of which it is susceptible; it has rendered their action more regular, and laid down limits that a man who respects himself should never overstep (Brillat-Savarin 1970, p. 27).” In the modern period, Brillat-Savarin’s new interpretation of gustatory pleasure as gastronomy rather than gluttony (gourmandise) has become more prevalent. For more see Brillat-Savarin and Food.

The Ethics of Gustatory Pleasure: Case Studies from the Present

In a recent essay, *Ethical Gourmandism*, Korsmeyer explicitly addresses the tension between ethics and pleasure when considering “tasty morsels.” Borrowing on works of “ethical criticism” in evaluation of art, Korsmeyer asks, “is the very taste of the food we eat imbued not only with flavor but with moral valence? (Korsmeyer 2011, p. 89).” Focusing on taste sensation, she uses recent research in psychology to point out that taste sensations are never solely bodily experiences but are always mediated by moral and other concerns. She disagrees with Kent Bach’s argument that a pleasurable taste experience can occur distinctly from knowledge of what the food is, where it is from, or how it is produced, writing, “my inclination is to believe that such separation is not only difficult but impossible (Korsmeyer 2011, p. 97; Bach 2007).” That is, one’s *judgment about the ethics and aesthetics of what one eats modifies* the pleasures one gets from that food. Bach’s position is that this is not so.

Korsmeyer’s *dialectic* between the virtues of a food or drink and the pleasure derived from consuming that food or drink illuminates recent interventions into the modern industrial food system. The argument for virtuousness is often paired with discussions of the yumminess of foods due to the moral means of production, manufacture, distribution, etc. (For more see

Jefferson’s Moral Agrarianism and Eating and Environmental Sustainability.) Part of the locavore ideology is that knowledge of where one’s food comes from increases how much one enjoys it. Knowledge comes from details about the aims of how the food should be made and the process by which that occurs: organic, local, artisan, fair trade, healthy, and sustainable are all concepts addressing this need to know. There are also particular types of foods labeled as good or virtuous: whole fruits and vegetables and grass-fed meat are examples. In the movement for changing the contemporary food system, this righteous insistence tends to revolve around a dichotomy between “good” and “bad” foods (Heldke 2011).

Thus, though it is tempting to see the new dialectic between the ethics and aesthetics of food and drink as a possible resolution to the long-term philosophical neglect of gustatory pleasure, pitfalls remain. Political philosopher Wendy Brown, in an analysis of the changing shape of political movements since the 1970s, makes a distinction between morality (“ethical wisdom”) and moralism, arguing that moralism tends to adopt a “righteous insistence on knowing what is True, Valuable, or Important” (Brown 2001). A strong current of moralism exists in the food movement.

Part of the ideology of proponents of free-range farming is that food that is morally impeccable is also the yummiest. Dan Barber and Michael Pollan both argue that there is no need to choose between ethics and taste. (This functions as a response to the common claim that vegans must not like food very much: what’s implicit in that common claim is that what the vegans think is ethical is not particularly delicious.)

Barber and Pollan might be right. Their being right would depend, of course, on what’s delicious and what’s morally unimprovable. A different line was taken by Thomas Keller and Andoni Luis Aduriz. In a 2012 *New York Times* article, Julia Moskin writes,

Keller and Aduriz are united in the belief that their responsibility as chefs is primarily to create breathtakingly delicious and beautiful food — not, as

some of their colleagues think, to provide a livelihood for farmers near their restaurants, to preserve traditional culinary arts or to stop the spread of global warming. . . .

When it comes to supporting communities, [Keller] said, he chooses to support Stonington, Me., by buying exquisite oysters from a seafood dealer there. There are oysters on Long Island, of course, but Mr. Keller believes that his priority has to be taste, above all other considerations like sustainability, seasonality and food miles.

"Is global food policy truly our responsibility, or in our control?" he asked. "I don't think so (Moskin 2012)."

Basically, their job is to produce what is delicious, ethics be damned. Their view seems to be closer to Bach's than Korsmeyer's and to be indifferent to whether Barber and Pollan are right. Keller's query as to the responsibilities of a high-end chef introduces the emerging problem of this particular dialectic between ethics and aesthetics. The "ethical" person who also gets to eat "yummy" food is first and foremost a *consumer*. These ethical acts are really economic purchases that happen to also provide calories to nourish our bodies. The modern dilemma about food is no longer the mind/body dualism, but the consumer/producer paradox. Wendell Berry calls it "industrial eating." For Wendell Berry, the industrial eater is an alienated consumer who no longer takes the time to even really savor his food, let alone have an engaged relationship with the virtues of certain types of food production. For more see Jefferson's Moral Agrarianism.

Summary

This entry has focused on the ethics of gustatory pleasure. Pleasure plays another role in food ethics. It was because animals are capable of pleasure – and also capable of pain – that utilitarians like Bentham and Mill argued that they should, as a rule, not be made to live nasty lives.

Although the continuing conflicts between food, pleasure, and ethics may or may not bode well for a clearly elaborated argument as to the

ethics of gustatory pleasure, clearly more and more people, scholars included, are finally engaging with an ethics of pleasure that does incorporate the sensual elements of taste.

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H

Hazon

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History

Hazon, the Hebrew word for “vision,” is North America’s leading Jewish food group. The vision of Hazon is to create healthy and sustainable Jewish communities. Hazon is trans-Jewish, so that members of the organization cover the entirety of modern Judaism: Orthodox, Conservative, Reform, Renewal, Reconstruction, Jews who identify as agnostic or atheist, and/or those who are culturally Jewish. Hazon is also open to non-Jews, although most members tend to identify with some form of Judaism.

Nigel Savage began Hazon in 1999 (year 5759 in the Jewish calendar). Savage is a British Jew who studied in the United Kingdom, Israel, and the USA and who relocated to New York. His original vision was to create an inclusive Jewish movement capable of responding to the emerging demands of living in an industrial society that he believed to be harmful to physical bodies, spiritual well-being, and the environment. In 2000 Savage organized a Cross-USA Jewish Environmental Bike Ride, which became Hazon’s first public activity. Upon completion of this successful ride, Savage reflected upon his own

upbringing and identity as a Jew and became inspired to generate a movement within Judaism that was able to speak to contemporary environmental and food issues based on Jewish tradition and history but that was also inclusive and nondogmatic. The organization and completion of this bike ride is the beginning of Hazon, while environment-themed bike rides in Israel and the USA still remain one of Hazon’s main activities. From this bike ride onwards, Hazon has been active in reimagining Judaism by reinterpreting its ancient teachings and rituals in order to make them, and therefore contemporary Judaism, relevant to a world undergoing myriad interconnected social and environmental problems. Hazon’s leadership designates some of these problems to include climate change, the perceived ills of industrial agriculture, obesity, and perceived disparities in wealth and health at national and international levels.

Major Activities

The goals of the organization are to generate community change geared towards religious, social, and environmental sustainability. They attempt to create this change through facilitating transformative experiences at workshops and conferences and by creating and supplying educational materials to a variety of contemporary Jewish organizations and interested individuals. They also work on these goals by actively advocating for sustainability and healthier lifestyles

within North American (Jacobs 2002; Seidenberg 2005) and Israeli Judaism, often through conferences, writings, and lectures. The last area in which they work towards generating and enacting a vision of a healthier, more sustainable Judaism is through capacity building, where they actively network with and support, through grants and other funding opportunities, other Jewish groups in North America and Israel who are working on sustainable agriculture and other sustainability and environmental initiatives.

Besides organizing bike rides in the USA and Israel, Hazon is active in generating a sustainable food movement for and run by Jews, based on Jewish teachings and history. This is done in a variety of ways, including hosting an annual national food conference, typically in California or in the Northeast, with regional food-themed meetings also occurring throughout the year. These conferences are attended by Jews from all over North America, from every variety of Judaism. The themes of and workshops at the food conferences are to generate and embody a progressive, holistic, sustainable food culture based on a mix of Jewish rituals, customs, and teachings, coupled with insights from sustainable agriculture and ecological agrarianism.

Hazon also oversees the Jewish Food Education Network, which is an attempt to understand what kosher (translated as “fit,” “proper,” or “ritually pure”) means for Jews who receive many of their food items from the modern industrial food system (Fishkoff 2010). Through this network, Hazon distributes food-based curricula, source books (Savage and Stevenson 2009), and program ideas and activities. The Jewish Food Education Network also organizes online trainings and webinars that help Jewish community centers, synagogues/temples, and day schools incorporate sustainable food teachings and practices into their curricula and cafeterias.

Another sustainable food program that Hazon organizes and began in 2004 is their community-supported agriculture (CSA) program. This program links interested Jewish temples and synagogues and day schools with local CSA farms, where the produce is typically distributed at the local Jewish institutional building. By 2013, the

CSA program had grown from 1 to over 50 partnerships between farms and Jewish communities in the USA, Israel, and Canada. Many of these partnerships include efforts to share produce from the farms with local food shelters, with the goal being to minimize food waste in urban areas.

Other food-related activities sponsored by Hazon include campaigning for a more comprehensive, sustainable US Farm Bill, where they encourage members to contact their representatives and visit Washington, DC, to lobby on this issue. Lastly, through their partnerships with Adamah Farm, Urban Adamah, and Isabella Freedman, Hazon sponsors and encourages the development of the next generation of Jewish sustainable farmers. These farmers are often invited to share their experiences at Hazon’s national food conferences.

Landmark Contributions

Savage’s personal experience led to Hazon adopting a theory of change, which reads, “We start with the belief that engaging Jews in environmental education, action, and advocacy changes them, their families, their institutions, and the community as a whole” (www.hazon.org, 2013). As an organization Hazon facilitates such engagement through the myriad partnerships they have created, events they sponsor, and their organizational structure. Hazon is overseen by a Board of Directors and an Advisory Board. They also have a Rabbinical Advisory Board. Their key partners include the Adamah, a North American Jewish farming center where young Jews learn organic farming practices (Immergut 2008); the Arava Institute for Environmental Studies, the leading environmental school in the Middle East; the Eden Village Camp, a North American Jewish summer camp themed on sustainability; a popular blog called “The Jew and the Carrot”; the North American Heschel Center for Environmental Learning and Leadership; the North American Teva Learning Alliance; and the Urban Adamah, an urban training center outside of San Francisco, California, where young Jews learn sustainable urban

agriculture. Hazon also supports over one hundred Jewish organizations working on sustainability-themed programs by supplying these organizations with a variety of grants. In late 2012, Hazon officially merged with the Isabella Freedman retreat center, with the goal of increasing the scale of impact Hazon has in reaching and changing North American Judaism.

Hazon is motivated to advocate for a modern vision of Jewish sustainable food habits and practices because of their understanding of Jewish history, traditions, and teachings. These include a traditional Jewish concern with social justice, upon which Hazon advocates for food justice issues in regard to food production and distribution; the Jewish mandate to do no harm/do not destroy (*bal taschit*) (Schwartz 2001); a call to redefine kosher, so that kosher requirements include animal and farm worker welfare; recreating traditional food rituals and holidays so these begin to include sustainable agriculture products; and reinterpreting Torah and the Talmudic tradition from the perspective of contemporary sustainable agriculture concerns.

This reinterpretation, renewal, and recreation of Judaism based upon modern-day concerns about environmental and sustainability issues (Tirosh-Samuelson 2006) reflect the larger ecological reformation occurring within world religions, where many traditions are undertaking an ecohermeneutics of their teachings and practices (Tucker 2003). Hazon's specific focus on sustainable food issues, with concerns about justice, health, and the environment, is also emblematic of the recent emergence of religious agrarianism within some subtraditions within world religions (LeVasseur 2012). Hazon's rapid growth and active partnerships, coupled with the brittleness of the modern industrial agrifood system, suggest that Hazon will remain a leading voice in Israeli and North American Jewish food circles.

Cross-References

- [Ancestral Cuisine and Cooking Rituals](#)
- [Community-Supported Agriculture](#)
- [Environmental Justice and Food](#)

- [Ethnicity, Ethnic Identity, and Food](#)
- [Food Rituals](#)
- [Judaism and Food](#)
- [Urban Agriculture](#)

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Herbicide-Resistant Crops

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Synonyms

Genetically modified; Herbicides; Resistance;
Tillage; Transgenic; Weeds

Introduction

Herbicide-resistant (HR) crops have been genetically modified (GM) so that they are not damaged by applications of certain herbicides. Because herbicides are designed to kill plants, they can cause injury to conventional crop varieties. This limits when and how herbicides can be applied, making them less effective. Because many herbicides are effective against only certain types of plants, growers face the complexity of choosing among several chemicals for different weeds. Crops resistant to broad-spectrum herbicides overcome these problems by reducing crop injury and allowing applications of a single herbicide for most (or all) chemical weed control (NRC 2010). Mechanical and hand tillage to control weeds has become more costly as labor and fuel costs have risen relative to herbicide costs (Osteen and Fernandez-Cornejo 2013). There are additional environmental problems with tillage, especially on highly erodible land. Erosion can reduce the long-term productivity of soils and profitability of farming. Sediment from erosion can also reach water bodies contributing to various environmental problems (Fernandez-Cornejo and Caswell 2006).

HR Crop Adoption

Genetically modified HR crops first became available in the mid-1990s. GM HR crop varieties have been developed for a number of crops but require national regulatory approval before they can be commercially planted. Varieties of HR alfalfa, canola, cotton, maize, soybeans, and sugar beets have been commercially planted in a number of countries. In countries where they have been approved, HR varieties have been extensively adopted, with acreage often exceeding that for non-GM varieties. HR cotton and soybean varieties now account for the majority of global acreage of these crops (Frisvold and Reeves 2010). Most HR crop acreage is planted to glyphosate-resistant (GR) varieties. Because the herbicide glyphosate controls more than 300 weed species, growers can control many

broadleaf and grass weeds effectively using one herbicide instead of many different ones.

Adoption of HR crops has been rapid despite mixed evidence that they increase farm profits (Bonny 2011; Fernandez-Cornejo and Caswell 2006; Marra et al. 2002; NRC 2010). Researchers have suggested that HR crops provide benefits difficult to capture using standard farm profit estimates such as simplification of weed management decisions, convenience, increased flexibility in timing, reduced crop damage, lower environmental risk, lower management time requirements, and compatibility with conservation tillage. These hard-to-measure benefits may account for rapid HR crop adoption (Bonny 2011; Fernandez-Cornejo and Caswell 2006; Frisvold and Reeves 2010; Marra et al. 2002; NRC 2010, 2012). Weed resistance to herbicides other than glyphosate may also account for the popularity of GR varieties.

GR crops have been credited with two types of environmental benefits: encouraging adoption of conservation tillage and substitution to herbicides with lower toxicity and persistence in the environment (Fernandez-Cornejo and Caswell 2006; Green 2012; Kleter et al. 2007; NRC 2010, 2012; Norsworthy et al. 2012; Price et al. 2011). The empirical support for the complementarities between GR crops and conservation tillage is stronger than for herbicide substitution. Because conservation tillage reduces the number of machine passages over the field, it reduces fuel use. It thus contributes to soil carbon sequestration and reduced carbon emissions from fuel use. Conservation tillage can reduce sediment and chemical runoff, reducing water pollution. The US National Academy of Sciences reports, however, that further research is needed to measure and document contributions of HR crops to area-wide improvements in water quality (NRC 2010).

While HR crops have also been credited with reducing environmental risks of herbicide applications, attributing changes in environmental risks to HR crop adoption is difficult (Bonny 2011). Simple comparisons of herbicide use before and after HR crops became available are not appropriate for assessing the impacts of HR crops on herbicide use. First, many things have

changed since the mid-1990s when these crops were first adopted. These include changes in hectares planted, output and input prices, agricultural policies, and weather. Estimates of the effect of HR crops on herbicide use must control for these factors. Second, growers are not randomly assigned to adopter and non-adopter groups in controlled experiments. Growers choose whether or not to adopt HR crops. If adopters have fundamentally different characteristics than non-adopters, comparing herbicide use across the two groups will suffer from sample selection bias (Fernandez-Cornejo and Caswell 2006). Third, kilograms of active ingredient applied are not good measures of the environmental impact of herbicides. Herbicides vary in their toxicity to different species, persistence in the soil, half-life, leaching potential, and runoff potential, which can have ecological effects as well as impacts on farm workers and consumers (Bonny 2011). A number of studies have attempted to address this issue by weighting herbicide applications by factors such as mammalian toxicity, soil half-life, or the more comprehensive Environmental Impact Quotient (EIQ) (Kovach et al. 1992) that attempts to account for multiple risks (e.g., Bonny 2011; Kleter et al. 2007). Compared to many other herbicides for which it substitutes, glyphosate has lower toxicity and persistence in the environment. This means a switch to glyphosate-based weed management may reduce environmental risks, even if total kilograms of active ingredient applied increase. US herbicide data suggests that kilograms of glyphosate applied have increased substantially since the mid-1990s, while kilograms applied of many other compounds have decreased.

The most widely cited estimates of grower shifts in herbicide use, however, have come from expert surveys of extension specialists, not from actual farm-level data. In these analyses, specialists provided assessments of likely or recommended herbicide treatments that farmers would have made if they did not plant HR crops. Studies have extrapolated expert survey estimates to national changes in herbicide use, weighting herbicide use based on EIQ measures (e.g., Green 2012; Kleter et al. 2007). Studies

adopting this approach show a decline in the EIQ attributable to HR crop adoption. The expert-survey approach can be a cost-effective way to conduct an *ex ante* assessment of the *potential* environmental impacts of HR crops. These estimates, however, do not produce statistically valid estimates of actual herbicide use, let alone estimates of changes in herbicide use attributable to HR crop adoption. In some cases, careful statistical analyses of farm-level HR crop adoption and herbicide use corroborate the expert survey results, but in other cases, not.

Reduced Diversity of Weed Control Tactics Leads to GR Weeds

A fundamental means of delaying the evolution of weed resistance is to diversify control strategies (Duke and Powles 2009; Norsworthy et al. 2012; Vencill et al. 2012). This can be accomplished by using nonchemical control methods (such as tillage, row spacing, and crop rotations) along with chemical control. If herbicides are used, avoiding reliance on herbicides with the same mechanism of action (MOA) is crucial. The widespread adoption of GR crops in the United States, however, has led to a pervasive reduction in the diversity of weed control tactics. Growers have relied less on nonchemical control methods and have relied heavily on a single mode of action for chemical control (Frisvold and Reeves 2010; Norsworthy et al. 2012).

Before the introduction of GR cotton, maize, and soybean varieties in the United States, glyphosate use on these crops was limited. Since the introduction of GR crops, there has been a narrowing of herbicides and herbicide MOAs used for all three crops, which greatly increased the selection pressure for herbicide resistance. From 1997 to 2010, glyphosate's share of total kilograms of herbicide active ingredient applied to maize rose from 1 % to 35 %. For cotton, this share rose from 3 % to 62 % from 1995 to 2010, while for soybeans, it rose from 11 % to 89 % from 1995 to 2006. Three factors contributed to reliance on GR crops and glyphosate. First, there was increasing resistance to MOAs that had been

in general use for a long time, such as acetolactate synthase (ALS – B2) and photosystem II (Cs) herbicides. Second, glyphosate became attractive as a postemergence herbicide because of its broad-spectrum efficacy and reliability. Low cost was also a factor after the patent on glyphosate expired in 2000 (allowing lower cost generics on the market). Third, herbicides with new MOAs have not been registered in the United States since 1998. Phosphinic acid herbicides such as glyphosate accounted for 60 % of hectare treatments for cotton in 2007 and 77 % of hectare treatments for soybeans in 2006. By 2005, triazine and phosphinic acid treatments in maize accounted for two-thirds of hectare treatments.

Evolution of Glyphosate-Resistant Weeds

Increased reliance on GR crops and glyphosate as the dominant means of weed control generated enormous selection pressure GR weeds. Before 1998, there were no reported glyphosate-resistant (GR) weed species in the United States. By 2013, however, glyphosate resistance had been confirmed for 14 species in the United States spread across 36 US states (Heap 2014). GR weeds have proven problematic for cotton, soybeans, peanuts in rotation with cotton, maize, and in California, perennial crops. Resistance to glyphosate has evolved in Palmer amaranth (*A. palmeri*) in GR cotton fields throughout the Southeast United States. Costs of GR weeds can be significant, ranging from \$5 to \$130/ha (Norsworthy et al. 2012). In severe cases, growers may opt to abandon fields altogether.

Barriers to Resistance Management

Problems with GR weeds have raised questions about the sustainability of GM HR crops. While many growers are adopting many Best Management Practices (BMPs) to manage weed resistance, adoption rates for a number of practices remain low. While resistance management practices for insect-resistant Bt crops are federally mandated in the United States, management of

weed resistance for HR crops has been voluntary (Frisvold and Reeves 2010). Bt crops have pesticides incorporated into them and are thus regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The current rate of BMP adoption has proved insufficient to delay resistance in many areas (NRC 2012). Slowing resistance implies economic and environmental trade-offs (Frisvold and Reeves 2010; Norsworthy et al. 2012; Price et al. 2011). For growers, BMPs may entail reductions in short-run returns. No-till and reduced tillage practices have provided a number of environmental benefits that could be lost if growers revert to tillage in the face of weed resistance. Using herbicides with a different MOA than glyphosate may also delay resistance. This, however, may entail using more herbicides and using herbicides with greater persistence or toxicity than glyphosate. Thus, some of the practices to delay resistance to glyphosate may undercut some of the environmental benefits of glyphosate.

As of the mid-2000s, many growers held attitudes and perceptions that would discourage BMP adoption (NRC 2012). A significant share of growers appeared unaware of certain major factors contributing to the evolution of weed resistance. Many growers may attribute infestation and spread of resistant weeds to factors beyond their control such as natural forces (e.g., wind, birds, animals) or poor weed management by their neighbors. If growers perceive that preventing weed resistance is beyond their individual control and requires collective grower action, they will have less incentive to take individual actions that incur additional costs to delay resistance. Growers may also believe that new chemistries or cultivars will soon become available to address resistance problems. Growers have less incentive to conserve the efficacy of an herbicide if they believe substitutes will be available in the future.

Role and Limits of Stacked Trait HR Varieties

One approach to address resistance to GR crops is through plant breeding by “stacking” resistance

traits to multiple herbicides in individual crop varieties (Green 2012). Resistance can, in theory, be delayed by rotating between herbicides with different MOAs and by using herbicide mixtures. This would reduce selection pressure on any one compound. If a particular weed were resistant to one herbicide, it may be killed by another herbicide that relies on a different MOA. Companies are developing new crop varieties that combine glyphosate resistance with resistance to herbicides with different MOAs (Green 2012). One example will be varieties that stack glyphosate resistance with resistance to different ALS-inhibiting herbicides. Varieties resistant to two more herbicides will soon be commercially available (Green 2012). These stacked varieties will be combined with homogeneous blends (herbicide mixtures with different MOAs). Because these blends will be mixtures of currently registered herbicides, they may receive regulatory approval relatively quickly.

Combining herbicide mixtures with multiple-resistant (MR) crop varieties can reduce reliance on a single MOA. This strategy also avoids the high cost and lengthy delays in developing novel herbicides. It raises questions, however. First, how many different MOAs need to be combined in one HR crop variety to delay resistance substantially? How is the potential for delay affected by the fact that some weeds are resistant to the herbicides that are to be combined. For example, some weeds are already resistant to glyphosate, others are resistant to ALS inhibitors, and some are resistant to both. The list of weeds resistant to multiple herbicides continues to grow (Mortensen et al. 2012; Heap 2014). Some have criticized this MR strategy because it may lead to greater herbicide use and negative environmental impacts in the short run and divert attention and resources away from more comprehensive integrated weed management research and extension (Mortensen, et al. 2012).

Summary

Since their introduction in the mid-1990s, growers have adopted genetically modified, herbicide-resistant (HR) crop varieties quickly in countries

where they have been approved. Benefits to growers not captured in standard farm profit calculations appear to account for the popularity of HR varieties. HR crops have been credited with encouraging adoption of conservation tillage and causing substitution to herbicides with lower toxicity and persistence in the environment. Evidence for the effect on conservation tillage is stronger than evidence for herbicide substitution. Adoption of HR crop varieties led to a dramatic reduction in the diversity of weed control tactics in US agriculture and the evolution of HR weeds. Grower adoption of resistance management strategies has been limited and insufficient to delay resistance. Development of crop varieties resistant to multiple herbicides is being pursued as a strategy to respond to HR weeds. Debates remain over the potential of this approach relative to a more comprehensive integrated weed management strategy to successfully delay resistance.

Cross-References

- Pest Control
- Sustainability of Food Production and Consumption
- Transgenic Crops

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were born on the Indian subcontinent in the sixth century BCE. Initially adopted by the upper castes of society, they became more widespread with the spread of devotional movements starting in the sixth century CE. In the twentieth century, vegetarianism was one of the core teachings of the great political and spiritual leader Mahatma Gandhi. While today a minority of Indians are strict vegetarians, vegetarianism remains an ideal of society.

Definition of Hinduism

Hinduism is the world's third largest religion (after Christianity and Islam), with an estimated 950 million adherents in India and the diaspora. Although some beliefs and practices are thousands of years old, the term “Hinduism” is relatively new. It was first used in the ninth century CE by Central Asians and Persians for the inhabitants of the subcontinent. (The word comes from the Persian Sindh, meaning the land on the banks of the Sindhu, the Indus River). In the late eighteenth century, Europeans began applying it to the followers of indigenous Indian religions. Until then, Hindus (if they called themselves anything) referred to themselves as followers of the *Sanatana dharma*, the eternal *dharma* – a Sanskrit word variously translated as duty, personal path, vocation, law, and religion.

Unlike Islam or Christianity, Hinduism has no founder, no credo, and no scriptures that are recognized by all adherents. It is a conglomeration of various philosophies, beliefs, and social norms that have evolved over the millennia. As K.M. Sen writes in his history of Hinduism:

Hinduism is more like a tree that has *grown* gradually than like a building that has been *erected* by some great architect at some definite point in time. It contains within it . . . the influences of many cultures, and the body of Hindu thought offers as much variety as the Indian nation itself. (Sen 1991, pp. 4–5)

Hinduism and Food

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Introduction

The concepts of ahimsa, noninjury to all forms of life, and the associated practice of vegetarianism

Nonetheless, there are some attitudes and practices shared by many Hindus, especially related to food. According to ancient Indian texts, of all things created, food is the most

important since it enables a person to use all his faculties and frees him or her from ignorance and bondage. “Purity of thought depends on the purity of food,” said the ancient sages, or, to use the modern phrase, “You are what you eat.”

Historical Background: The Indo-Aryans

The oldest text revered by Hindus is the *Rig Veda*, a collection of hymns and paeans to the gods, incantations, prayers, and philosophical speculations composed between 1700 and 1100 BCE. This and other works, collectively called the Vedas, were passed down orally and written down in Sanskrit centuries later. Even today, some of the verses are recited during weddings and funerals, making it one of the world’s oldest religious texts in continuous use.

It was composed by people known as Indo-Europeans or Indo-Aryans, who migrated in small groups to the subcontinent from the region between the Black and Caspian Seas between the fifth and fourth millennia BCE. The Indo-Aryans were pastoralists, whose main occupation was raising cows. Their gods were forces of nature with counterparts in classical Greece and Rome: Indra, the equivalent of Zeus and Jupiter, ruled over the sky and heavens; Agni was the god of fire; Varuna, the god of thunder; etc.

Life and nature were uncertain, and the main way of placating the gods and winning their favor was by rituals that involved animal sacrifice. Various animals were killed by the priests, called Brahmins, who alone knew the complicated rituals associated with the sacrifice. After the meat was offered to the gods, it was consumed by the priests and worshippers. Similar rites took place in classical Greece, Rome, and Persia.

Although meat eating was condoned, the ancient texts show a certain ambivalence about eating meat, especially cows. Some recommend the offering of effigies of animals made of ghee or clarified butter, vegetables, or rice and barley in place of meat. Cows were held in very high esteem in Indo-Aryan society. A hymn in the *Rig Veda*, “A Glorification of the Sacred Cow as Representing the Radiant Heavens,” declares:

The Cow is Heaven, the Cow is Earth, the Cow is Vishnu, Lord of Life

Both Gods and mortal men depend for life and being on the Cow.

By around 1000 BCE, social divisions had become sharper, and there emerged one of the most distinctive features of Indian society, the caste system. At the top were the Brahmins. Next were the *rajanya* (later called *kshatriya*), the warriors and rulers, followed by the *vaishya*, the providers of wealth through herding, agriculture, and trade. The fourth category, the *shudra*, was artisans and service providers. Later a fifth category was added for people who did jobs that even shudras would not touch, such as tanning hides, collecting garbage, or burying the dead. These were the outcasts, today legally referred to as scheduled castes.

Over the centuries, caste came to have many ramifications, especially for the two most fundamental human activities, sex and eating. People were not supposed to marry, accept food from, or eat with someone outside their caste. Caste also became associated with ideas of purity and pollution, with the Brahmin considered the purest of the pure. Contact with lower castes was considered polluting, and there were elaborate rules governing such contacts.

Reform Movements

Starting around the beginning of the first millennium BCE, the Indo-Aryans moved eastward to the site of modern Delhi and Bihar and westward into present-day Gujarat. They settled down, built towns and cities, and developed a sophisticated urban civilization. Wealth and leisure gave rise to philosophical, moral, and religious speculation, and new ideas emerged that became an integral part of Hindu thought. One is that there is an endless cycle (*samsara*) of death, rebirth, redeath, etc., and that souls are constantly reborn (reincarnation). From this emerged the law of *karma*, a word which means action or deeds, with the connotation of morally charged action, good or bad. The sum of a person’s past karma determines how he or she is reborn into his present life.

These ideas were central to two new religious/philosophical movements, Jainism and Buddhism, which arose in the sixth century BCE. Their founders, Mahavira and Gautama Buddha, respectively, were the sons of rulers who abandoned their palaces to seek the meaning of life. Both preached the doctrine of *ahimsa* – a Sanskrit word meaning noninjury or nonviolence – and rejected animal sacrifice. Buddha, who advocated a more moderate path to salvation, allowed his lay followers to eat meat. Buddhist monks had to follow a vegetarian diet in their monasteries, but outside, where they begged for their food, they had to accept anything that was given to them, even meat or fish, provided that the animal was not slain on purpose for the monk and the recipient did not see, hear or even suspect the killing of the animal.

Jainism was much stricter. Five things were and are absolutely forbidden to all Jains, laypeople, and monks alike: meat and meat products, fish, eggs, alcohol, and honey. In addition, monks and nuns and devout Jains were not allowed to eat vegetables and fruits that grew underground or contained the seeds of life, including potatoes, figs, pomegranates, etc.

Both Buddhism and Jainism rejected the authority of the Vedas, the dominance of the Brahmins, the ritual sacrifice, and the caste system. These practices won many followers among common people and rulers alike. In addition to the ethical and moral reasons for avoiding meat, there were economic issues. Some sacrifices required hundreds of animals, which placed a great burden on the farmers who had to donate their animals for this purpose. The rulers' growing administrative and military costs competed for the funds demanded by the Brahmins for their expensive rituals. The stabilization of agriculture made cattle more useful for various operations, such as plowing and making manure, which was used as a fertilizer and, when dried, as a fuel (*gobar*, still a cooking fuel among the poor in India).

The Brahmins recognized the popular appeal of Jainism and Buddhism and co-opted many of their doctrines and beliefs. The eating of beef

became taboo, and vegetarianism began to be adopted as a high ideal, a signifier of “purity,” and a marker of status. As one scholar notes, “Vegetarianism was far more than an interesting new dietary custom; it was the focal point of what might be called a revolution of values” (Smith 1990, p. 197).

A political boost to vegetarianism was given by Emperor Ashoka Maurya (304–232 BCE), to this day considered the greatest of all Indian rulers, revered not only for his conquests but his efficient administration and tolerant policies. A supporter, if not an adherent, of Buddhism, Ashoka advocated *ahimsa*, prohibited animal slaughter and meat consumption in his empire on certain days, and virtually abandoned the consumption of meat in his own court. A famous inscription reads:

Formerly, in the kitchens of the [emperor], several hundred thousand animals were killed daily for food, but now at the time of writing only three are killed – — two peacocks and a deer, though the deer not regularly. Even these three animals will not be killed in future.

Moreover, the climate and fertility of India meant a year-round abundance of fruits and vegetables which facilitated the avoidance of meat. Finally, these trends were no doubt reinforced by an affection similar to that we show towards our domestic pets. The thought of eating dogs horrifies people in the Western world, although most people have little compunction about eating cows.

The Dharma Texts

Between 300 BCE and around 500 CE, Sanskrit texts called the *dharmaśāstras* and *dharmaśāstras* laid down rules for all society, so that each person could live according to his or her *dharma*. Many of their prescriptions and proscriptions concern marriage and food. There are lists of permitted and banned foods for the higher castes, including garlic, onions, mushrooms, the milk of cows who have calved, domesticated fowl and pigs, most fish, meat from a slaughter house, alcohol, and cows. Some foods were

proscribed for people at different stages of their lives. Students, for example, should avoid meat, honey, spices, onion, garlic, and sour foods that are supposed to be sexually stimulating. An old man is supposed to retire to the forest as a hermit and live on fruits, vegetables, roots, flowers, and wild grains.

The texts are, however, contradictory with respect to meat. Members of the higher castes were permitted to eat meat under certain circumstances: during certain rituals, for example, or when their life is in danger. The *Manusmṛiti*, one of the most influential and oft-quoted *śāstras*, devotes an entire section to the pros and cons of eating meat. The discussion opens and closes with statements defending the ancient tradition of eating meat for sacrifices. But they bracket passages favoring vegetarianism and nonviolence and condemning meat consumption outside of the sacrifice, with the number of antimeat verses outnumbering pro-meat verses by 25 to 3. *Manu* ends firmly on the fence by declaring “There is nothing wrong in eating meat nor in drinking wine nor in sexual union, for this is how living beings engage in life, but abstention bears great fruit.”

These contradictory attitudes reflect continued tensions in Indian society between the traditions of the Brahmins, whose power was based on the sacrifice, and popular support for vegetarianism. That it was becoming widespread is evident in the statement of the Chinese Buddhist Fa Hsien who visited northern and eastern India in the early fifth century CE. He wrote:

Throughout the whole country the people do not kill any living creature, nor drink intoxicating liquor, nor eat onions or garlic. The only exception is that of the Chandalas [outcastes]. . . . In that country they do not keep pigs and fowls, and do not sell live cattle; in the markets there are no butchers' shops and no dealers in intoxicating drink Only the Chandalas [outcastes], fishermen and hunters, and sell flesh meat. (Acharya, p. 147)

As the last sentence indicates, meat consumption had increasingly come to be associated with low status, although an exception was made for kings and chieftains, for whom hunting was a way of life.

The Devotional Movement

By the end of the sixth century CE, a new form of worship emerged, often called *bhakti*, which means devotion. It was based on a personal relationship between the worshipper and a loving deity. The sacrifice was replaced by *puja*, a ceremony in which the worshipper offers flowers, fruit, and grains to the image of a deity either at home or in a temple. The Bhakti movement was initially resisted by the Brahmin priests, but they eventually adopted the practices and presided over the ceremonies. By the eleventh or twelfth century, the movement had spread throughout South Asia. The two main deities were Shiva, the god of creation and destruction, and Vishnu, the god of preservation, and they remain so today.

Vishnu had many incarnations, including Rama, hero of the *Ramayana*, and Krishna. Worshipers of these deities are called Vaishnavs. Many Vaishnavs were and are vegetarians, and some even live in monasteries, where they follow a vegetarian diet. Worship of Krishna became very popular in the sixteenth century under Sri Chaitanya (1486–1534) and spread all over northern and eastern India. Born into a Brahmin family of Vedic scholars, Chaitanya rejected the strict hierarchy and cruel discrimination of the caste system and preached a message of equality and love. He drew an enormous following among the lower castes, who emulated his habits, including his vegetarianism.

A modern descendent is the International Society for Krishna Consciousness (ISKCON), known popularly as the Hare Krishna movement, founded in New York City in 1966, whose members follow a lactovegetarian diet, including many sweets made from milk and sugar. This is related to the origins of Krishna (also known as Govinda, the divine herdsman), who was raised by dairy farmers and as a child played with the gopis (milkmaids) and stole butter from the local farmers.

In the *Bhagavad Gita*, considered one of the central texts of Hinduism, Krishna describes three basic dharmas or natures: *sattvic*, which can be translated as lucidity, purity, or dispassion;

rajasic, translated as passion, distraction, or restlessness; and *tamasic*, dark inertia or dullness, which is manifested in sloth, lethargy, anger, and ignorance. He says:

Foods that please lucid men
Are savory, smooth, firm and rich
They promote long life, lucidity
Strength, health, pleasure and delight

Passionate men crave foods
That are bitter, sour, salty, hot
Pungent, harsh and burning
Causing pain, grief and sickness

The food that pleases
Men of dark inertia is stale,
Unsavory, putrid, and spoiled,
Leavings unfit for sacrifice.

The nature of these foods is described in other texts, especially those associated with hatha yoga, and yogis (practitioners of yoga) are still required to eat sattvic foods. They include rice, barley, wheat, fresh fruits and vegetables, especially green leafy vegetables, green lentils, milk, fresh yogurt, almonds, seeds, sugar candy, dry ginger, cucumber, and ghee. Rajasic foods include fermented foods that have not been freshly made, cheeses, some root vegetables, fish, eggs, salty, sour and hot items, coffee and tea, white sugar, and spices. Tamasic foods include leftovers that have been around more than a day, canned and preserved foods, fast foods, fried foods, and processed foods as well as meat, tobacco, alcohol, and drugs. These categories also had strong associations with caste: sattvic foods were supposed to be eaten by Brahmins, rajasic by kshatriyas, and tamasic by outcastes.

The Influence of Mahatma Gandhi

The great Indian political leader Mohandas Karamchand Gandhi (1869–1948), known as Mahatma (“great soul”), was a very strong advocate of vegetarianism. His extensive writings on food, morality, and ethnics reflect both traditional Indian food theories and practices and modern nutritional science. Gandhi’s beliefs about food are inseparable from his philosophy which was

based on *ahimsa*, or nonviolence, and *satyagraha*, a Sanskrit word that means “insistence on truth.” Translated into political terms, it meant strength and determination in achieving one’s political goals – in this case, Indian Independence – by nonviolent methods. Restraint of one’s palate was one of the ways of strengthening one’s character.

Gandhi was born into a Vaishnav Hindu family in Gujarat in an area with a strong Jain presence. His family was vegetarian and his pious mother often fasted. When Gandhi was a teenager, a friend persuaded him to try meat. At the time there was a popular belief that the British owed their strength and dominance to their consumption of meat and that if Indians followed suit, they could defeat the British and win independence. A popular Gujarati poem went,

Behold the mighty Englishman
He rules the Indian small,
Because being a meat-eater
He is five cubits tall.

In his autobiography, Gandhi described his first foray into meat eating:

So the day came. It is difficult fully to describe my condition. There were on the one hand, the zeal for ‘reform’, and the novelty of making a momentous departure in life. There was, on the other, the shame of hiding like a thief to do this very thing. I cannot say which of the two swayed me more. We went in search of a lonely spot by the river, and there I saw, for the first time in my life—meat. There was baker’s bread also. I relished neither. The goat’s meat was as tough as leather. I simply could not eat it. I was sick and had to leave off eating.

I had a very bad night afterwards. A horrible nightmare haunted me. Every time I dropped off to sleep it would seem as though a live goat were bleating inside me, and I would jump up full of remorse. But then I would remind myself that meat-eating was a duty, and so become more cheerful. (Gandhi, *An Autobiography* 1940, Part I, Sections 6 and 7)

Gandhi eventually overcame his reluctance (and apparently his compassion for goats) and began to enjoy eating meat. This went on for a year. But eventually he was overcome with guilt and concluded that lying to his parents was worse than not eating meat. He decided that as long as they were alive, meat eating was out of the question.

In 1888 Gandhi left for England to study law. Before leaving, his mother made him swear a vow administered by a Jain monk that he would never touch meat, alcohol, or women. Initially he subsisted on a diet of boiled vegetables and bread until he discovered a vegetarian restaurant in London. Here he bought a copy of the book *A Plea for Vegetarianism* by the British reformer Henry S. Salt (1851–1939), one of the first advocates of animals' rights. The book discussed the moral reasons for being a vegetarian, including the inherent violence in the eating of meat and the nonviolence that could be achieved from abstaining from it – ideas that Gandhi could identify with the Indian concept of *ahimsa*. This led to another conversion. Rather than abstaining from meat because of his vow to his mother, he did so now from moral conviction “The choice was now made in favor of vegetarianism, the spread of which henceforward became my mission,” he wrote. Gandhi joined the London Vegetarian Society and became a member of the Executive Committee.

Gandhi argued that remaining a staunch vegetarian requires a moral justification and cannot be done only to improve one's health. “Man was not born a carnivorous animal but born to live on the fruits and herbs that the earth grows,” he declared. However, those who became vegetarians purely for health reasons largely fall back. Some vegetarians make food a fetish and think that by becoming vegetarians they can eat as much lentils, beans, and cheese as they liked, although this did not necessarily make them healthy.

Gandhi was not a vegan and always regretted his inability to give up milk, a failing he called “the tragedy of my life.” In his book *Key to Health*, a summary of his views on diet and health written in the early 1940s, he traces his milk drinking back to a serious case of dysentery in 1917. He had not drunk milk for 6 years, so when a doctor friend suggested he should consume milk to build up his strength, he initially resisted. However, the friend pointed out that at the time of taking the vow he had in mind only cow and buffalo milk, so that goat milk was permitted. Gandhi eventually yielded while conceding that

he was keeping only the letter, not the spirit, of his vow. But drinking the goat milk immediately restored his health. As a result, he recognized the need to add milk to a vegetarian diet to provide protein, although with certain reservations (mainly because of the danger of drinking the milk of diseased cattle). He also accepted the consumption of unfertilized eggs which do not entail the destruction of life.

While Gandhi rigorously followed his own prescriptions, he was not dogmatic about imposing them on others. He notes that prolonged experimentation and observation convinced him that there is no fixed rule for all constitutions. And while vegetarianism, which he called “one of the priceless gifts of Hinduism,” is highly desirable, it is not an end in itself. “Many a man eating meat and with everybody but living in the fear of God is nearer his freedom than a man religiously abstaining from meat and other things, but blaspheming God in every one of his acts,” he wrote in his publication *Young India* (Gandhi, *Moral Basis of Vegetarianism* 1999).

Despite his affinity and close ties with the Jains, he did not hesitate to kill insects or have snakes killed if they invaded his ashram, nor did he find it necessary to avoid eggplants or potatoes, as the Jains did. If one does follow these practices, he held that it should not be in a spirit of self-righteousness. *Ahimsa* is not a matter of mere diet; it is the self-denial and self-restraint behind it that matters.

Gandhi's beliefs about food, while stimulated by his encounter with Western vegetarianism, were deeply rooted in ancient Indian traditions. But whether they had any lasting effect on Indian dietary habits is problematic. Seven months before his assassination in 1948, he declared, “Everybody is eager to garland my photos and statues, but nobody wants to follow my advice.”

Although today India has the world's largest vegetarian population, vegetarians are far from a majority. A 2006 survey of nearly 15,000 people in 19 Indian states found that only 31 % of Indians eat no meat, another 9 % eat eggs, while 60 % eat meat on occasion (Yadav and Kaur 2006). A mere 21 % of households consist only of vegetarian members. The proportion of

vegetarians is somewhat higher among women than men (34 % vs. 28 %) and people over the age of 55 (37 % vs. 29 %). Growing affluence has led to a rise in consumption of animal products in India, as it has done in other parts of the world, and vegetarianism is still strongly correlated with caste: according to the survey, a majority of Brahmins – 55 % nationwide and higher proportions in southern and western India. Very few Indians are vegans.

Nonetheless, the ideal of vegetarianism as an ethical choice remains an ideal in Indian society, and India has given the world one of the great vegetarian cuisines.

Summary

Hinduism is the world's third largest religion, but unlike Islam or Christianity, it has no founder, credo, or scriptures recognized by all adherents. Still, certain attitudes and practices are shared by many Hindus, especially related to food. The concept of ahimsa, or noninjury to all forms of life, emerged in the sixth century BCE, and avoiding meat, especially beef, became a dietary ideal. Vegetarianism was also one of the cornerstones of the teaching of Mahatma Gandhi. Although today India has the world's largest populations of vegetarians, only about a third are strict vegetarians, with considerable variations by region and caste. This article surveys the historical ideas associated with Hinduism, especially attitudes towards animals and meat, the transformation of these ideas under the influence of Buddhism and Jainism, the teachings and influence of Mahatma Gandhi, and the status of vegetarianism in modern India.

The greatness of a nation and its moral progress can be measured by the way in which its animals are treated. Mohandas K. Gandhi.

Cross-References

- [Agricultural Ethics](#)
- [Buddhism, Cooking, and Eating](#)
- [Fasting](#)

- [Jainism and Food](#)
- [Meat: Ethical Considerations](#)
- [Vegetarianism](#)

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Home Gardening

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Synonyms

Cultivate; Grow; Plant; Propagate

Introduction

Home food gardening is a potential food provisioning strategy that involves utilizing the physical, social, and economic resources of

a household to produce food, particularly vegetables, fruits, berries, and herbs. While the division between farming and home food gardening can be blurred, in contrast to farming, home food gardens are in close proximity to the place of residence and involve smaller plots of land as well as a wider diversity of crops (FAO 2004).

Practically speaking, home food gardening has been practiced as a food provisioning strategy for thousands of years (FAO 2004). In the case of the United States (and its earlier status as a British colony), the practice and prevalence of home food gardening has evolved over time. During the early settlement of the United States, cultivating food was a widely adopted practice necessary for survival. However, innovation and then the gradual industrialization of farming and food production enabled a smaller number of farmers to meet the food needs of an increasingly urban non-farming, non-gardening population (Schupp and Sharp 2012). In fact, home gardening for many increasingly became a hobby and a form of leisure rather than a survival strategy (Schupp and Sharp 2012). Thus, over the last two centuries, the decision to engage in home food gardening and the reasons for doing so have evolved and changed, often according to geographic location and socioeconomic status. For example, in the nineteenth century lower-income households and those living in newly settled lands continued to rely on home gardening as a survival strategy, while the existence of a home garden in more developed parts of the United States became a status symbol for growing exotic foods among the highest classes. As the urban population surpassed the rural population at the beginning of the twentieth century, the practice of home food gardening further declined as the working classes were able to effectively work for wage labor and purchase needed farm inputs from an increasingly productive farming system.

Two important deviations from the pattern of declining home gardening occurred during both World Wars as “war gardens” and “victory gardens” served as “symbolic expressions of patriotism” as well as important sources of food for the country that needed to dedicate substantial industrial resources to the war efforts

(Schupp and Sharp 2012). It is interesting to note that during these time periods, the government played a key role in providing educational information to support the resurgence of gardening as gardening skills had diminished among the increasingly urban society of the United States.

At the start of the twenty-first century, there appears to be a resurgence in the practice of home gardening, in part as a result of increasing concerns with the safety and quality of a progressively more industrialized and globalized agriculture and food system, as well as growing economic hardship associated with the Great Recession (NGA 2009). The United States government, as well as nongovernmental organizations, are once again playing a key role in providing support to overcome lack of knowledge and cultural limitations related to home food gardening. Home food gardening is also being actively promoted as an international development strategy in order to improve nutrition and food access in developing nation-states. Important ethical issues, however, arise from social, economic, cultural, and other barriers that exist that limit the ability of home gardens to fully develop as an effective food provisioning strategy.

Prevalence of Home Food Gardening

Despite the decline of home gardening as a primary food provisioning strategy, there remains a substantial number of home gardeners in the United States. The National Gardening Association (NGA) has estimated that nearly 31 %, or approximately 36 million households, in the United States engaged in home food gardening in 2008, with even greater participation predicted in the future (NGA 2009). In a statewide survey of Ohioans, 47.6 % of households reported engaging in fruit and vegetable gardening in 2008 (Schupp and Sharp 2012). Research has found that contemporary home food gardeners are more likely to be women, be over the age of 45, have incomes greater than \$50,000, be married, and not have children living at home (NGA 2009). In addition, living in the

countryside, on a farm, and in a freestanding house all increase the likelihood of a household engaging in home food gardening (Schupp and Sharp 2012). A household experiencing economic hardship also has been found to increase the likelihood of having a home garden (NGA 2009).

Although there is little research documenting the prevalence of home food gardening internationally, it is a practice that has been important in many international contexts. The ongoing pace of urbanization around the globe is likely to impact the character of home gardening in the international context now and in the future. While home food gardening has historically been a food security strategy utilized primarily in rural areas, gardening has become an increasingly significant activity in urban environments (Foeken 2006), particularly as rural populations with agricultural backgrounds move into cities. In urban contexts, home gardening can take a diversity of forms, including gardening in containers or on rooftops.

Benefits of Home Food Gardening

Home food gardening offers a number of potential economic and noneconomic benefits. These include a way for households to address economic hardship, a strategy for households and communities to improve the nutrition and well-being of residents, a tool for international development, a way for consumers to address environmental and social concerns with the agriculture and food system, and a strategy to increase community food security and sustainability. Moreover, home food gardening has long been used as a survival strategy. The recent rise in home food gardening has been linked in part to increasing economic hardship in the United States during the recession between 2007 and 2009 (NGA 2009). Households can enjoy fresh, local produce while saving money on food bills. Home food gardening not only is a potential strategy to provision food more frugally but also can be used as a source of income generation, particularly through the informal economy. For example, in Toronto, home

gardens have become sources of produce for Community Supported Agriculture (CSA) projects, acting as a tool for economic development in the inner city (Patel and MacRae 2012).

Home food gardening is promoted by a number of governmental and nongovernmental organizations as a nutrition and community development strategy, particularly for nations with low levels of development and high levels of poverty and food insecurity. The food insecure can experience increased direct access to food by engaging in home gardening, which can act as an important supplement to field crops, providing a diversity of vitamin and energy rich vegetables and fruits (Marsh 1998; FAO 2004). Research suggests that even small mixed vegetable garden plots can provide a considerable amount of daily recommended nutrients. Home food gardening is viewed as a more sustainable strategy for improving food security compared to other forms of food aid or nutrition supplementation. Moreover, home food gardening can enable households to consume culturally appropriate food while reducing the necessity of relying upon food aid. In addition to providing nutrition, gardening can be an important source of income for poor households in less developed nations (Marsh 1998). Further, home food gardening can help alleviate seasonal food shortages and can provide environmental benefits by minimizing problems like dust and erosion, recycling water, and increasing local biodiversity (FAO 2004).

Gardening has the potential to increase food security at the individual or household level in more developed nations like the United States, as well as to increase food security and sustainability at the community level. Using high-yield, bio-intensive methods, home food gardens can produce a significant amount of food for urban communities (Colasanti and Hamm 2010). A potential form of civic agriculture, gardening can be a type of food production that encourages social and economic development, improving community well-being (Black 2010).

Other human health concerns with the agriculture and food system can be addressed through home gardening in more developed nations. Home gardening enables consumers to act

reflexively and practice control in the agriculture and food system by reducing chemical inputs, the use of genetically engineered (GE) crops, or food additives. Home food gardening can serve as a form of moderate physical exercise (Carter 2010). There are therapeutic advantages to engaging in home food gardening, and it can enable individuals to reclaim personal power and demonstrate agency and self-sufficiency (Carter 2010; Black 2010). Further, there are cultural benefits to home gardening (Black 2010). For example, home food gardening can enable immigrants with cultivation backgrounds to engage in practices they are skilled in and produce culturally appropriate foods (Rein and Ross 2009).

Because home gardening is small-scale, it is viewed by some as an environmentally friendly alternative to large-scale, globalized conventional agriculture and food production. Home gardening allows consumers to have greater control over production, processing, and distribution practices. By minimizing application of chemical inputs, home food gardeners can engage in practices that are potentially better for soil, air, and water quality. By planting a diverse assortment of crops, home food gardening can be an effective way to increase biodiversity conservation (Webb and Kabir 2009). For example, home food gardeners can utilize heirloom seed varieties, ensuring the maintenance of biodiversity in agricultural crops. Home food gardeners can help mitigate biological extinctions that may occur with climate change by consciously using native plants in their garden designs (Van der Veken et al. 2008). Reduction of the food miles involved in agricultural production can be accomplished through home food gardening, limiting the ecological footprint of food production. In fact, home gardens create the shortest possible distance between producers and consumers (Mariola 2008).

Limitations to Home Food Gardening

Potential barriers can limit the full achievement of the many positive aspects of home food

gardening. For example, while home food gardening can improve ecological conditions in the agriculture and food system, people engaging in home food gardening do not necessarily employ more ecologically sound food production practices (Hinrichs 2003). Home gardening does not correct social problems with the agriculture and food system, particularly issues related to improved food access. Engaging in home gardening requires resources, including time, knowledge, space, and money, as well as motivation and interest. A lack of resources for or interest in home gardening can act as potential barriers to participation in this activity.

While not fully discounting the potential benefits of home gardening, there are demographic factors which could influence the ways in which households experience these barriers, including race and ethnicity, social economic status, as well as geography. For example, socioeconomic status (SES) can act as a barrier to local food system participation. Research suggests that people of lower SES are disproportionately underrepresented in alternative agriculture and food movement activities (Hinrichs 2003), such as gardening. One reason for this might be that low SES households do not have access to resources, especially monetary resources, which are necessary for the purchase of equipment and supplies needed to set up and maintain a garden. The time available for participation in home gardening might be affected by SES. Higher SES households are more likely to experience time constraints based on family or household responsibilities, which are considered more flexible, while lower SES households are more likely to experience time constraints based on work responsibilities, which are less flexible (Inglis et al. 2005). Thus, in relation to time, home gardening is more challenging for lower SES households. It has been asserted that the local foods movement promotes middle and upper-middle class values and promotes certain types of foods traditionally consumed by middle and upper middle class households (Guthman 2011). Marking lower SES households as outsiders can influence the degree of interest lower-income households have in home gardening and thus their motivation

to participate in this activity. Knowledge can be a further potential barrier, given that gardening requires specialized knowledge about subjects such as soil health, the timing of planting, pest management, and harvesting. Informal social networks as well as access to other resources, such as university extension information, can play a key role in providing lay knowledge about how to produce and prepare food (Fonte 2008). This knowledge is not accessible to all equally, with those of lower SES being more likely to report lack of knowledge as a barrier to engaging in home food gardening.

Race and ethnicity can act as a barrier to home food gardening. Inequalities based on race and ethnicity, which are historically embedded in local communities, can be reproduced in alternative agriculture activities, such as gardening, excluding non-white participants (Guthman 2011). Priorities about what and how to eat established by white participants of alternative agriculture and food movements do not necessarily match the preferences or priorities of non-white households (Guthman 2011). As home gardening comes to be defined as an activity for white people, minorities potentially have less interest in or motivation to participate. Race and ethnicity could interact with other barriers, including knowledge, time, space, and money, in so far as racial and ethnic inequalities intersect with social class inequalities. This limits the potential of home food gardening to act as a tool for increasing food security and food sovereignty.

Issues of space and place affect the decision to participate in home food gardening. People living in the countryside, on farms, or in freestanding houses are more likely to participate in home food gardening because they are more likely to have access to the vital resource of space (Schupp and Sharp 2012). Urban agriculture, a potential form of home gardening, is becoming an increasingly popular activity, with cultivation occurring in diverse spaces, including containers, abandoned properties, and public parks. Nevertheless, those living closer to urban centers likely have less space, especially if they reside in multi-dwelling housing units, condos, or apartments, making them more likely to have to confront the

obvious challenge of where to garden. These physical factors can interact with race/ethnicity and socioeconomic status. For example, higher incomes enable people to live in a freestanding home, and to own that home, which allows them greater freedom to install and maintain a home garden. For some living in urban areas, the line between private and public property becomes blurred, and individuals will often squat on urban land in order to engage in home food gardening (Rein and Ross 2009). The growth of the community gardening movement is helping pave the way for legal changes in order to expand urban gardening (Hamilton 2011), increasingly allowing gardening on previously abandoned properties. However, as blighted urban properties improve through the efforts of local gardeners, these properties can become attractive for residential or commercial redevelopment (Rein and Ross 2009). Further, social networks have been found to be important in motivating and supporting the practice of gardening (Schupp and Sharp 2012). Therefore, not living in a community which engages in or supports home food gardening can act as a barrier to participation.

The potential benefits of home gardening may be offset by the increased physical and psychological burden of this work, which often falls to women. Internationally, women remain responsible for many aspects of providing food for the household, suggesting that women disproportionately have responsibility for home food gardening. Research suggests that women are more likely to garden for household food provisioning and are more likely to engage in ecologically beneficial production practices (Reyes-Garcia et al. 2010). Women remain predominantly responsible for preparing and serving food for the household. Therefore, the additional labor involved not only in growing food in home gardens but also processing that food for household consumption adds to women's labor. This additional work can add stress and hardship to women's lives.

There are limitations to home food gardening as a tool for international development. While often viewed as a panacea for food insecurity in

less developed countries, for households to engage in home food gardening, they must have access to land, water, seeds, and technical assistance. Thus, home food gardening as an international development strategy is not always as cost-effective as other nutrition intervention strategies. Moreover, development projects promoted by international nongovernmental and governmental organizations utilizing home food gardening are often poorly designed, are poorly managed and monitored, and lack sustainability (Marsh 1998). In addition, the use of gardening as a tool for development is limited by land grabbing. Increasing concern about global climate change is leading to the acquisition of land in developing countries which has previously been used for household food cultivation by the food insecure. Increasing urbanization in developing nations also limits the ability of gardening to act as a tool for increased food security.

Summary

Home food gardening is a longstanding, but evolving food provisioning strategy that provides opportunities for improving social, environmental, and human health outcomes of the food and agriculture system. Yet a number of challenges remain that limit the full achievement of these potential benefits. Sociodemographic factors such as social class, race/ethnicity, gender, and geography all influence the degree to which home food gardening can be a viable strategy for improved agriculture and food system health and well-being. Nevertheless, there are a number of development opportunities which can help mitigate the barriers to home gardening, enabling the potential benefits of home gardening to flourish. Governmental and nonprofit organizations are working to improve access to the resources necessary to engage in gardening. Growing Gardens in Portland, Oregon, Denver Urban Gardens in Denver, Colorado, and the USDA's The People's Garden are all examples of organizations which are building and installing gardens in communities, often for low income households. These organizations provide

technical expertise, networking, gardening materials such as seeds and transplants, secure land, and are working to create policy change in order to make gardening a more accessible activity for all. Such activities provide the support necessary to make home gardening a successful strategy for improving social, environmental, and human health and well-being both domestically and globally.

Cross-References

- Biodiversity
- Civic Agriculture
- Food and Class
- Food Security
- Local and Regional Food Systems
- Public Institutional Foodservice
- Sustainability of Food Production and Consumption

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Homesteading

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Synonyms

Back to the land movement; Self-sufficiency; Simplicity; Sustainable living

Introduction

Homesteading originally refers to the Homesteading Act of 1862

which provided public land grants of 160 acres to any adult citizen who paid a small registration fee and agreed to live on the land continuously for 5 years, after which they would be granted a deed to the land. The program formally ended in 1976 under the Federal Land Policy and Management Act. But its unofficial end was in 1935 when President Franklin Roosevelt withdrew the public domain lands in order to institute a nationwide land conservation program. During the life of the Homestead Act, 783,000 men and women ‘proved up’ their claim and were granted title to the land. (Hunt 2007)

In the 1970s the term “homesteading” became synonymous with self-sufficiency, and since then homesteading has come to be seen as a self-sufficient mode of life where individuals attempt to provide for themselves by growing, raising, and preserving their own food, making cleaning supplies, in some cases providing their own sources of energy, and living completely off the grid. This movement is heavily linked to the “back to the land movement” of the 1970s which was characterized by Thoreauvian simplicity, environmental awareness, and the rejection of consumerism. Modern homesteading embraces not just self-sufficiency but also sustainability.

Major Players in the Homesteading Movement

John Seymour published *The Self-Sufficient Life and How to Live it* in 1976. The book is a guide to gardening, animal husbandry, hunting wild, foraging, cooking and preserving, self-sufficient energy, and other skills like basketry, carpentry, woodworking, etc. Seymour was born in London in 1914 and was a writer, environmentalist, and activist until his death in 2004. Seymour promoted a simple and self-sufficient lifestyle and denounced consumerism, genetically modified organisms, and automobiles while advocating personal responsibility and self-sufficiency as well as care for the soil. Seymour himself wrote

of his treatise in 2003, “Since [writing] the first edition of this book back in 1975. . .there is a far more urgent reason for it. Very few people today can fail to see that the present course that man – and woman-kind is embarked upon is unsustainable”. (Seymour 2003).

The Storey Publishing Company has offered similar volumes about aspects of homesteading, like raising chickens, beekeeping, rug making, log home building, gardening, knitting, candlemaking, composting, etc. They have been publishing these volumes since 1983, claiming that

Storey is at the center of a vast revival of do-it-yourself lifestyles, a movement that has been fueled by an awareness of environmental responsibility, an appetite for the homegrown and locally raised, an appreciation for one-of-a-kind items, and a passion for nature. Whether picking up a needle and thread for the first time, or nurturing a decades-old passion for horses, readers know that they can turn to Storey for no-nonsense advice and new ideas – every time. (Storey Website 2012)

The company hires experts to write these guides and have the goal of “provid[ing] dependable, nuts-and-bolts advice to spirited readers seeking to become more self-sufficient” (Storey website 2012). The company was founded by John and Martha Storey, a couple from Charlotte, Vermont, who bought the Garden Way imprint in 1983 and first published Dick Raymond’s classic volume *The Joy of Gardening*. Storey Publishing has “sold over 35 million volumes and has more than 400 active titles, 70 of which have sold more than 100,000 copies” (Storey Website 2012). Storey published *The Backyard Homestead* by Carleen Madigan in 2009. That particular volume shows that you can produce a wealth of your own food on one-quarter of an acre of land. That wealth of food includes 50 lb of wheat, 280 lb of pork, 120 cartons of eggs, 100 lb of honey, 25–75 lb of nuts, 600 lb of fruit, and more than 2,000 lb of vegetables (Madigan 2009).

Kelly Coyne and Erik Knutzen published *The Urban Homestead* in 2010. *The Urban Homestead* serves as a treatise for just that. Coyne and Knutzen illustrate that one can become more self-sufficient through rather simple means and still live in a metropolitan area.

Coyne and Knutzen are a married couple living in Los Angeles. Their book shows ways to grow vegetables in small spaces, compost, forage in urban areas, raise animals on a city lot, provide your own power, and make and preserve many of your own foods and cleaning products. Coyne and Knutzen describe their project as a shift “from being consumers to being **producers**.” They still “buy stuff. Olive oil. Parmigiano reggiano. Wine. Flour. Chocolate” and are “no strangers to consumer culture, not above experiencing a little shiver of desire when walking into an Apple computer store” (Coyne and Knutzen 2010).

Why Self-Sufficiency Has Become a Concern

Self-sufficiency has become a concern for many in the face of (1) dependence on foreign oil, (2) food-borne illnesses, (3) regaining lost skills like canning and preserving, and (4) environmental concerns.

Dependence on Foreign Oil: Modern society is heavily dependent on oil as a source of fuel. Cars run on oil. Homes are heated by oil. Oil is used to make a variety of products that are used on a daily basis. Many countries rely significantly on foreign sources of oil. There is also considerable uncertainty concerning how much oil is under the surface of the earth and how long that supply will last. If the supply suddenly runs out, the impact on the food system is undeniable. “After cars, the food system uses more fossil fuel than any other sector of the economy – 19 %. And while the experts disagree about the exact amount, the way [people feed themselves] contributes more greenhouse gases to the atmosphere than anything else [they] do – as much as 37 %, according to one study” (Pollan 2008). Additionally, Michael Pollan claims that dependence on foreign oil sources has made citizens in the United States more vulnerable, “For nations that lose the ability to substantially feed themselves will find themselves as gravely compromised in their international dealings as nations that depend on foreign sources of oil

presently do. But while there are alternatives to oil, there are no alternatives to food” (Pollan 2008).

Food-Borne Illnesses: Food-borne illnesses have been a growing problem with the centralizing of American food production. The Center for Disease Control’s most recent statistics about food-borne illnesses are from 2011 and they “estimate that each year roughly 1 in 6 Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases” (CDC website 2012). The CDC currently divides food-borne illnesses into two categories: known food-borne pathogens (which includes 31 different pathogens that are known to cause illnesses) and unspecified agents (which includes chemicals, known agents that have not been proven to cause illness, agents that have not been identified, and other substances “whose ability to cause illness is unproven”). The top 5 pathogens that cause the most illnesses in the United States are norovirus, salmonella, *Clostridium perfringens*, *Campylobacter* spp., and *Staphylococcus aureus* (CDC website 2012).

Regaining Lost Skills: Many writers and food activists have commented about lost domestic skills. Since the time of the Industrial Revolution, households have relied upon men working away from the home, and as this increased, the household’s demand for products made outside of the home increased (Hayes 2010). As the household shifted from being a unit of production to a unit of consumption, many of the traditional skills had by housewives have been lost. Skills like gardening, canning and preserving, cheese making, sewing, and even carpentry and repair work around the home have been outsourced to industrialization. As Shannon Hayes notes, “The industrial revolution brought changes to the family hearth as well” (Hayes 2010). Industrialization provided commodities like stoves and shoes, but in order to afford these things, men needed to work outside the home. And the more time outside the home led to men being freed of household tasks but also led to the need for a consumer economy in which the man of the family “needed to know...how to make salable product[s] or keep a job to pay cash for his family’s necessities” (Hayes 2010).

Factory work provided cash to buy commodities rather than make them. Some commodities (like electricity) eliminated the need for others (like candles), and others, like home-canned food, were exchanged for store-bought similar products. According to homesteading philosophy, the path to a simpler life, one freer from consumerism and dependency, includes regaining these lost skills.

Environmental Concerns: Many of these concerns are linked to a dependence on foreign oil, but there are also growing concerns about other environmental impacts of an industrialized and centralized food culture. Factory farms, or CAFOs (Concentrated Animal Feeding Operations), bear the brunt of much scrutiny over their environmental impact. As Michael Pollan claims, “if taking the animals off farms made a certain kind of economic sense, it made no ecological sense whatever: their waste, formerly regarded as a precious source of fertility on the farm, became a pollutant – factory farms are now one of America’s biggest sources of pollution” (Pollan 2008). CAFOs create a lot of waste; animals kept in confinement create a lot of waste that creates a lot of pollution. Additionally, the inefficiency of raising animals fed on grain creates more waste.

The Ethics of Self-Sufficiency

Proponents of homesteading argue that they are able to save energy, minimize transportation costs (and therefore minimize oil use and reduce carbon emissions), provide healthy home-cooked foods for themselves and their families, and create a home atmosphere that is not based on consumerism (Seymour 2003). Dependence on foreign sources of energy is eliminated if one creates it oneself through the use of solar panels, wind turbines, etc. Activists like Seymour claim that these actions benefit the commons and thwart the effects of the tragedy of the commons. For instance, if people are able to reduce their own pollution through energy conservation and alternative methods, then they will promote the reduction of pollutants overall and promote clean air, water, and soil (Seymour 2003). Similarly, if they are able to reduce their transportation costs by

walking and cycling more, then the same purposes of promoting less pollution are served. Additionally, if citizens are not reliant on getting their food from other distant places, then they will reduce the amount of oil used to feed themselves and also the amount of pollution in the water, soil, and air. Having more control over what one eats by growing, raising, and producing it oneself, one is better able to have healthier foods but also, in many cases, tastier ones (Seymour 2003).

Critiques of Homesteading

Most concerns about homesteading stem from problems had by suburban and urban dwellers. There are certainly concerns about how feasible it is for a person or family to homestead in the suburbs or urban areas. Growing one's own food on a small patio space or in containers is quite limiting and will not produce enough for one, or one's family, to become self-sufficient. Additionally, many cities have ordinances forbidding homeowners from activities like beekeeping or raising chickens, which limits the amount of food one can produce for oneself.

Homeowners in the suburbs or urban areas may also face concerns from neighbors over the unsightliness of, for instance, having a wind turbine in one's backyard; utilizing a material like bubble wrap on one's windows during the winter, as some homesteaders do (Coyne and Knutzen 2010); or growing a vegetable garden in one's front lawn instead of having a usual, grass-covered front lawn. Neighbors may fear that their own homes will lose property value by being next door to or in the same vicinity as homesteaders. Coyne and Knutzen offer some troubleshooting on this matter, suggesting that if one wants to do away with one's front lawn, then the subsequent garden must be a "show piece" to avoid consternation from neighbors (Coyne and Knutzen 2010).

Although the feasibility of homesteading in the suburbs or urban areas is a concern, there are still many measures an individual or family can take. One can grow some herbs or produce in containers. Fruit trees also can be grown up against fences or

walls (Coyne and Knutzen 2010; Seymour 2003). If all else fails, many suburbs and cities offer community gardens where participants can secure a plot of land to plant fruits and vegetables.

Summary

Homesteading is not for everyone. It is difficult and requires a lot of planning, time, and commitment, as well as land (in many cases). However, with concerns about the use of oil, food-borne illnesses, and dependency on others to create most of what is consumed, it is an alternative to consumerism and reliance upon others for one's food.

Cross-References

- ▶ [Biodynamic Agriculture](#)
- ▶ [Climate Change, Ethics, and Food Production](#)
- ▶ [Farms: Small Versus Large](#)
- ▶ [Local and Regional Food Systems](#)
- ▶ [Sustainability of Food Production and Consumption](#)
- ▶ [Urban Agriculture](#)

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Horticultural Therapy

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Synonyms

Garden therapy; Social horticulture; Therapeutic horticulture; Vocational horticulture

Introduction

Horticultural therapy is the practice of using horticultural activities for human healing and rehabilitation. Reference to the healing power of gardens and nature can be found as far back as ancient Greek times and through to recent times. In the United States, earliest articles published regarding the value of horticulture and gardening to human health are from the 1800s.

This entry will present the historical background of the profession of horticultural therapy in the United States, mention the key people in establishing the profession, define horticultural therapy, review the theoretical framework, and consider the future of the profession.

History

Treatment, rehabilitation, and/or residential care of individuals with disabilities during the 1800s up to around the 1950s often relied on agriculture as a major part of the facility. However, the farm was important for providing food to the facility and work on the farm was not intended as treatment but rather as a way for those individuals who could not pay to be at the facility to earn their room and board. It was the observation that those individuals who were required to work actually progressed toward return to the community faster that led to the recognition that staying occupied with responsibilities actually expedited rehabilitation. This in turn led to the development of occupational therapy and all subsequent allied activity therapies.

Dr. Benjamin Rush, a professor of the Institute of Medicine and Clinical Practice at the University of Pennsylvania and considered to be the father of American psychiatry, wrote in his book *Medical Inquiries and Observations Upon Diseases of the Mind* published in 1812 that “Man was made to be active. Even in paradise he was employed in the healthy and pleasant exercises of cultivating a garden” and that “agriculture by agitating the passions by alternate hope, fear, and enjoyment, and by rendering bodily exercise and labour necessary, is calculated to produce the greatest benefit” (Rush 1812). From its opening in 1813, patients at the Friends Asylum for the Insane in Philadelphia, Pennsylvania, worked in the vegetable gardens and fruit tree plantings. When Pontiac State Hospital in Michigan opened on 300 acres, it made extensive use of farming and dairy projects. However, production was the chief goal, and any therapy these patients received was a fortunate by-product. Dr. Thomas Kirkbride, superintendent of the Pennsylvania Hospital for the Insane and founder of the American Psychiatric Association, encouraged patients to work in the gardens or shops to aid recovery in his book *On the Construction, Organization, and General Arrangements of Hospitals for the Insane with Some Remarks on Insanity and Its Treatment* (Kirkbride 1854).

The earliest articles published in the United States indicate a broad view of benefits to be gained from gardening from helping mental patients to easing the stressful lives of the urban poor and as an aid in teaching mentally handicapped individuals. In *Darkness and Daylight or Lights and Shadows of New York Life* (Campbell et al. 1895), the impact of flowers on the poor, the infirm, and prisoners is described. In the *Journal of Psycho-Aesthetics*, E.R. Johnston (1899) writes: “In the garden every sense is alert. How the eye brightens at the masses of gorgeous color and the beautiful outlines – how many things, hot and cool, rough and smooth, hard and soft, and of different forms are to be grasped and held by trembling uncertain hands whose sense of touch is hardly yet awakened.”

In the United States, the significant growth of occupational therapy (OT) programs in Veteran

Hospitals at the conclusion of World War II was really the impetus for the beginnings of the profession of horticultural therapy. Between 1920 and 1940, most books on OT mentioned gardening (Sullivan 1979). In 1936, the Association of Occupational Therapists in England formally acknowledged the use of horticulture as a specific treatment for physical and psychiatric disorders (McDonald 1995). Milwaukee Downer College, the first college to award a degree in occupational therapy, was also the first institution of higher learning to offer a course in horticulture within the occupational therapy curriculum, in 1942. After 1940, garden therapy was considered a separate treatment, and the first use of the term horticultural therapy was used by Ruth Mosher Place in 1948 (Olszowy 1978).

In 1952, the first weeklong workshop in horticultural therapy was offered at Michigan State University by Dr. Donald Watson and Alice Burlingame, a psychiatric social worker. This followed with the first master's degree program in horticultural therapy for occupational therapists. The first Master of Science degree in horticultural therapy was awarded by Michigan State University to Genevieve Jones, an occupational therapist, in 1955. The first book in horticultural therapy, *Therapy through Horticulture* by Burlingame and Watson, was published in 1960 (Burlingame and Watson 1960). Working under Dr. Karl Menninger from 1946 to 1953 at the Menninger Clinic, Topeka, Kansas, Rhea McCandliss became one of the first professional horticultural therapists.

The next significant steps occurred in the early 1970s with the establishment of university programs and creation of a professional association. In 1972, Kansas State University, with the cooperation of the Menninger Foundation in Topeka, Kansas, began an undergraduate curriculum in horticultural therapy (Odom 1973). Several other universities followed suit. The University of Maryland awarded a Master of Science in Horticulture for work by P.D. Relf in Horticultural Therapy in 1972 and PhD in 1976. In 1973, Clemson University offered a graduate degree in horticultural therapy (HT) and Michigan State University started its undergraduate horticultural

therapy option in horticulture, which included 12 weeks of practical training at the Clinton Valley Center, formerly Pontiac State Hospital.

In 1973, the National Council for Therapy and Rehabilitation through Horticulture was formed to promote and enhance the profession as a therapeutic intervention and rehabilitative medium. It became the American Horticultural Therapy Association (AHTA) in 1987. Annual conferences began in 1973. Professional registration was established by the AHTA in 1975 based on a peer group review of qualifications. In 1985, the AHTA approved a core curriculum largely modeled after the Kansas State University curriculum. The *Journal of Therapeutic Horticulture*, the professional publication of AHTA, has been produced since 1986.

Volunteers have also had an important role in the development of horticultural therapy. Volunteers and members of the National Council of State Garden Clubs assisted occupational therapists in using plants and gardening activities in their therapy and rehabilitation programming, particularly following World War II. In 1951, the National Council of State Garden Clubs named horticultural therapy as one of the major objectives of member clubs, which it remains today (Simson and Straus 1998). Master Gardeners, another group of volunteers, are university-trained and serve as educators in their communities with primary emphasis on home gardeners. When the Master Gardener program began in the mid-1970s, its focus was primarily directed at diagnosing plant problems and offering solutions. While still a major focus, Master Gardeners now assist in a variety of educational programs including programs regarding the welfare of the youth, senior citizens, and persons with disabilities. Research on the role and impact Master Gardeners have in horticultural therapy began to be reported in the 1990s (e.g., see Flagler 1992; Kafami 1997; Marshall 1997).

Defining Horticultural Therapy

The definition of horticultural therapy lends itself to either brief discussion or endless debate,

depending on who is having the conversation. Definitions range from the simple (plants make people feel better) to the complicated (the use of plants by a trained professional as a medium through which certain clinically defined goals may be met). Given this broad spectrum, several other terms have been proposed in an effort to make distinctions along the spectrum, with limited success. For example, some agencies and associations use therapeutic horticulture to distinguish between programs with a predefined clinical goal (horticultural therapy) and those directed toward improving well-being in a more generalized way (therapeutic horticulture). Other examples are social horticulture and horticulture well-being. Unfortunately, these terms (and many more) are often used interchangeably so rather than aiding in defining the profession it has fostered confusion.

The following definitions are from primary sources for the profession of horticultural therapy today.

While there are a growing number of print publications on horticultural therapy, there are a limited number of university-level textbooks on the subject. The definition from *Horticulture as Therapy: Principles and Practice* (Simson and Straus 1998) is:

Horticultural therapy is a process through which plants, gardening activities, and the innate closeness we all feel toward nature are used as vehicles in professionally conducted programs of therapy and rehabilitation.

The American Horticultural Therapy Association (AHTA) is the only national organization for the promotion and development of HT programming in the United States. The definition from AHTA is (www.ahta.org):

Horticultural therapy is the engagement of a person in gardening-related activities, facilitated by a trained therapist, to achieve specific treatment goals.

Dr. Diane Relf, professor emeritus at Virginia Tech University, was one of the founding members of AHTA and spent her career defining and promoting the practice of HT through her research and work. Her definition is (Relf and Dorn 1995):

There are four elements that are essential for an activity to qualify as horticultural therapy if it is to be considered a profession eligible for the same status as other caring professions.

- A defined treatment procedure that focuses on horticultural or gardening activities
- A client with a diagnosed problem who is in treatment for that problem
- A treatment goal that can be measured and evaluated
- A qualified professional to deliver the treatment

The Horticultural Therapy Institute is a private, nonprofit organization that provides educational programs in HT. Rebecca Haller is the director and along with Christine Kramer are editors of a book titled *Horticultural Therapy Methods – Making Connections in Health Care, Human Service, and Community Programs* (2006). Their definition of HT is:

Horticultural therapy is a professionally conducted client-centered treatment modality that utilizes horticulture activities to meet specific therapeutic or rehabilitative goals of its participants. The focus is to maximize social, cognitive, physical and/or psychological function and/or to enhance general health and wellness.

Kansas State University is considered a leader in higher education in horticultural therapy. The following definition is from the K-State Study Guide *Horticultural Therapy* which is a promotional piece provided to perspective students:

Horticultural therapy is a process directed by a horticultural therapist using flowers, fruits, vegetables, and ornamental plants to provide people with social, psychological, physical, and intellectual benefits.

The Chicago Botanic Garden is considered a leader in horticultural therapy program development and delivery as well as education. The definition from CBG is (www.chicagobotanicgarden.org):

Horticultural therapy is the professionally directed use of plant, gardening, and nature activities for the purpose of restoring the physical and mental health of its participants.

A close study of these definitions demonstrates some agreement as well as differences among the leading individuals, associations, and institutions in horticultural therapy.

People-Plant Interaction

The philosophical basis of HT is that all humans have a basic need for contact with nature and that this contact will have a positive influence on them. The biophilia hypothesis, the functional-evolutionary theory, and the psycho-evolutionary theory are often cited to support this philosophy. E.O. Wilson's biophilia hypothesis (Kellert and Wilson 1993) states that humans have an innate relationship with the environment and our responses too and relationship with the environment are biological. Kaplan's functional-evolutionary theory (Kaplan and Kaplan 1989) and Roger Ulrich's psycho-evolutionary theory (1983) further explain the healing influence of environments on human beings. Both hypothesize that restorative environments are settings where recovery is associated with reduction of stress and that the benefits of contact with landscapes include a wide range of positive responses, such as preference, and/or reactions related to functioning and well-being. Both theories are based on Wilson's evolutionary perspective.

Considerable anecdotal reports and practical experience show the possible benefits of working with plants in many different settings. Research findings and case studies highlight the positive cognitive, social, psychological, and physical outcomes of nature and gardening. Reported benefits include social integration; increased self-confidence, self-esteem, and concentration; improved health; reduced stress and mental fatigue; and learning of practical skills, structure, and routine (for recent reviews, see Sempik et al. 2003; Gezondheidsraad 2004; Elings 2006). While the number of research publications continues to grow, most of the research to date is purely descriptive and contains little, if any, actual quantitative or qualitative data. Little is known about the mechanisms behind HT and evidence is weak due to the methodological limitations of many of the studies. Additionally, many of the studies report on benefits from exposure to nature with non-patient groups rather than active involvement in horticultural activities led by

a professional therapist with patient groups. However, there is now sufficient evidence to the efficacy of people-plant interaction for prevention and treatment to justify a serious research effort.

Considerations for the Future

Many allied health therapies, such as recreational therapy, music therapy, and art therapy, emerged following WWII similar to the horticultural therapy profession. While these related allied therapies have been successful in becoming established health professions, horticultural therapy is still referred to as an emerging profession. A comparison of these professions suggests many possible reasons why horticultural therapy lags behind the other professions (Shoemaker 2002). Continued validation and growth of the horticultural therapy profession is critically needed through universal standards for clinical practice; defining and communicating entry level skills and educational attainment; research evidence that can inform the practice of horticultural therapy; and established collaborations between practitioners, academicians, and research scientists.

Summary

Awareness of the healing power of nature is closely linked to the development of human civilization and agriculture. The profession of horticultural therapy emerged following World War II and is supported by this historical awareness. This entry has provided a brief history of the profession, the theoretical framework and definitions for the practice, and the current limitations to the profession.

Cross-References

► [Urban Agriculture](#)

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Hospitality and Food

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Synonyms

Generosity; Entertainment; Liberality; Welcome

Introduction: The Archetypes

Humans need food and shelter. Humans also often find themselves in situations when they must depend on others for that shelter and food. They may be traveling or displaced by emergency, war, and natural disaster. As a result, hospitality, the provision of food and shelter to strangers, is a universal human theme. In the Western tradition, it features as central in two foundational narratives: the *Bible* and Homer's *Odyssey*. Practices and mores from Africa, Asia, pre-Columbian America, and Arab cultures all make of hospitality an honored and prescribed activity. When present, it signals a well-ordered, civilized, properly upright community. When absent, it signals offensive, vulgar behavior. As a focus of attention and prioritization, it tended to

be more central in the pre-Modern world. Cultural and intellectual changes altered its meaning and role during the Modern era (1500–1900). Still, it remained a constant point of reference and has occasioned renewed attention in the early twenty-first century.

The code of hospitality's lingering significance was made evident in an early film, Buster Keaton's 1923 comedy *Our Hospitality*. This movie was based on the Hatfield-McCoy feud. A young man, having lived in the city, travels back to reclaim his deceased father's country property. Along the way he falls in love. The young woman brings him home. At that point, her relatives realize that he belongs to the other clan. The family members are honor-bound to kill the enemy. However, as a guest in their home, they are also forbidden from harming him. Since all restraints disappear once he steps out the door, the entire setting presents a set of quandaries that enhance the comic possibilities. These possibilities make sense only because of a background understanding that goes back deep in time: the obligations associated with hospitality are absolute.

A contemporary Internet search of "hospitality" reveals something quite different. Far from being considered a virtue central to living a good life, the primary context has become an economic one. "Hospitality" now means, first and foremost, the "hospitality industry." Within this industry, the guest-host relationship is understood as a market exchange. In this way, the early twenty-first century is an exception. Although an economic dimension was always present, even if it involved simply the cost of feeding a guest, that facet tended, in the past, to be more peripheral than central. Archetypal stories from literature offer the major resource for this alternative, more traditional, take on hospitality.

Some stories from the *Bible* and Homer's *Odyssey* provide paradigmatic cases. Whereas the tale of Sodom and Gomorrah has, since the Middle Ages, been understood as an account of sexual license, the main evil is really failing the obligation of hospitality. Lot is the upstanding citizen who offers food and shelter to visitors (actually angels in disguise). The other

townspeople deserve punishment because of their failure to properly welcome the strangers. For the *Odyssey*, an important background context involves the chief god Zeus. One of his most important titles is *Zeus Xenios*, Zeus, protector of strangers. Throughout the *Odyssey*, civilized, god-fearing people are easily identified by a key trait: they are hospitable. One model scene involves Menelaus and Helen entertaining Telemachus, the son of Odysseus. Before even asking his name, they welcome him to their home and provide food and shelter. At the other, uncivilized, extreme is Polyphemus, the Cyclops. Rather than greeting his guests by offering food, he first asks their names. Eventually, instead of providing food for them, he makes of them food for himself.

The great archetypal story of hospitality is the tale of Baucis and Philemon. It is found in the *Metamorphoses* by the Roman poet Ovid (43bce–18ce). Baucis and Philemon are wife and husband, poor and old. Into their community come two gods, Jupiter and Mercury. Following a common theme, they are disguised as poor beggars. The official word for this is "theoxeny," a god (theos) pretending to be a stranger (xenos). The villagers mostly slam their doors in the faces of the supplicants, another common theme. Not Baucis and Philemon. They open their door to the guests and hasten to make them feel comfortable, going so far as offering to slaughter their only goose for a meal. The gods, pleased, reward the elderly couple.

Lest anyone think that all hospitality literature is filtered through rose-colored glasses, there are plenty of alternative stories. In addition to the good host/hostess, another paradigm shows up regularly: the bad guest. Outsiders arriving on a doorstep are not always well intentioned. The seventeenth century French playwright Molière seemed especially sensitive to this. Like Keaton, he favored comedies, and like *Our Hospitality*, he built stories around guests. His guests, though, were no innocents. In *Amphitryon* he revives the two guests from Ovid's story. Only in this case Jupiter comes off as a fully human, randy abuser of his powers. Lusting after a lovely young bride, he develops a sure-fire plan of seduction.

Knowing her husband (the *Amphitryon* of the title) is off on military service, he disguises himself as the husband. The unwitting bride welcomes him with open arms.

With his more famous play, *Tartuffe*, Molière does something similar. In this case there are no disguised gods, just a hypocrite who is a good actor. Tartuffe is the kind of guest who does not at all appreciate the kindnesses visited on him. Instead he is scheming to dispossess his host in various ways: plotting to seduce both the host's wife and daughter and plotting also to take over the owner's home and belongings.

Hospitality and Ethics

Such stories suggest that when simple questions are asked about hospitality, the answers cannot be so simple. This is what makes hospitality both attractive and challenging when it comes to ethics. Traditionally, the ethical code associated with hospitality is both strong and rigid. The stranger must be welcomed. Food and shelter must be provided. In practice, there is always both flexibility and wariness. Bedouins, for example, extend the guest's welcome only through the time (three or so days) that the initial shared food would work its way through the body. The absolute claim of hospitality is tempered by practical considerations.

The Latin term *hostis* indicates another issue, the "Tartuffe" problem. The word *hostis* can mean both enemy and stranger. Will the stranger prove to be friend or foe? The answer is not always evident. Humans often seek an ethics that avoids personal responsibility and an ethics that will provide fixed rules or fixed procedures to follow. Responsibility, by contrast, involves assuming the liability for some individual, context-sensitive response. Hospitality can play an important role in dealing with ethics because, as the ambiguous term *hostis* indicates, an easy, fixed sizing up of a situation is often not the case. Hospitality as a paradigmatic ethical case involves *both* a mandate – welcome the stranger – *and* a caveat: be wary. In the hospitality context, it is hard to avoid some dimension of personal

input and judgment when attempting a proper response to surrounding conditions. The case of hospitality is one within which there will always be risks associated with the combination of obligations and uncertainties.

Such complications are reinforced when examining the etymology associated with another Latin word. *Hospes*, like *hostis*, has a double meaning. It could be either "guest" or "host" depending on the context. To be a *hospes* signals first and foremost to be someone participating in a particular relationship. The use of a single, specifically ambiguous term, rather than two clearly separable ones, indicates how it is the relationship that takes priority. "Host" and "guest" are flexible because the roles within the general relationship can, in various circumstances, be inverted.

Hospitality epitomizes the ethical situation because it regularly involves unavoidable tensions. There is, first of all, the question of whether individuals will accept the traditional mandate of providing hospitality. If the answer is yes, the next issue is how to ensure that this is best put into practice. Then, even if the obligation is assumed, there is the "Bedouin question" regarding the degree and duration of hospitality. There is also the "Tartuffe" question of whether this particular stranger should serve as an exception to the general rule. As a result, hospitality exemplifies three important concerns relating to ethics. First, whatever action is undertaken can be followed by the question "is it good?" This is so even if the action in question obeyed to the letter some ethical dictate. Second, in the lives of complicated creatures like humans, a particular obligation never stands alone. The situation in which humans find themselves may be one in which various goods and virtues conflict. Virtues and duties are always plural. Finally, proper ethical comportment is a thread woven together by combining good sense, prior experience, guiding principles, duties, communal practices, well-developed habits, and practical judgments.

What emerges from such tensions is an important lesson at the intersection of hospitality and ethics. "Casuistry," now a discredited term, was once honorific. It identified the complicated

process appropriate for dealing with complicated situations. At least since the time of René Descartes (1596–1650), philosophers, resisting casuistry with its fuzziness, knotty distinctions, nitpicking details, and multifaceted sensitivity to situation, have sought instead clarity and distinctness. Clarity and distinctness, in turn, require a kind of policing, the kind that often prizes purity and the construction of rigid boundaries. In such a context, strangers should fit the neat category of either friend or foe. Such neat categorizations, though readily available in abstract thought, are less prevalent in concrete life situations. Wherever opposites can perhaps intersect, as with the dual meaning of *hospes*, and wherever evidence for removing uncertainty is imperfect, as with *hostis*, there will be responsibility, risk, and anxiety. Several strands in philosophy, especially strong during the Modern epoch, sought to allay responsibility and anxiety. The hospitality/ethics connection is important because it provides a paradigmatic case that can never be free of the responsibility/risk/anxiety axis.

In this way the hospitality/ethics intersection, when taken seriously, brings with it certain implications. Some revised version of “casuistry,” difficult thinking about individual cases, has to be undertaken. In addition, two non-algorithmic themes made prominent by the ancient philosopher Aristotle (d. 322) also come to the fore: (a) living a good life involves finding the right middle ground and (b) in seeking such ground it is important to use as models, not fixed formulas, but rather experienced individuals, people with practical wisdom.

The stranger represents a question mark, an initial fuzziness. It is this kind of initial enigma which makes the ethics/responsibility/risk/anxiety chain impossible to avoid. There are always strangers, wanderers, the homeless, and the hungry. One possible response: follow the example of Baucis and Philemon’s neighbors and turn the strangers away. If the visitors turn out to be Tartuffe, then such would be the better decision. Another possible response: follow the example of Baucis and Philemon by opening our doors and sharing our tables? If the stranger is, to draw on another paradigmatic story, *Babette*, from Isak

Dinesen’s *Babette’s Feast*, then electing this option is the more commendable one. It is because hospitality represents a constant and open call for one risky response or another that it intersects necessarily with ethics.

Hospitality: Past and Present

In the pre-Modern world, hospitality was often understood in a wide sense that implicated various areas of human life. For the ancient Greek lawmaker Solon (638–558 bce), the notion of eating together was actually considered an important component of a healthy body politic. Solon prescribed common eating on a rotating basis for citizens. Those who sought constant access to the free meals were derided as moochers and gave rise to the pejorative sense associated with “the one who eats next to us,” the “parasite.” The opposite behavior, rejecting the state’s hospitality, also deserved a reprimand. Those who refused to share in communal meals were accused of failing in public-spiritedness. Not only was accepting the hospitality of the community by eating in the central refectory a regular obligation, Solon’s laws themselves were on display there.

The Athenian leader Pericles (495–429 bce) highlighted the importance of hospitality in his famous *funeral oration*. He proclaimed that a sign of Athens’ greatness was its openness to strangers, even as he admitted the tension associated with such hospitality: “We throw open our city to the world, and never by alien acts exclude foreigners from any opportunity of learning or observing, although the eyes of an enemy may occasionally profit by our liberality. . . .”

During the Enlightenment, when intellectuals dreamed of a new era marked by continuing progress guided by the light of reason, the approaches to hospitality took a different turn. One of the most fascinating texts of the Enlightenment was the famous eighteenth-century *Encyclopédie*, which, as its name indicates, was an attempt to gather in a multivolume work all the most important knowledge that was available. The *Encyclopédie* continued the ancient tradition

of praising hospitality. As a product of its day, it did so with several important twists. The first was to move “hospitality” from a virtue to a duty. The second was to emphasize hospitality, not for itself, but as a vehicle for providing lessons of importance regarding other matters.

Both “virtue” and “duty” are important terms in the discourse of ethics. Both indicate an acknowledgement that comporting oneself in a particular manner is important. They differ in that a virtue has to be woven into one’s character. It is a habitual mode of acting, one that plays itself out as a kind of second nature resulting from character development. In other words, the virtuous activity is not felt as an external imposition. A “duty,” by contrast, need not be that which emerges comfortably from character. There is recognition of some activity which must be undertaken, but it need not come naturally or habitually. Indeed, there may be recognition of how important it is to do the right thing even if it goes against habituated inclinations. The *Encyclopédie*, true to its time, tended to identify hospitality with duty. Its entry on “duty” gave as examples “the duties of compassion, of liberality, of beneficence, of recognition, of hospitality. . . .”

When it came to object lessons making use of hospitality, the most important one had to do with a “golden age” attitude toward what was thought to be a more innocent past. For example, the entry “Canadians, Philosophy of” was really about the Hurons. The first impression of the “savages,” the article noted, was “unfavorable.” However, what eventually becomes evident is how “they are kind and affable, and toward foreigners and unfortunates, *they practice a charitable hospitality that puts all the nations of Europe to shame*” [emphasis added].

The last line indicates the second important change for the understanding of hospitality during the Enlightenment. Not only had it come to be considered a duty, but was to be used as a tool for propagating newer modes of thinking. In the specific case cited, hospitality was employed to mark a distinction between native peoples and Europeans. The former were envisioned as purer, less damaged, and closer to what was thought of as the “state of nature.” The latter were represented as

more corrupted, artificial, and inauthentic representatives of humanity.

One of the *Encyclopédie*’s main authors, Denis Diderot, also used hospitality in this way. His approach was fictional. It envisioned the contact between a European priest and natives of lands newly discovered by the Europeans. The French priest is made welcome by his Tahitian hosts. It is the content of the welcome that changes the usual pattern of hospitality. Whereas sharing shelter and food is typical, Diderot’s Tahitian host has another sharing in mind. As part of the welcome, he offers to the priest, while parading them naked, his daughters. It is not right, the host claims, to spend a night alone. It is also not right that his youngest daughter has yet to become a mother. Such an imagined encounter was meant, as was often the eighteenth-century case, to expose how “unnatural” was priestly celibacy and by contrast how “natural” was the expression of sexuality, freed of artificial social constraints.

While seeming to provide testimony about hospitality, such a story indicates rather how it had now moved to a kind of backdrop for other, more pressing issues. The story can actually be read as working in ways that conflict with hospitality. There is, first of all, the desire to impose a particular way of living on the visitor. In Diderot’s haste to criticize Europeans who have chosen artificiality in place of their authentic natural selves, he depicts a hospitality in which concern for the stranger falls by the wayside. The host might as well force forbidden food onto the guest. Second, the guest is being used as a way of achieving that to which the local family aspires: an infant for the youngest daughter. The guest, in other words, is being used as an instrument, a “means” as the Enlightenment philosopher Immanuel Kant would say, rather than an end.

Such a fanciful story-to-score-an-ideological-point helps focus on a fundamental issue – the need for discussions of hospitality to preserve a balance between two important dimensions: (i) actual empirical studies, as exemplified in ethological/sociological/historical research, and (ii) the general philosophical context within which the discussions take place. The latter

emerges most prominently in questions relating to the branch of philosophy called “philosophical anthropology,” the attempt to arrive at a successful generic description of the human condition. The Spanish-born American philosopher, George Santayana (1863–1952), identified an important shift in human self-understanding, one which is central to determinations about what hospitality involves and how central it is. The mind of Modern, i.e., post-Renaissance, humans, as he put it, was “a sedentary city mind,” not a “pilgrim mind.”

Hospitality was central for Homer’s characters because Odysseus was a wanderer. Bedouin hospitality is renowned because the Bedouin also are wanderers. Dante, definitely a pre-Modern, and living in a culture dominated by the humans-as-pilgrims theme, reserved the deepest circle of hell for those who were “traitors to their guests or host.” Pre-Renaissance Europe in general worked within a framework which thought of humans as wanderers. Within such a context, it makes sense that hospitality would be considered of central importance. People on the move need food and shelter. By contrast, in cultures for which the central understanding of humans is as homedwellers, such an emphasis fades to the periphery. The framework of philosophical anthropology takes on special importance here. Hospitality will be given a central role when humans think of themselves as inherently wanderers, strangers, and pilgrims. It will move more to the periphery when humans understand themselves as fundamentally homedwellers.

Hospitality: Optional Virtue or Ethics Itself?

With regard to the ethics/hospitality relation, two extremes are represented by the philosophers Elisabeth Telfer (1936–) and Jacques Derrida (1930–2004). Telfer, reading the contemporary world realistically, reports that hospitality now falls under the heading of entertainment. It is a term most used in the context of entertaining friends. What comes to be central in such cases is reciprocity. Friends are involved in a series of

mutual exchanges, exchanges which weave and strengthen preexisting links. As such, it continues to be considered a virtue, but an “optional” one. If two circles were drawn, one representing hospitality and the other ethics, there might or might not be an overlap. Life is made more pleasant by entertaining friends. This should not be confused, however, with living a good life in the highest sense. Other virtues are more central and not optional. Words have meanings which emerge at particular places and times. Attempting some artificial extension of what is today called “hospitality” would involve simply stipulating artificial meanings. Friendship and the entertainment that accompanies friendship do make life more pleasant and happy. What should be avoided is confusing this kind of entertainment with the more important considerations involved in what it really means to live a good life.

At the other end of the spectrum, Jacques Derrida is categorical: “Ethics is hospitality.” Ethics, for him, is nothing less than an optimal mode of inhabiting the world. Such a habitation may, on the one hand, be characterized by the kind of border policing associated with wall-building and closing in on isolated communities. Or, it may involve a kind of openness and willingness to welcome the stranger who is genuinely other. This is the practice that most fully deserves the name “hospitality.” Here, Derrida goes beyond ordinary usage and does indeed stipulate a wider sense which he wishes “hospitality” to accommodate. For him, “hospitality” marks a certain mode of being in the world. Food is central, as it is when hospitality is understood primarily as entertaining friends. In this case, however, the prototype case becomes feeding the hungry stranger.

Hospitality: Contemporary Issues

The Telfer-Derrida polarity helps identify questions for researchers today. This is because the traditional privileging of hospitality was imbedded in a web of assumptions and values that have come to be questioned. John Winthrop, the Puritan leader sailing across the Atlantic in 1630,

continued to be rooted in a pre-Modern, biblical context. Prior to landing, Winthrop delivered a sermon which referred specifically to the hospitality of Abraham and Lot as described in the Bible. Winthrop began his sermon by identifying the human condition as one of differences. Some people will be wealthy, others poor, some powerful, and others in positions of submission. There are reasons for these differences and among them are "that every man might have need of other, and from hence they might be all knit more nearly together in the Bond of brotherly affection. . . ." Winthrop's continuing embrace of pre-Modern themes, including hospitality, when contrasted with the actual Puritan practices of failing hospitality with regard to nonconformists, well illustrates one contemporary challenge. If the pre-Modern context was so congenial to hospitality, so also was it congenial to rigid class distinctions, divisive religious affiliations, anti-democratic sentiments, and a general "us versus them" attitude. One important area for intellectual reconstruction then becomes asking whether hospitality can be re-prioritized apart from the kinds of social, political, ethical commitments with which it was often associated. Derrida seems to think so. Telfer would rather preserve the modern values while allowing hospitality a more modest role. Modernity tended to marginalize hospitality while it emphasized rights, democratic aspirations, economic freedom, and social mobility. Secularization and tolerance began to replace rigid religious affiliations. Hierarchies were challenged and egalitarianism came to predominate. This has now become the new context – a context in which, as emphasized by Telfer, hospitality, redefined, has moved from central to optional.

In such a setting hospitality cannot but be dislocated. It certainly cannot take on the central role to which Derrida's claim of hospitality-as-ethics assigns it: identifying hospitality as the deepest and most important way in which humans relate to their surroundings. Those who might want to follow Derrida's focus on hospitality must ask how much of the return to pre-Modern ways is a necessary accompaniment of this focus. At minimum, certain questions need to be

addressed. Some of the most prominent are the following:

Does ethics need an overarching good? Derrida's strong thesis seems to think so. Pre-Modern philosophy, in its Medieval version, at least, also answered "yes." The virtue in that case was love, *caritas*. Aristotle had made *eudaimonia*, human flourishing, play a similar role. Recently Charles Taylor has argued that any consistent mode of living requires what he calls "hypergoods," some general umbrella ideals which draw humans forward and justify the kinds of choices they make. Post-Modern thinkers tend, by contrast, to worry about those who would promote a single, ultimate good. They prefer to embrace an irreducible pluralism of goods, always somewhat in tension with each other. For them a claim like "hospitality is ethics," or parallel constructions like "justice is ethics," or "compassion is ethics" entails an oversimplification of a complicated situation.

Aligned with the first question is one about whether "hospitality" as an accepted good, whether "hypergood" or not, can be extended beyond human-to-human relationships. If hospitality is understood in the ordinary usage sense, as Telfer does, then the issue of dealing with nonhumans falls under a separate heading. If, on the other hand, Derrida's stronger thesis is taken seriously, the next step is to ask what hospitality can possibly mean when applied to the realm of animals, to that of plants, and to the inanimate components of the earth? In *The Odyssey*, hospitality is associated with the sharing of food. That means animals and plants have been either butchered or uprooted and transformed into edibles. Where is the place of hospitality here? Lest this issue of how hospitality is related to the nonhuman life seems artificial, Samuel Taylor Coleridge's *Rime of the Ancient Mariner* can serve as a corrective. The entire narrative is set forth because the mariner, violating the protocol of hospitality, killed the albatross.

There are also issues relating to the move away from Modernity and its central cluster of concepts: binary classifications, reductionism, social atomism, foundationalism, privileging of purity, and autonomy. Until a new cluster of

concepts can come to shape an alternative climate of opinion, it is not clear whether hospitality can/should take any prominent role. The major friend of hospitality, Derrida, tends to derive his inspiration from the philosopher Emmanuel Levinas (1906–1995) who, in turn, drew on decidedly pre-Modern biblical sources. If post-Modern ideas somehow allow for the reincorporation of older, pre-Modern notions, then perhaps the Derrida/Levinas initiative can take hold. Otherwise, the appropriate place of hospitality within a good life remains to be determined.

In general, once again, the question is whether hospitality can be revived within a context which is so alien to the ones in which it has traditionally been celebrated. Can hospitality be prioritized within democratic republics and their emphasis on majority rule? What is its place in societies that have become more and more secular? Can hospitality have any meaning in today's world dominated by digital relationships rather than face-to-face ones? Should immigration law be influenced by hospitality? Does hospitality as a virtue impose obligations on guests as well as on hosts? Can hospitality provide fresh perspectives for biomedical issues like euthanasia and abortion?

Such a cluster of questions takes on special urgency in a world where globalization encourages the movement of not only capital but people, one in which refugees (from disease, famine, weather disasters, war, economic devastation, oppression) continue to be a permanent part of the landscape and one whose economic system rewards those willing to engage in multiple relocations.

Summary

Hospitality, food, and ethics are closely intertwined. Wherever there are wanderers, strangers, and refugees, there are people in need of food and people who can feed them. Whether the latter take it upon themselves to do so provides the basic ethical issue. Hospitality is a universal human theme. In the Western

tradition, literature and religious texts have been the main mode of expressing its importance and nature. The meaning of hospitality has changed through time. Pre-Modern meanings differ from Modern (1500–1900) ones. Post-Modern attitudes remain as yet undefined. Two main ethical strands are present today: hospitality as an optional virtue (Elizabeth Telfer) and ethics as hospitality (Jacques Derrida).

Cross-References

- ▶ [Authenticity in Food](#)
- ▶ [Christianity and Food](#)
- ▶ [Derrida and Eating](#)
- ▶ [Extraterritorial Obligations of States and the Right to Food](#)
- ▶ [Food Ethics and Policies](#)
- ▶ [Hinduism and Food](#)
- ▶ [Islam and Food](#)
- ▶ [Jainism and Food](#)

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Human Ecology and Food

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Synonyms

Cancer on nature; Deep and shallow ecology; Ecology and ecologies; Ecology market; Food and cooperation; Human ecology; Human/environment relationships; Overpopulation

Introduction

The connection between human ecology and the great theme of food (and human nutrition) is immediately apparent: there is no other living being that changes the environment so radically for its own nutritional needs as the human being. It will perhaps be objected: every living creature tends to alter the ecosystem for their livelihood needs, and this is certainly true. The difference between the human beings and other species, however, is not so much a *quantitatively broader change* in nature (on a larger scale), but in a *qualitatively more profound transformation*: humans have the power to control and dominate

the natural world with technology, as Francis Bacon argued (Merchant 2006, p. 518). It is precisely because of this human power that the need to rethink the relationship between humans and their environment arises, starting from the conceptual tool of human ecology – a very recent discipline that has as its theme the impact of the human species on the ecosystem.

The issue of food is such a special interest in human ecology because it intercepts major ecological issues (pollution, changing the landscape, the use of harmful substances, population overcrowding, the waste of natural resources, etc.) and can be a source of resolutions for the same being that causes such problems: the human being.

In this sense, the approach of human ecology is radically different from that of the more famous deep ecology, which “explains the ecological crisis as the outcome of the anthropocentric humanism that is central to the leading ideologies of modernity” (Zimmerman 1994, pp. 1–2) and states that “man could be described as a highly destructive parasite who threatens to destroy his host – the natural world – and eventually himself” (Bookchin 2004, p. 23); in this regard, human beings can easily be seen as a “cancer on the planet,” because of their destructive power, as effectively expressed by Dave Foreman: “Our environmental problems originate in the hubris of imagining ourselves as the central nervous system or the brain of nature. We’re not the brain, we are a cancer on nature” (Foreman 1990, p. 48).

At the same time, however, human ecology also distances itself from shallow ecology, which, by supporting the unconditional superiority of man over other living beings, interprets nature as a supply of more or less finite resources. In this regard, Warnick Fox writes:

Shallow ecology views humans as separate from their environment. Figure/ground boundaries are sharply drawn such that humans are perceived as the significant figures against a ground that only assumes significance in so far as it enhances humans’ images of themselves *qua* important figures. Shallow ecology thus views humans as the source of all value and ascribes only instrumental (or use) value to nonhuman world. (Fox 2003, p. 252)

Food is an appropriate issue by which to assess several ecological theories, including human ecology, because food highlights the tremendous environmental impact of human activities (agriculture, grazing, deforestation, etc.). However, before going any further in this direction, it is first necessary to solve preliminary definitional difficulties regarding the discipline of human ecology and situate human ecology in the broader context of the so-called change of perspective of ecology.

Human Ecology: Definitional Difficulties

The difficulties of defining the discipline of human ecology probably arise because of the imprecise epistemological status of ecology itself.

Ernst Haeckel devised the concept of ecology in 1866 to indicate the study of the relationships between organisms to each other and to their environment. After this concept was slowly affirmed by academics and disclosed to the public, ecology began to give rise to different “ecologies” in the beginning of the twentieth century, each of which investigated a smaller and more specific portion of reality (as opposed to being a global science). In this regard, nowadays it should be more correct to speak of “ecologies” in the plural and not just “ecology” in the singular: numerous specializations within ecological science have emerged with their own specific theoretical foundations. This phenomenon probably finds its own justification in the epistemological status of ecology in general: that discipline is defined as “interdisciplinary,” as it has as its object of investigation the totality of the natural world, an object so rich and varied that it generates questions that can be answered only through the contribution of several disciplines. It is also possible to attribute the birth of such “ecologies” to several causes: the need to respond to different problems with specific methods in a particular area of reality, the influence of different schools of thought on solutions to the same problem, the diversity of the questions posed about this reality, etc. Therefore, there should be

no surprise if ecology encompasses questions of biological, philosophical, sociological, physical, economic, or other natures.

“Ecology is the science of relationship between living organisms and their environment,” and, more specifically, “Human ecology is the study of human interactions with the environment” (Terry Rambo 1983, p. 1). Because of the uniquely profound ways in which humans modify their environment, human ecology is central among the different ecologies. human ecology has attained considerable practical relevance in our time; for example, it has contributed extensively to defining the criteria for urban projects and economic planning. human ecology has availed itself of the historical, geographical, medical, economic, and social changes that have helped to achieve a complete and articulated frame for the various human needs that once we considered only at a partial level from a variety of disciplines such as economic geography, hygiene, and epidemiology. Gerald Marten says:

In human ecology, the environment is perceived as an ecosystem. An ecosystem is everything in a specified area – the air, soil, water, living organisms and physical structures, including everything built by humans. [...] Although humans are part of the ecosystem, it is useful to think of human-environment interaction as interaction between the human social system and the rest of the ecosystem. [...] The social system is a central concept in human ecology because human activities that impact on ecosystems are strongly influenced by the society in which people live. Values and knowledge – which together form our worldview as individuals and as society – shape the way that we process and interpret information and translate it into action. Technology defines our repertoire of possible actions. (Marten 2003, pp. 1–2)

From one side, Marten – and with him most of the supporters of human ecology – tends to move away from a reductionist, scientist vision of the human/environment relationship. On the other side, however, he seems to retain a sociobiological perspective, which interprets mankind as a source of values and social experiences and, in this regard, which cannot exceed *the universal quantitative dimension* toward the affirmation of *the qualitative singularity* of every human individual – his uniqueness; the question

about the need to affirm the qualitative human singularity – which descends from human freedom – remains, so, open and unresolved (Bruckmeier 2013, pp. 229–234).

The possibility of avoiding Darwinian and sociobiologistic reductionism of human ecology is guaranteed only by a rethinking of human complexity through anthropological and philosophical instruments (Beltrão 1985) and, therefore, by a deeper reflection on the relationship between human beings and their environment and, furthermore, on the human being with himself.

The Change of Perspective of Ecology

The ecological revolution – or at least ecology understood as *Weltanschauung* or worldview – consisted of a radical change in thinking in which nature is interpreted as a dense texture or web of relationships:

Where modernity brought us the mechanistic or clockwork view of the world, the current transformation is bringing us the web view of the world, that is, the world as a dynamic, comprehensively entwined, co-evolving world. [...] In society, for example, the change is witnessed by the ecology movement. (Goerner 2000, pp. 91–92)

This revolution was carried out primarily by supporters of the movement of deep ecology (Devall and Sessions 1984), who believe that humans should be given the same dignity as other living beings since humans share their ontological status with them. In this way, as Luc Ferry argued, the ecosystem, or *cosmos*, deserves a higher rank of dignity than human beings, because, in the great chain of being, it is the “necessary condition” of everything: nature can get along without human beings, but not the contrary (Ferry 1995). This change of ontology results in a change of vision of reality: it is necessary to adapt one’s perspective to that of the whole ecosystem, since humans do not enjoy any privileged position within the ecosystem (i.e., anti-anthropocentrism). The transition from anthropocentrism to biocentrism thus marks a shift in values (and therefore a change of ethics): the salvation of the ecosystem and the

wealth of relationships (the web) that constitute it have a priority over the needs of the human being. The conclusion that one reaches in this context is extremely simple and summarized as follows: (1) the first principle of every living thing that moves is self-preservation; (2) the ecosystem has an ontological dignity superior to each single part of which it is constituted; (3) each part (including the species *Homo sapiens*) may be sacrificed for the salvation (or the well-being) of the ecosystem.

A Further Change of Perspective

human ecology was born in the second half of the twentieth century in opposition to this holistic and anti-anthropocentric trend. It is constituted primarily as a knowledge aiming to return the human species to the center of the moral universe and hoping to reconstruct the correct relationship of humans with themselves and with other species. Humans are not only a cancer on the planet, therefore, but also the possible cure for this disease; human ecology gambles on human beings and their ability to build and develop new solutions and not just to destroy what comes into their hands.

Building on a realist conception of humanity, which sees humans as combining egoistic concerns while simultaneously being deeply social, responsible, and caring, human ecology believes that we must start from the reconstruction of the human personality. The human impact on the environment, in fact, is nothing but a reflection of the way of being of humans: a great cultural impoverishment has, indeed, led to the desertification of nature. In this sense, the direction of analysis proposed by human ecology is opposite to that suggested by traditional deep ecology: the individual (man) to the system (the ecosystem) and never vice versa.

The solutions proposed in human ecology put emphasis on the freedom of the individual as a basis to create a more sustainable world and eschew the idea of restricting individuals’ freedom in the name of reducing their environmental impact:

In our concern to preserve freedom we ignore the long and painful struggle by which it was achieved and flaunt the safeguards our society has thrown about the dignity of the individual. In our desire to

give every individual an equal opportunity we have neglected to take advantage of the differences between individuals which should enrich our society. [...] We secure the best trainers we can for promising horses and dogs but allow our ablest students to idle through our school system. [...] We deplore the increase of juvenile delinquency while doing little to combat the idleness, lack of recreation, and the flood of evil printed material which probably contribute to it. (Sears 1954, p. 960)

If the human species is, in fact, the species which, more than any other, changes the environment that surrounds it, we should start precisely from this and attempt to heal humanity so that its relationship with other living species can become virtuous and non-harmful: human ecology therefore seeks firstly to work on individuals and on relationships among humans and then seeks to affect the relationship of humanity with the environment.

In light of this, the knowledge put forward by human ecology will be interdisciplinary and will aim to integrate their knowledge of “hard” scientific disciplines with those in the humanities to have a better overall understanding of the dynamics that affect human beings and that motivate them to act in certain ways. For this reason, “human ecology is concerned not only with the present but with the past. [...] And since the present and future of any community are expressions of its past, we may expect the study of archaeology and history to have a practical bearing on the critical question of man’s future” (Sears 1954, p. 960). The combination of two different types of knowledge (that of the more scientific ecology and that of the humanities) will enable the discovery of the human dimension that is essential for more sustainably preserving our planet: “Who can better analyze and explain such conditions than the ecologist, trained as he should be to read the landscape? But he must be equipped to analyze the human community and understand the forces at work within it as well” (Sears 1954, p. 963).

Why (Human) Ecology Must Deal with Eating and Food

Eating is a highly cultural activity. At the same time, eating has a huge impact on the

environment, both in terms of changes to the territory and in terms of atmospheric pollution. Furthermore, eating – including the production of food and the development of technical strategies to meet an increasingly sophisticated understanding of our nutritional needs – is an eminently human activity. In this sense, the theme of food is closely related to human ecology.

Of those outlined above, ecologists are most concerned with the impact on the environment arising from new human nutritional needs. Improvements in technology and science have made possible a better quality of life – think only of the phenomena of aging and overcrowding in populations, originating in the evolution in the biomedical field – but are also having a greater impact on the ecosystem of the human species; Sears, in the aftermath of the Second World War, wrote:

We are an explosion. For the first time in earth history, a single species has become dominant, and we are it. The power and intensity of our pressure upon environment is without precedent. [...] This also means increasing demand for space in which to live and move and increasing demand for food and other necessities from the space that is left. Man thus becomes his own rival, or rather the victim of his own rival needs. (Sears 1954, p. 959)

The issue of overpopulation (and the consequences arising from this issue, such as climate change and an increase in resources consumption) is among the most discussed topics in the field of human ecology:

Anthropogenic climate change, or climate change for short, is arguably one of the biggest problems that confront us today. There is wide agreement that climate change will affect the lives of all people around the world in areas such as food production, access to water, health, and the environment. Indeed, it has been estimated that millions could suffer hunger, water shortages, diseases, and coastal flooding as a result of global warming. (Liao et al. 2012, p. 206)

In terms of environmental impact, the issue of food production and associated territorial changes is of primary importance: the United Nations Food and Agriculture Organization found that almost 18 % of the world’s greenhouse emissions come from livestock farming, and more recent estimates indicate that livestock

farming accounts for at least 51 % of the world's greenhouse emissions. And the world's greenhouse emissions are expected to increase very dramatically. It has also been estimated that almost 9 % of human CO₂ emissions are a result of deforestation for the development of pastures, 37 % of anthropogenic methane comes from livestock, and 65 % of anthropogenic nitrous oxide is caused by fertilizer. There are, besides, considerable negative impacts on water availability and biodiversity. In order to have remarkable environmental benefits, we probably need to reduce the consumption of red meat, since a large amount of these grazing animals are meant for consumption (Liao et al. 2012, p. 207).

Although the problem is clearly identified, solutions are still very controversial. They can be condensed into four main types: (1) behavioral solutions (educational and training activities in the field of alimentation with low environmental impact), (2) market solutions (legislative and policy interventions that encourage the purchase, transport, and production of certain types of goods), (3) geo-engineering solutions (large-scale manipulations of the environment), and (4) human engineering solutions (manipulations of people to make them less harmful to the ecosystem). About the latter, which might be described as "post-human," Liao argues: "While reducing the consumption of red meat can be achieved through social, cultural means, people often lack the motivation or willpower to give up eating red meat even if they wish they could. Human engineering could help here. Eating something that makes us feel nauseous can trigger long-lasting food aversion" (Liao et al. 2012, p. 208).

Regarding the market solutions, an "anthropocentric-utilitarian" option is given within the scope of the liberal economy: the so-called ecology market (Anderson and Leal 2001). The philosophical assumption that motivates these solutions is that humans have a natural tendency to be moved by self-interest. The resolutions proposed by "ecology market" are configured as pragmatic, which are not based

on the enunciation of universal principles but on actual practices, starting with the rules of the market itself, that will make the market more sustainable. While the "ecology market" emphasizes positive stimuli related to prices, profits, entrepreneurship, and political environmentalism, it also proposes negative stimuli related to legislation and taxes. Far from seeking "zero impact," the "ecology market" aims to make "an impact with a positive sign"; to seek "win-win" solutions, advantageous to all economic, environmental, and social groups; and to do so starting from an authentically human dimension such as the need for private property.

A Model of Nutrition: Food Sharing and Cooperation

The speculations of human ecology on human nutrition (and on the environmental impact of human activities) often arrive at pragmatic solutions but often run aground when confronting ethical dilemmas that do not seem to allow optimal compromises: consider the well-known – but difficult to resolve – dilemma of "Feeding People Versus Saving Nature" (Rolston 2003).

One of the most reliable and efficient solutions to Rolston's dilemma offered by human ecology focuses on "Food sharing and cooperation" (Borgerhoff Mulder 2003). This approach focuses on the more general question: "Why do individuals give valuable resources away to others? To give or not to give is a special case of a more general dilemma: why do individuals engage in acts that incur personal costs and benefit others?" (Gurven 2004, p. 543).

The more general question is answered by appealing merely to cost/benefit calculations regarding the individual's own interests, without having to introduce metaphysical items:

Individuals give for two reasons. One is to get a benefit back. The other is to avoid a cost. "Cooperation" theories stress mutual benefits. "Conflict" theories stress costs. Hunters may give up part of their hunt because they get favours back, or because the recipients are stronger than they are and the hunting isn't as good anywhere else. (Betzig 2004, p. 561)

There are four main types of “food sharing” (Gurven 2004): (1) kin selection-based nepotism (KS), (2) reciprocal altruism (RA), (3) tolerated scrounging or theft (TS), and (4) costly signaling (CS). All of these models, albeit for different reasons, highlight as the common denominator the need for human beings to share their experiences or to share their own needs, and first among these is the one of self-preservation. In effect, if the Darwinian struggle for survival and the pursuit of utility at any cost will almost certainly lead to a loss of nature (without solving the problem of feeding *all* the people), perhaps cooperation and altruism can offer an effective solution to Rolston’s dilemma.

Human Ecology and Food: The Three Directions

The issue of food – even apart from belonging to the domain of sociology and behaviorist ecologies – is highly relevant for human ecology, the discipline that deals with the rediscovery of human nature.

The issue of food is central to human ecology because it intercepts in an exemplary manner the three directions of the human relationship: (1) the relationship that humans build with the environments in which they live (and thus, the impact of agriculture on the ecosystem, the consequences of their technological choices, the interventions that they decide to undertake, be they on a small or large scale, etc.); (2) the relationship that the individual human being interweaves with other human beings (i.e., the possibility of sharing needs, of devising shared solutions and appropriate policies, etc.); and (3) the relationship that every human individual builds in dialogue with himself or herself (the virtues that one can develop, the values that one discovers to be essential, the priority assigned to different goods, etc.).

It should be noted that denying the last dimension – i.e., the one that describes the relationship of each individual human being with himself or herself – means denying human ecology and, ultimately, supporting deep ecology or shallow

ecology, according to which humans are not seen as the solution to the current ecological crisis, but the cancer or the master of the ecosystem.

Summary

The issue of food is a special interest in human ecology – a very recent discipline, with an imprecise epistemological status – because it intercepts humanity’s relationship with the environment. Moreover, it brings to light many major ecological issues and finds a source of resolution for them in the same individuals that cause the problems: human beings. This approach is different from deep ecology, which sees human beings as a cancer on the planet: the solutions of human ecology depend on human beings and their ability to develop new answers, putting emphasis on the freedom of the individual as a basis for creating a more sustainable world. Eating is a cultural activity (and, in this regard, an eminently human activity) but with a huge impact on the environment: among other issues, overpopulation is widely discussed in human ecology. However, solutions are still very far away, although proposals can be grouped into four main types: behavioral solutions, market solutions, geo-engineering solutions, and solutions of human engineering. Among the most reliable and efficient solutions offered by human ecology is that of “food sharing and cooperation,” which is a compromise between the two main aspects of human nature: the utilitarian and the social. The issue of food is so central to human ecology because it intercepts in an exemplary way the three directions of the human relationship: with the environment, with other human beings, and, finally, with oneself.

Cross-References

- ▶ [Climate Change, Ethics, and Food Production](#)
- ▶ [Eating, Feeding and the Human Life Cycle](#)
- ▶ [Economy of Agriculture and Food](#)
- ▶ [Environmental Ethics](#)
- ▶ [Population Growth](#)

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Human Rights and Food

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Synonyms

Basic rights and food; Food and economic and social rights; Right to food; Subsistence

Introduction

Access to food and water is a matter of intense individual concern. Healthy people who go without food and water for 48 h will find that intense feelings of hunger and thirst are motivating them to find and consume some food and water. Ensuring food access for everyone is also a long-standing matter of moral, social, and political concern. Inadequate access to food and safe water is still a human problem; roughly 800 million people currently do not get enough food to cover their energy requirements (FAO 2013). Today we talk about food access not just as a development goal (the first Millennium Development Goal is “Eradicate extreme poverty and hunger” (United Nations 2000)) but also as a human right – “the fundamental right of everyone to be free from hunger” (International Covenant on Economic, Social and Cultural Rights, United Nations 1966).

Human rights are an important resource for ethical reflection about food and agriculture. This entry first discusses the right to food as it is developed in the international human rights movement. It then turns to philosophical discussions of access to food in work by authors such as Peter Singer, Henry Shue, Amartya Sen, Martha Nussbaum, John Rawls, and Thomas Pogge. The third section relates the human right to food to issues about agriculture, population, and the environment.

Human Rights and the Right to Food

Human rights are legal and/or ethical norms that aspire to protect all people everywhere from severe political, legal, and social abuses. The main sources of the contemporary idea of human rights are found in the natural law and natural rights tradition of philosophical thought, the bill of rights tradition that begins with the Magna Carta, and the declarations and treaties created by international organizations such as the United Nations, the Council of Europe, the Organization of American States, and the African Union.

The contemporary human rights movement began in 1948 with the approval of the Universal Declaration of Human Rights (United Nations 1948). Subsequent human rights treaties include the European Convention on Human Rights (1950), the International Covenant on Civil and Political Rights (1966), and the International Covenant on Economic, Social and Cultural Rights (1966).

The Universal Declaration included “economic and social rights.” Among these was Article 25.1, “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food. . . .”

Human rights norms use the concept of an individual *right* to something. Rights are normative guarantees of access to some freedom, power, protection, or good. Examples of human rights include the right to freedom of religion, the right to a fair trial when charged with a crime, the right not to be tortured, the right to equality before the law, and the right to an education. A description of a right with associated duties should cover at least:

1. The *rightholder* (the party or parties who have the right)
2. The *object* of the right (what the right is *to*)
3. The *dutybearer* (the party or parties with duties or responsibilities under the right)
4. The *normative content* of the right (what the dutybearers are required to do to make available the object of the right and what the rightholder may do to activate and gain compliance with the right)

When we apply this framework to the right to food, we can say that, first, the rightholders are all people. Second, the object of the right to food is nutrition and hydration adequate for health and normal functioning. Third, the primary dutybearers are the governments of the 200+ countries into which our planet is divided. Individuals and international organizations may also have responsibilities under this right. Finally, the normative content of the right specifies when the right applies (when the rightholder cannot obtain adequate food and water through his or her own reasonable efforts), how the rightholder can activate and use the right, and the forms in which access to food and water must be provided by the dutybearer (cash payments, food cards, highly subsidized products, etc.).

Of the various economic and social rights, the right to food and the right to education are the most widely accepted. Famine and malnutrition are now widely recognized sources of moral, political, and legal obligation. Further, the right to food has canonical formulations (described below) in international treaties and national bills of rights and is seriously promoted by international agencies, international diplomacy and relief efforts, and NGOs.

When the rights in the Universal Declaration were made into treaty law in 1966 by two UN treaties, one of these, the International Covenant on Economic, Social and Cultural Rights, elaborated the right to food in Article 11:

The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself [sic] and his family, including adequate food, clothing and housing. . . .

Under this right, countries have duties to (1) ensure that food is available to all their residents; (2) improve agriculture, food processing, and food supply chains; (3) teach people about nutrition; and (4) help create an international system that assists countries with food production and provides emergency assistance. Contemporary human rights documents put great emphasis on nondiscrimination in relation to all rights so

we could add the following: (5) ensure that access to food is not based on discriminatory grounds such as gender, race, religion, or caste.

The UN committee that supervises compliance with this treaty, the Committee on Economic, Social and Cultural Rights, also works to develop and clarify the content of each right by publishing interpretive comments. In 1999 the Committee issued “General Comment 12” on the right to food, which includes the following:

The content of the right: “The right to adequate food is realized when every man, woman and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement.”

Food safety and cultural acceptability: Food should be available in “quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture.”

Duties under this right: “Every State is obliged to ensure for everyone under its jurisdiction access to the minimum essential food which is sufficient, nutritionally adequate and safe, to ensure their freedom from hunger.”

Duties to regulate non-State actors: Violations of the right to food can occur through the direct action of States and also other entities such as individuals and corporations insufficiently regulated by States.

Comprehensiveness and sustainability: Efforts to satisfy this right should address “all aspects of the food system, including the production, processing, distribution, marketing and consumption of safe food... Care should be taken to ensure the most sustainable management and use of natural and other resources for food at the national, regional, local and household levels.

Priority to the most vulnerable: “Even when a State faces severe resource constraints... measures should be undertaken to ensure that the right to adequate food is especially fulfilled for vulnerable population groups and individuals.”

Ethical and Philosophical Work on the Right to Food

Work on the right to food by international lawyers and diplomats has been accompanied – and sometimes influenced – by the work of philosophical theorists.

Because access to adequate food and water is a condition of survival and well-being, and a subject of human rights, it has received considerable attention from contemporary moral philosophers. Peter Singer’s 1972 essay, “Famine, Affluence, and Morality,” provides a good starting point. It responded to a famine in Bengal and defended a duty of people in developed countries to provide effective assistance – even when the hungry people are in distant lands. Singer’s approach was not based on human rights; it was rather based on a consequentialist principle that “if it is in our power to prevent something bad from happening, without thereby sacrificing anything of comparable importance, we ought morally to do it” (Singer 1972).

Henry Shue’s 1979 book, *Basic Rights*, argued that subsistence (which included adequate food and water) was a basic right in the sense that no other rights could be enjoyed in its absence. Shue argued that “Deficiencies in the means of subsistence can be just as fatal, incapacitating, or painful as violations of physical security. The resulting damage or death can at least as decisively prevent the enjoyment of any right as can the effects of security violations” (Shue 1980, second edition 1996).

Amartya Sen has played a major role in influencing how people think about food and development. He urged shifting the focus away from “commodities” (the availability of goods and services) and toward people’s “capabilities,” what people are actually able to do and be (Sen 1985). Sen argued that adequate food cannot be understood in terms of a particular number of calories or a fixed quantity of some commodity such as rice; it should rather be understood in a way that is appropriate to one’s capabilities, situation, and choices. Sen pioneered a capabilities-oriented approach to development

that he calls “development as freedom.” In this view, freedom is conceived as having both negative and positive dimensions (Sen 1999). Sen’s work on famines has also been important. He noted that famines often occur in locations without severe overall food shortages and argued that famines are generally best understood as problems of inadequate purchasing power – as matters, that is, of low capabilities (Sen 1981). Sen also argued that democratic institutions, and particularly freedom of the press, play a large role in preventing famines (Sen 1982). Both Sen and Martha Nussbaum have argued that unequal access to food is a major source of the problem of “missing women” (a significantly lower percentage of women than men in the population) in India and elsewhere (Nussbaum 2000).

In his much-discussed work, *The Law of Peoples*, John Rawls developed a view of international human rights that takes the right to life to include access to the means of subsistence (Rawls 1999, p. 65). Rawls also addressed the inability of “burdened societies” to provide for the basic needs of their citizens by endorsing a limited duty of international assistance (Rawls 1999, pp. 5, 115–126).

The most extensive recent philosophical treatment of food and human rights is found in Thomas Pogge’s *World Hunger and Human Rights* (Pogge 2002). Pogge reminds us that nearly a billion people today live in severe poverty and that such poverty causes tens of thousands of deaths every day. He views these deaths as a major human rights violation that could be avoided if the contemporary international system were reformed.

Pogge emphasizes UDHR article 28 which says that “Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.” Pogge argues that the current international system plays a substantial role in creating and maintaining world hunger and that consequently wealthy countries – and their citizens – have not just a relatively weak duty of aid, but a stringent duty of justice to take decisive steps toward the eradication of global poverty.

He holds that both countries and individuals have a duty not to be complicit in an international order that unfairly disadvantages poor countries and the people in them. Countries have such a duty, Pogge suggests, because they have violated the *negative duty* not to contribute to the imposition of a global institutional order that foreseeably and avoidably renders unfulfilled the most basic socioeconomic rights. Pogge goes to great lengths to refute the view that most of the causes of severe national poverty come from inside the countries that suffer it and argues for the urgent need for three feasible “reforms of the global institutional order that would each dramatically reduce existing poverty-related human misery.” Pogge named the three main international causes of poverty “the three Ps”: Protectionism, Privileges, and Pharmaceuticals (Pogge 2002: 263).

Agriculture and the Human Right to Food

For the right to food to be realized worldwide, agriculture has to do its part by producing food of sufficient quantity and quality for the large human populations that exist today. As we saw above, the ICESCR addresses issues of food production, storage, and affordability. Numerous ethical and policy issues come into play as we think about what people should eat, how land should be used, high-tech innovations in agriculture, the conditions of agricultural work, the environmental dimensions of food production, and international food assistance. Most of these issues have not been and probably never will be addressed by human rights documents. Interaction between people who work on human rights and people working on agricultural policy is uncommon but does occur within the World Bank and in the United Nation’s Food and Agriculture Organization (FAO).

The human right to food cannot be sustainably realized without agricultural success. Current trends that threaten such success include:

1. World population is now around seven billion and is expected to increase by another billion or two in the coming decades (United Nations 2012). Much of this growth will occur in the least developed countries.
2. Climate change will be a challenge to agriculture in many ways, particularly since agriculture relies heavily on fossil fuels and contributes significantly to deforestation as savannas and forests are converted to fields and pastures.
3. Subsistence farming on small plots has become difficult or impossible in most countries. Successful agriculture is increasingly high tech and large scale.
4. Agricultural land, water, and workers are increasingly used for the production of nonfood products such as lumber and biofuels.

Summary

International human rights, and particularly the right “to be free from hunger,” provide an important resource for ethical reflections about food and agriculture. Another important resource is writings about freedom from hunger by philosophers such as Singer, Shue, Sen, Nussbaum, Rawls, and Pogge.

Cross-References

- ▶ [Access to Land and the Right to Food](#)
- ▶ [Biofuels: Ethical Aspects](#)
- ▶ [Climate Change, Ethics, and Food Production](#)
- ▶ [Environmental Ethics](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Farms: Small Versus Large](#)
- ▶ [Food Security](#)
- ▶ [Peter Singer and Food](#)
- ▶ [Poverty and Basic Needs](#)

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Humane Slaughter Association

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The HSA is the only registered charity (registered in England, No. 209563) that works in the UK and internationally through educational, scientific, and technical advances exclusively to improve welfare standards for food animals during transport, marketing, slaughter, and killing for disease control and welfare reasons.

History of the HSA

The Council of Justice to Animals (CJA) was formed in London, UK, in 1911 to promote more humane methods both for the slaughter of food animals and for the destruction of cats and dogs and to improve the welfare of food animals in livestock markets and transport facilities.

The Council also maintained a number of dispensaries to provide veterinary services for the animals of the poor. In 1928 the CJA merged with the Humane Slaughter of Animals Association, and today the organization is generally known as the Humane Slaughter Association (HSA).

Major Areas of Work

Over a period of more than a century, the HSA has played a major role in the introduction of many of the improvements in food animal welfare during transport, in markets, and at slaughter that are now taken for granted.

Welfare at Slaughter

The HSA's first major project was aimed at replacing the poleax with a mechanically operated humane stunner. In the early 1920s, it carried out an 8-month demonstration of the effectiveness of the captive-bolt stunner at a slaughterhouse in Islington, London. During the demonstration, almost 64 % of the blows administered with the poleax failed to stun the animals successfully the first time. In contrast, when the captive-bolt stunner was used, only four out of 1,255 animals were not stunned effectively the first time, and this was due to faulty cartridges which failed to cause the bolt to leave the barrel of the stunner. Initially there were objections from the meat trade to the use of the captive-bolt stunner but these were successfully met. As a result of the HSA's efforts, a byelaw requiring the use of humane stunners was adopted by 28 London boroughs and later by 494 other UK local authorities Hughes (2011).

In the early 1930s, there was still no national legislation in the UK protecting the welfare of animals at slaughter. The HSA campaigned strongly for change and in 1933 the *Slaughter of Animals Act* was introduced. This required all cattle and calves in slaughterhouses to be stunned with a captive-bolt stunner before slaughter and pigs in slaughterhouses to be stunned with either a captive-bolt or an "electrolethal" (electric stunner). However, in slaughterhouses without electricity, pigs could still be bled while fully

conscious, and the method of killing sheep was left to the discretion of local authorities. Appeals by the HSA eventually brought these animals within the scope of the Act.

During the Second World War, thousands of pigs were reared for home consumption and many were being bled while fully conscious. To help relieve the situation, the HSA distributed almost 500 captive-bolt stunners to licensed slaughtermen all over the country. The *Slaughter of Animals (Pigs) Act 1954* finally made it compulsory to mechanically stun pigs slaughtered outside of a slaughterhouse for home consumption.

The HSA continued to work for improvements in the poor conditions in red meat slaughterhouses, many of which lacked basic sanitation and had inadequate accommodation and facilities for livestock. This finally resulted in *The Slaughterhouses Act 1958* and *The Slaughter of Animals (Prevention of Cruelty) Regulations* and *The Slaughterhouses (Hygiene) Regulations 1958*.

The HSA helped to develop the first handheld, low-voltage electrical stunner for poultry and later arranged for a Danish automatic stunner, dealing with 4,500 birds per hour, to be trialed in the UK. *The Slaughter of Poultry Act* was introduced in 1967, and during the debate in the House of Lords, special mention was made of the work of the HSA.

Religious Slaughter Without Prior Stunning

The HSA campaigned in support of a Private Member's Bill in 1956 to remove from the *Slaughter of Animals Act 1933* the exemptions from stunning for Jewish and Muslim methods of slaughter. However, the Bill was defeated by 178 votes to 132. A second Private Member's Bill was introduced in 1968, but despite a campaign by the HSA which cost over £25,000, this was defeated by 219 votes to 69. *The Slaughterhouses Act 1974* and later the *Welfare of Animals (Slaughter or Killing) Regulations 1995* and the *EC Regulation on the Protection of Animals at the Time of Killing 2009* have continued to allow religious slaughter without stunning. The Farm Animal Welfare Council (FAWC), the Government's independent

advisory body on animal welfare, investigated the welfare of animals slaughtered by religious methods on two occasions. It published reports in 1985 and 2003 in which it recommended that religious slaughter without prior stunning should be phased out. The HSA supported this recommendation, but the Government rejected it on both occasions.

While respecting religious beliefs, the HSA's position on the pre-slaughter stunning of animals has always been unequivocal – all animals should be effectively stunned prior to being bled to minimize the possibility of suffering.

Market Reforms

In the early years, the HSA visited many markets in the UK and found that animals suffered from exposure, lack of water, and rough handling in antiquated temporary street facilities. It was clear that purpose-built markets were needed and the Association worked with local authorities to ensure that provisions for adequate cover, lighting, ventilation, drainage, and nonslip floors were included in plans for new and renovated markets. Where necessary, the HSA gave financial support to provide calf shelters, loading bays, poultry pens, and water troughs. In 1992 a video "To Market to Market," together with a practical guide, was produced to aid those handling livestock, particularly in markets.

The Association continues to provide advice and assistance to livestock markets and in 1989 introduced a "Market Award" to support and encourage high standards of welfare. The HSA has also provided "Market Development Grants" to help fund welfare improvements to market facilities.

Animal Transport

The HSA worked for many years to have cattle arriving in Glasgow by ship from Ireland transported to the abattoir by rail rather than walked through the city, and, in 1941, this resulted in the necessary rail lines being laid. The HSA released its first transport training video in 1989; "The Road Ahead" video was updated in 2000 and translated into ten European languages. In January 2007, a new EU Regulation

on the protection of animals during transport and related operations was introduced. The HSA subsequently produced Technical Notes on the new Regulation to assist those involved in the commercial transport of farm animals and horses, poultry, and farmed fish.

Overseas

As early as 1924, the Association exerted pressure in Greece and Italy for improvements in animal welfare. In 1950 a member of the HSA left £6,000 to help promote humane slaughter in Canada. A joint project for this purpose was set up between Miss Sidley (HSA) and Mr. Shelvoke of Accles and Shelvoke, the major UK firearms manufacturer. Slaughter demonstrations were arranged, and, as a result, the Canadian Parliament passed regulations enforcing the use of humane slaughter methods.

The HSA frequently provides educational materials, advice, and practical training to countries overseas (its educational materials and other publications are listed at www.hsa.org.uk/Publications). In many parts of the world, there remains an urgent need to improve the welfare of food animals, and the Association provides assistance, promoting humane slaughter methods, worldwide.

In 2005 the HSA was awarded a contract by the EU Commission to organize and run an international training workshop on welfare standards for the stunning and killing of animals in slaughterhouses or for disease control. A 3-day workshop was held in Bristol, UK, in 2006 and was attended by 85 delegates from 53 countries worldwide.

The HSA organized an international symposium on "Recent Advances in the Welfare of Livestock at Slaughter" in 2011, coinciding with the Association's centenary. The symposium, which was held in Portsmouth, UK, attracted delegates from 26 European, Asian, American, and Australasian countries Kirkwood et al. (2012).

Major Activities

The 1980s saw the HSA shift its emphasis increasingly toward education and training, and

this continues to be one of the main priorities of the Association. Educational materials for all those responsible for the welfare of animals in markets, during transport, and at slaughter or killing continue to be developed. Training videos on both the transport and slaughter of animals have been produced and distributed widely and translated into several languages, receiving awards from the International Visual Communications Association (IVCA) in 1995 and 2001. In 2005 the HSA was honored by the British Society of Animal Science and the Royal Society for the Prevention of Cruelty to Animals with an award for “Innovative Developments in Animal Welfare.” In 2006 it was awarded the “Meat Industry Training Initiative of the Year” award for its training DVD “Poultry Welfare – Taking Responsibility.”

In January 2013 a new EU Regulation on the protection of animals at the time of killing came into effect. The HSA was involved in the development of the new legislation, both at EU and UK levels. It has also provided advice and produced Technical Notes on the new Regulation to assist operators included within its scope.

Recent years have seen the need for advice on “exotic” farmed species, including water buffalo, bison, wild boar, camelids, and ostrich. The HSA has taken a leading role in both research and training in the handling and slaughter of these species in the UK. The Association has also been instrumental in the promotion of humane methods for the stunning and slaughter of farmed fish. It provided funding for research into the successful development of an electric stunner for farmed trout and continues to work with equipment manufacturers and farm managers to assess and improve equipment designed for the humane harvesting of both fresh- and seawater fish.

The Association publicizes its work and disseminates information at relevant events and through scientific and industry journals around the world. It provides funds for research and development into new or improved methods where these are needed, recent examples being the development of a captive-bolt gun for killing casualty poultry on-farm and improved handling

systems for pigs at slaughter. In addition, the HSA organizes workshops and symposia to facilitate knowledge transfer between academia and industry.

The HSA provides information and advice to governments, the livestock and meat industries, and the general public. It is consulted for its knowledge, experience, and practical expertise and is pleased to help identify problems and to develop practical solutions which offer lasting improvements to food animal welfare.

The HSA is very grateful to the generosity of all its members and supporters over the years who have provided the funds to enable its vitally important work. Further information about the HSA is provided at www.hsa.org.uk.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)

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Hunting

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Synonyms

Animal and human predation; Animal liberation; Animal rights; Animal suffering; Ecosystemic values; Hunting; Identification with nature; Utilitarianism

Introduction

Hunting, or the pursuit with the intention to kill wild, nonhuman animals, is one of the oldest means of human subsistence – in fact many have theorized that the adoption of hunting by early hominids may have been an important catalyst in human evolution. It is also, particularly in the case of its more modern manifestations, one of the most controversial.

For its critics, hunting inflicts unnecessary suffering upon other nonhuman sentient animals and violates their rights for ends (i.e., human subsistence and nutrition) that could be achieved by far less violent and more benign means (i.e., plant agriculture). In fact many critics charge that hunting has no ethically redeeming qualities and is motivated solely by the thrill of the kill and a sadistic delight in inflicting pain and suffering upon living creatures, with one critic, Joseph Wood Krutch, going so far as to declare hunting is “the perfect type of that pure evil for which metaphysicians have sometimes sought” (Quoted in Cartmill 1993, p. 228).

Defenders of hunting, on the other hand, contest the assertion that hunting necessarily involves greater animal suffering than other forms of subsistence and suggest that, in fact, it may involve considerably less. Moreover, they argue that the application of rights-based ethics to the biological realm ends up distorting humans’ relationship to wild nature and may constitute a condemnation of nature. Finally advocates of hunting suggest that hunting, far from being motivated by a hatred of wild nature and need to dominate it, can actually be motivated by a desire to reconnect with and affirm wild beings and natural processes.

Acknowledging that hunting is a multifaceted phenomenon involving a number of different practices, problematics, and controversies – far beyond the limited scope of an encyclopedia entry to tackle with in-depth – this essay will focus on, perhaps, the most obvious and apparent issues and questions involved in the hunting debate which center around the issues of animal welfare, animal rights, and finally the moral character of the hunter.

Hunting and the Question of Animal Suffering

Many arguments against hunting derive their theoretical inspiration from Peter Singer’s utilitarian argument for the ethical obligation for humans to be vegetarians. According to utilitarianism, the ethical rightness or wrongness of a particular course of action or policy adopted is to be judged in terms of whether the consequences of such action or policy result in the production of the greatest amount of happiness or pleasure and the least amount of pain and suffering possible for all interested parties concerned, and, in animal rights/liberation circles, Singer’s claim to fame rests upon extending this utilitarian logic to include the ethical status of nonhuman animals. For Singer argues that given the profound amount of animal pain and suffering involved in contemporary industrial meat practices, morally conscious human individuals have a duty to seek out food choices that involve less sentient animal suffering, such as a more plant-based diet. For while Singer does not deny that there are means of raising and slaughtering animals for meat that avoid the infliction of pain, such practices, he argues, are uncommon and thus the ethically prudent action is to avoid meat eating altogether and adopt a vegetarian diet whereby one is assured that the degree of animal suffering is minimized.

Though Singer himself rarely specifically mentions hunting, in the odd passage where he does, he appears to think a condemnation of hunting is implied by his wider utilitarian critique of the ethics of meat eating. In *Practical Ethics*, for instance, after discussing meat eating, he quickly dispenses with hunting in a mere sentence asking his reader to merely “apply the appropriate ethical principles” (Singer 1993, p. 68). In other words, he appears to see his utilitarian argument against the meat eating as being an unproblematic argument against hunting as well.

Nevertheless, several thinkers have argued for the ethical legitimacy of hunting precisely upon the basis of Singer’s utilitarian logic. Gary Varner (1995), for instance, has defended therapeutic hunting (or hunting employed to maintain the aggregate welfare of an ecosystem and

targeted species populations) upon utilitarian grounds. Noting that in the absence of natural predators, prey populations will quickly expand past the carrying capacity of their environment, Varner argues that therapeutic hunting may be necessary to keep such species within the carrying capacity of their environment and thereby avoid the tremendous amount of animal suffering that would be incurred by starvation. Anti-hunting theorists, such as Kretz (2010) and Mallory (2001), however, have legitimately pointed out that the absence of natural predatory populations is in no small part due to the power of the hunter lobby. Nevertheless, Varner has argued that given the present circumstances, limited therapeutic hunting is necessary in order to maintain ecosystemic balance.

Similarly and perhaps more problematically to Singer, given his vegetarian commitments, Archer (Archer 2011) and Cahoone (2009) have cogently argued that industrial plant agriculture and consequently a vegetarian diet may involve significantly more animal suffering than either the industrial meat industry or hunting. For while Singer seems to assume that plant agriculture involves less animal or sentient suffering due to the fact that plants are non-sentient and therefore feel no pain, this ignores the considerable indirect suffering to animals caused by industrial plant agriculture. As Cahoone notes, plant agriculture indirectly affects the well-being of nonhuman wild animals in several ways: (1) it involves the portioning of an area of wild ecosystems for the exclusive use by humans, thereby directly affecting the sustainability of wild populations; (2) it frequently involves killing wild populations who opportunistically feed on agricultural land; (3) it harms wild populations through pesticides, fertilizers, and other support technologies; and (4) the groundbreaking and harvesting machinery involved in industrial plant agriculture kill and maim numerous ground-dwelling amphibians, birds, and small and immature mammals (Cahoone 2009, p. 79). Archer, for instance, has conservatively estimated that a vegetarian diet results in 25 times more animals killed per kilo of useable protein than other forms of subsistence such as free-range

cattle and wild-harvested or hunted game (Archer 2011, p. 979).

Indeed, particularly in the case of the hunting of wild game, there appears to be no contest. For most contemporary hunting, Cahoone argues, involves sneaking up beyond the formidable sensory array of the game and delivering a kill-shot in which death is almost instant with little risk of suffering involved (Cahoone 2009, p. 73). Critics such as Evelyn Pluhar however point out that there is considerable risk with all hunting that the animal's death will not be instantaneous and can result in crippling and injury to the prey. She also notes hunting has resulted in considerable transformation of wild habitats through brush clearance and damming (Pluhar 1991, p. 121). Nonetheless, as Cahoone notes, crippling and maiming of sentient beings also occur during the process of plowing and harvesting involved in plant agriculture (though as yet no meaningful statistical correlation has been made between the two), and in terms of the transformations of wild environments, it would appear that there is no contest.

Of course, it is possible that other scholars could weight and calculate the pain and suffering caused by plant agriculture and hunting differently and come up with perhaps significantly different numbers than Cahoone or Archer. Nevertheless, Cahoone and Archer's objections not only challenge the assumption that a plant-based diet necessarily involves less suffering than other forms of food procurement but also points to a significant weakness of utilitarian types of ethical reasoning, in that how one calculates the balance of pleasure and pain is inherently tied to which empirical factors one sees as relevant and the quantifiable values one assigns them. Thus, utilitarian calculation can frequently be used to justify two completely contradictory positions depending upon the scope and multiplicity of empirical elements or factors one considers germane to one's case and how one assesses the particular degree of pain and pleasure derived from these factors. This shortcoming of Singer's utilitarian approach has led many critics of hunting to embrace Tom Regan's rights-based approach.

Hunting and the Question of Animal Rights

In *The Case for Animal Rights*, Regan has argued that certain nonhuman animals have intrinsic rights derived from the Kantian theory of inherent rights. Though he notes the Kantian theory of rights necessarily involves the issue of rational agency, Regan extends Kant's criteria to include all those who might be interested in the maintenance of their life (i.e., animals capable of conscious awareness). In Regan's view this means that animals possessing consciousness have the basic right never to be treated as merely a means for the ends of others. Regan sees this as entailing the right to life and the right to be treated with respect which includes the right not to be harmed. Regan, however, does not believe that this right is absolute and acknowledges that there are times when in respecting someone's right not to be harmed, another's right to be harmed must be overridden. Nevertheless, he is concerned to minimize such exceptions, arguing that in these situations one must employ the miniride principle (minimize overriding) and the worse off principle. In general he sees the ascription to animals of the right to be treated with respect as entailing the abolition of raising and using animals for meat, the end of animal experimentation, and the outlawing of trapping and hunting. Indeed, Regan sees his rights-based approach as closing certain loopholes which might be permitted under Singer's utilitarian approach. For in granting nonhuman animals' certain unalienable rights, Regan argues, he is able to provide uncompromising grounds by which to condemn all forms of animal abuse such as hunting.

Certainly, it is not entirely clear how his rights-based position is not as vulnerable to Archer and Cahoon's objection as Singer's is: after all given the enormous amount of animal death and suffering involved in plant agriculture, surely plant agriculture involves the same if not a greater degree of infringement upon the rights of animals as other forms of food procurement. Yet perhaps more philosophically significant, as many environmental philosophers have pointed out, Regan's rights-based approach seems to run

completely counter to all biological and ecological reality and processes. As Ann Causey straightforwardly observes "There is no evidence that nature has assigned rights to any creatures and plenty of logical, biological and evolutionary evidence that she has not" (Causey 1989, p. 335): quite simply in the natural world not only is there no right to life but more importantly nature itself is structured according to the trophic cycle by which energy is recycled throughout the ecosystem via the consumption of organism by other organisms. To put it bluntly, life feeds on life.

This was the argument underlying the schism between animal rights theorists and environmental philosophers: with environmental theorists such as Callicott (1980) and Rolston (1984, 1988), who argued that animal rights theories were incompatible with the aims of ecological protection. The continued survival of wild ecosystems, they argue, is dependent not on the survival of the individual organism but the ecological systems of relations which sustain them. Thus, in the place of individualistic right-based theory, they proposed an ecological ethic in which the overall ecosystem and the ecological roles a species occupies in the ecosystem are more valuable than the individual members. Consequently according to this ethic, an act which may be harmful to an individual animal can be seen as valuable according to this ecological ethic if it benefits the ecosystem as a whole. This led certain environmental philosophers such as Rolston to argue for the moral legitimacy of hunting. For while acknowledging that in terms of human social morality, hunting would be considered immoral, this social morality, he argued, is inappropriate or the wrong ethics to apply in terms of our relationship with wild nonhuman animals. Rather because hunting is continuous with the ecological process of nonhuman predation and humans' original ecological niche, the appropriate ethical code to employ, he argues, is an ecological one that aims at the preservation of ecosystemic integrity. Similarly, Ned Hettinger has expanded on Rolston's argument in his seminal paper, "Bambi Lovers versus Tree Huggers," and asked whether animal rights theorists can condemn all forms of hunting and not by the

same token condemn the natural world in general and predators in particular (Hettinger 1994).

Generally, animal rights/liberation theorists have responded to this challenge by noting that it is dependent upon the naturalistic fallacy which attempts to derive ethical norms from natural ones and they point out that there are numerous examples of behavior among nonhuman animal species, such as coprophagia, brood parasitism, post-cotial mate cannibalism, etc., which are in stark contradiction to human morality (Mallory 2001; Luke 1997; Regan 2004; Evertt 2004). Similarly Singer, for instance, has famously written:

It is odd how humans, who consider themselves so far above animals, will...use an argument that implies we ought to look to other animals for moral inspiration and guidance! The point is that other animals are not capable of considering other alternatives, or of reflecting morally on the rights or wrongs of killing for food; they just do it. We may regret the way the world is, but it makes no sense to hold nonhuman animals morally responsible or culpable for what they do. (Singer 2002, pp. 224–225)

Yet, leaving aside the question whether predators cannot be considered morally culpable these responses, quite frankly, seems to miss Hettinger and other environmentalists' point, which is not that environmental entities and processes conform to human ethics but rather that if one is to articulate an ethical value for natural entities and processes, one needs to understand and appreciate wild nature as it is in and of itself, not impose human norms upon a realm whose processes appear to be antithetical to these norms in general. Quite simply, as Hettinger and Rolston point out, much of the animal liberationist/welfare discourse appears to establish the foundation of our ethical responsibility to nonhuman nature on grounds clearly antithetical to it. Furthermore, with Luke and Pluhar's condemnation of hunting as an atavistic return to nature that "would enact bashing other human beings over the skull" (Pluhar 1991, p. 124), it appears that their difficulty with hunting is not that it removes us from nature but rather that it brings us far too closely in contact with it – for the hunter is a human who kills other animals like an animal and therefore is

little better than an animal. This touches upon deep ethical issues at play not only in vegetarian condemnations of hunting but also its wider condemnation in the general population as well. For opinion poll surveys suggest that while most have little problem with hunting per se – particularly if it is done for the purposes of subsistence or ecological control – they do have a problem with the hunter, particularly the sport hunter, and specifically his or her motives, in that it is felt that the sport hunter must be informed by the most bestial (animal-like) of motives.

Hunting and the Question of Human Brutality

Eric Zencey recounts a telling anecdote whereby the vice-president of a local college informed him that it was immoral for a person to go hunting if they could buy meat (Zencey 1987, p. 60). For as Matt Cartmill has written, "Even the most enthusiastic lover of fried chicken may suspect that there is something wrong with a man who finds recreation in wringing the necks of chickens" (Cartmill 1993, p. 241). Indeed as Cartmill further goes on to write "For most of us, ceremonial going into the woods once a year with a rifle sounds about as attractive as marching into a dairy barn once a year to bash cows with a sledgehammer" (Cartmill 1993, p. 228) and just about as easy. Given then that sport hunting appears to be such an easy and straightforward affair in which success is almost guaranteed, there seems little reason to undertake it, aside from the desire to dominate, inflict pain, and kill another living creature. Little wonder then that the practice of sport hunting is popularly equated with everything from serial killing to violent rape or that anti-hunting theorists have attempted to tie hunting with every historically pernicious social practice from hierarchy to patriarchy, for it seems an easy and straightforward case of the need of the strong to assert control and dominance over the weak.

Many ecofeminists such as Marti Kheel, for instance, have argued that hunting manifests an objectivizing gaze which sees nonhuman animals

as simply objects for human use and compared this to other forms of human domination (Kheel 1995). Similarly Roger J. H. King has argued that hunting is motivated by little more than necrophilia or the love of death for death's sake and has suggested that this love of death underscores both hierarchy and patriarchy (King 1991). Mary Zeiss Stange in her book *Woman the Hunter*, however, has contested this cultural and historical link between hunting, misogyny, and hierarchy, pointing out that many hunter-gatherer societies depend on hunting as a primary means of subsistence and are some of the least hierarchical and patriarchal societies on record. Moreover, as Rod Preece has observed in his history of vegetarianism, *Sins of the Flesh*, many societies founded upon the principle of vegetarianism such as Vedic India were as extremely hierarchical and misogynistic (Preece 2008).

Furthermore, Garry Marvin has contested that hunting implicitly manifests human domination and control over the natural world by arguing that hunting differs from other forms of animal killing, precisely in terms of the absence of human control. Marvin notes that most hunting involves the killing of wild animals (which have not been genetically tamed or otherwise put under our control) and which also must be able to escape or defeat the intentions of the hunter (Marvin 2006). In fact, far from reenforcing a sense of human superiority, he points out hunting can impart in the mind of hunter a much-needed sense of human inferiority. For in many respects wild animals have physical and sensory endowments which put humans to shame; for not only are they faster and stronger but they also have a sensory acuity, particularly in terms of their sense of hearing and smell far beyond those of humans. Add to this a formidable behavioral repertoire of stealth and evasion and it is little wonder that, as Zencey points out, fewer than 10 % of all hunts are successful (Zencey 1987, p. 60). Indeed, despite the common tendency, particularly among critics of hunting, to focus on the act of killing to the exclusion of all else, the actual moment of the kill represents the tiniest fraction of the time spent hunting – if it occurs at all. The vast majority of the hunt, as Cahoon notes, is

spent in continual searching for signs of the prey, and, “Often this searching is hunting, is the entire experience, because most hunts are unsuccessful” (Cahoon 2009, p. 74).

This searching itself requires considerable knowledge of bush craft, the surrounding environment, and the habits, behaviors, and spoor of the prey (Cahoon 2009; Kerasote 1993; Shepard 1973; Zencey 1987). This could explain why, in demographic surveys, hunters routinely rank above other sections of the population in terms of their general knowledge of wilderness and wild species (Kellert 1978). In fact, it is the opportunity to spend time and get close to nature, rather than the need to give vent to some frenzied bloodlust, which hunters routinely invoke when asked why they hunt (Kellert 1978). Moreover, as José Ortega y Gasset notes in his phenomenological account of hunting, hunting requires an unrivaled focused attention and alertness toward one's environment and he argues that this is a fundamental aspect of its appeal (Ortega 1972).

Yet hunting stimulates in the hunter not only a hyperawareness of their surroundings but also an intense sense of intimacy between the hunter and the prey. For, as Ortega and others point out, the very activity of tracking and stalking the prey demands not that the hunter objectify the prey but requires precisely the opposite: the hunter must assume that the prey has thoughts, intentions, and is in some sense conscious (Ortega 1972; Kerasote 1993; Parker 2010; Shepard 1973; Stange 1997). Throughout the hunt, the hunter needs to continually get inside the mind of the animal, to see the world and the current situation from its perspective. Did the prey hear the rustle of grass as the hunter crept forward? Does the change in direction and speed of its tracks or the tilt of its head indicate that it has caught the hunter's scent? Thus, the hunter must constantly imagine the *subjective* state of his or her quarry, attempting to quite literally perceive the situation through its senses.

This, then, to many anti-hunting theorists is the aspect of hunting that is perhaps the most incomprehensible: how can one identify so intimately and viscerally with the mind of another animal and then take its life? Kheel, for instance, has suggested that “In order to understand how an

act of identification can coexist with the desire to kill a being with whom one identifies, it is important to understand the ambivalent nature of the hunt...The hunter is both driven by conflicting desires to both identify with an animal and to deny that he is an animal himself" (Kheel 1990, p. 133). Yet, many commentators have argued that one of the virtues of hunting is precisely that it confronts us with the facticity of our animality and the fact that we like all other animals are mortal and will die. Indeed they argue that vegetarianism itself is motivated by an aversion toward this acknowledgment that we are carnal, finite beings and hence mortal (Cerulli 2010; Nelson 1997; Kover 2010; Shepard 1973).

Summary

The hunting debate is in large part structured around questions of animal suffering, animal rights, the nature of nature, and ultimately the nature of our humanity. For one side, hunting is a brutal activity which imposes unnecessary suffering and contravenes the innate rights of nonhuman animals to life solely out of the human desire to inflict pain and domination upon the nonhuman world. For the other side, hunting arises out of the need to viscerally connect wild nature and wild processes. Yet whatever side of the debate one falls into, what cannot be debated is that the hunting debate ultimately involves competing visions of nature and what this implies in terms of our nature.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Carnism](#)
- [Environmental Ethics](#)
- [Food and Place](#)
- [Industrial Food Animal Production Ethics](#)
- [Industrialized Slaughter and Animal welfare](#)
- [Meat: Ethical Considerations](#)
- [Peter Singer and Food](#)
- [Vegetarianism](#)

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Hybridity in Agriculture

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Synonyms

Agrarian; Agribusiness; Agrichemical; Agro-industry; Agronomics; Agronomy; Biotech farming; Breed; Breeding; Cross; Cross-pollination; Engineered crops; Farming; GM; Horticulture; Hybrid; Industrial farming; Nonorganic; Plant; Seed crops

Introduction

In a very general sense, *hybrid* can be understood to be any organism that is the product of two (or more) organisms where each parent belongs to a different kind. For example, the offspring from two or more parent organisms, each belonging to a separate species (or genera), is called a “hybrid.” “Hybridity” refers to the phenomenal character of being a hybrid. And “hybridization” refers to both natural and artificial processes of generating hybrids. These processes include mechanisms of selective crossbreeding and cross-fertilization of parents of different species for the purpose of producing hybrid offspring. In addition to these processes, “hybridization” also refers to natural and artificial processes of whole genome duplication that result in the doubling or trebling of the sets of chromosomes of the organism.

This entry provides an overview of the impact of hybridity on agriculture. It begins with an historical sketch that traces the early horticulturalists’ and naturalists’ investigations of hybrids. This starts with the observations of Thomas Fairchild and Georges-Louis Leclerc, Comte de Buffon, and leads to the explanation of its mechanism by Gregor Mendel, James Watson and Francis Crick, and Ernst Mayr and the eventual manipulation of hybrids and hybridization by Barbara McClintock.

Following this, the reader is introduced to a number of key terms and concepts in use within current research as well as highlighting diverse ethical concerns that center on hybridization. Recent research that attempts to ascertain the role of hybridization in adaptive change will be introduced. This will include research on the evolution of crop species, increased biodiversity, and the use of hybrids to manipulate phenotypically desirable traits in agricultural crops. The focus of the discussion is on a particularly significant type of naturally occurring hybridization, polyploidy hybridization. Polyploids are organisms which have more than two complete genomes in each cell. This kind of hybridization is ubiquitous among crop plants. The role of polyploidy in plant evolution and the affects of polyploidy on

plants and animals will be reviewed. A critical discussion of its agricultural value in the production of fertile polyploid hybrids highlights key epistemological, ontological, and ethical issues. These are illuminated with reference to the distinct processes of artificial and natural hybridization.

A survey of these different kinds of hybridization includes the ethical and economic impacts of hybridity on global nutrition, the environment, and considerations of some practical implications for the agricultural industry. Tracking the role of hybrids, the process of hybridization, and the current impacts of it for agriculture requires knowledge of the history of its early conceptualization, understanding, and use. This is the topic of the following section.

Historical Background

With the domestication of plants and animals, early farmers became familiar with the practice of crossbreeding as a way to produce food crops and livestock with desirable traits. They were also aware of naturally occurring hybrids in both animals and plants. But although the phenomenon of hybridity was known, the intentional crossing of organisms was not recorded until 1717. The English horticulturalist, Thomas Fairchild, was the first to intentionally produce a hybrid by crossing a carnation (*Dianthus caryophyllus*) with a sweet william (*Dianthus barbatus*) in a small city garden in the London district of Hoxton.

In 1753, the French naturalist, Georges-Louis Leclerc, Comte de Buffon, discusses the infertility of hybrid offspring which is the result of the reproductive relationships (either through natural copulation or through artificial insemination) between two animals of different species. In *The Donkey*, he discusses the case of the mule, an infertile cross between a donkey and a horse (Buffon 1753). In 1890, Wilhelm Rimpau was one of the first to develop an intergeneric hybrid crop with agricultural potential. This was triticale. Triticale was the result of the hybridization of wheat and rye. Together with other German

breeders, Rimpau built upon this new technology and made improvements in winter and spring wheat crops.

It was not until 1900 that the underlying mechanisms responsible for hybridity (and more generally, the principles of inheritance originally discovered and published by Gregor Mendel in 1866) were widely known and understood. This came when Erich Tschermak, Hugo de Vries, and Carl Correns independently corroborated Mendel's research on the inheritance of factors in crossed hybrid generations in the common pea (*Pisum sativum*) within their own agricultural studies.

In the late 1920s, high-yield hybrid corn was developed and marketed in the United States. The discovery of the structure of DNA by Francis Crick, James Watson, Rosalind Franklin, and Maurice Wilkins in 1953, and the later development of genetics and genomics that followed, provided knowledge of the biochemical mechanisms of hybridity that would complement the practical knowledge already established in agricultural technology. In the early 1980s, the use of this practical knowledge came to fruition in its implementation within biotechnology. It was at this time that biotechnological research and agricultural practice combined in the production of a hybrid tobacco plant with antibiotic resistance in 1982. With this union of research and practice, discussion of the economic, legal, and ethical impacts with this new technology also followed apace. For instance, within the next 4 years, the subsequent Environmental Protection Agency gave approval for the antibiotic resistant tobacco in 1986. This laid a precedent for further biotechnologically produced hybrids. As a result of the research on tobacco and the approval for its sale, other biotechnologically produced hybrids such as soybeans, corn, and cotton followed. These were approved for sale shortly after (in 1995 and 1996) in the United States (Wieczorek and Wright 2012).

While early horticultural and agricultural practices took as given the importance of hybridization for the cultivation of more desirable plant characteristics and higher-yield crops that were better adapted to diverse environmental

conditions, the role of the hybrid was still being discussed as an evolutionary anomaly among many zoologists. For example, Ernst Mayr formulated his highly influential BIOLOGICAL SPECIES CONCEPT (BSC) with specific reference to the exclusion of hybrids by defining species as those populations which are reproductively isolated from other population groups (Mayr 1963). That reproduction can occur between members of different species through hybridizing was a problem for his conception of species that required a solution. Mayr's solution was to deny that hybridization between organisms of different species was evolutionarily significant. He maintained that the majority of hybrids are "totally sterile" and "successful hybridization is indeed a rare phenomenon" (Mayr 1963). Mayr concluded, on the basis of this reasoning, that since hybrids are rare, they only ever amount to "evolutionarily unimportant mistakes" (Mayr 1963). There was a striking disconnection between the theoretical discussions of hybrids as "evolutionarily unimportant mistakes" among zoologists and the practical use of hybrids by farmers and agronomists. While the former denied the evolutionary impact of hybrids, the latter not only recognized it but routinely used hybrids to improve crop performance and increase yield in cultivation.

Polyploid Hybridization

The term "polyploidy" was originally introduced in 1916 by the German botanist, Hans Winkler. Barbara McClintock's early research on *Zea mays* L. (maize) suggested that epigenetic silencing may have a particular evolutionarily important role in polyploids. The process of polyploidization contributes large-scale genomic reconfigurations and changes in gene expression and functioning. Her later research suggested that this process might be an instance of what she referred to as "genomic shock," an event that causes increased transposable element activity and epigenetic silencing (McClintock 1984).

Rather than dismissing hybrids as insignificant sterile evolutionary dead ends as Mayr did in

setting out his BSC, McClintock's research focused instead on the role of hybrids and hybridization as producing novel mechanisms of evolution: "Species crosses are another potent source of genomic modification" (McClintock 1984). The shift from hybridization being understood as an occasional taxonomic nuisance, with no evolutionary impact, to a mechanism capable of large-scale genomic reconfiguration amounted to a revolution in how hybrids and the process of hybridization were viewed.

The Role of Polyploid Hybridization in Plant Evolution

Polyploidy occurs widely in angiosperms (flowering plants) and is believed to play a significant role in plant evolution (Soltis and Soltis 2009). Polyploidization is a naturally occurring mechanism that leads to instantaneous speciation. Instant speciation refers to the formation of a new species in one generation. Speciation is usually a gradual process that takes place over thousands of generations. This kind of hybridity is the result of a doubling or trebling of the sets of chromosomes of the plant and is ubiquitous in agricultural crops (Udall and Wendel 2006). The result of polyploidization is not only genome duplication but also variation in the regulation and expression of genes from the parental diploid to the polyploid progeny.

These changes may (in some cases) lead to higher fecundity, phenotypic variation, and environmental adaptedness of the polyploid. Duplication of the genome is thought to provide organisms with more resources and a potential for increased ecological flexibility. This may allow them to populate a new or extended environmental niche; have greater adaptability to stressful environments, the ability to mask recessive mutations that could have a negative impact on the organism; and possess increased vigor over diploid species. In these cases, hybridization may not be best described as a detrimental breach of species boundaries threatening species separateness (as Mayr suggests), but may instead be better understood as an evolutionary advantageous mechanism by which an organism can increase its genetic and epigenetic resources (Kendig 2008, 2013).

Polyploidy in Agriculture

High-yield crop varieties of maize, cotton, wheat, oilseed rape (canola), peanut, and sugarcane are all the result of whole genome duplication and hybridization (Udall and Wendel 2006). These crops are allopolyploids. Allopolyploids are a type of polyploid that are defined as organisms whose cells include two or more distinct genomes that can come about through hybridization of two different species. Allopolyploids are distinguished from autopolyploids which are organisms that have genomes that are identical or very similar and arise from the same species.

Studies focusing on a variety of wild and domesticated species have shown that allopolyploids have an increased ability to respond to biotic and abiotic stress in comparison to their diploid parents (Kim and Chen 2011). While by no means conclusive for all polyploids, these kinds of evolutionary adaptability have been extensively studied in recent research on domestic cotton polyploids. Polyploid cotton has been found to produce stronger fibers than diploids. As a consequence, the polyploid cotton is often preferred to the diploid cotton and has a greater market value globally.

Understanding gene expression of these and other allopolyploids has contributed to a better understanding of the different transcriptome changes of diploids and allopolyploids that can be significant for crop production. Such research may reveal how polyploid wheat and rye resist abiotic stress or insect attack. But in order for polyploidy to be used effectively as a marker for improving crops, an understanding of its effects on the whole organism needs to be known and understood (Udall and Wendel 2006). If this were possible, patterns of gene expression that are evolutionarily changeable within allopolyploids and other polyploids could be selected for and used to produce crops with desired phenotypes such as increased stalk strength, root health, and resistance to disease or predation or increase the nutritive value of crops for humans or feed grain for livestock.

Polyploids, Homoploids, and Hybridization in Animals

Although many plant hybrids are fertile, animal hybrids are often sterile. However, the classic

example of the mule as the evolutionary dead end of a hybrid cross cannot be generalized across all species. Animal hybrids usually occur by means of homoploid hybridization. Homoploid hybrids occur as a result of two organisms with the same chromosome number interbreeding. Differences in chromosome number complicate mitosis and frequently result in inviability of the hybrid animal.

Polyploid hybridization in animals is rarer but does occur and has been extensively studied in a variety of fish species, including the red crucian carp and blunt snout bream hybrids, as well as the widely studied cichlid fish species complex that exists as the result of multiple hybridization events.

A Taxonomy of Hybrids: Natural, Artificial, Induced, and Biotechnologically Produced

Polyploid hybridization can occur naturally and can also occur as the result of intentional crossing of organisms in the case of artificial selection and breeding among homoploids or polyploids. In addition to natural and artificially produced hybrids, hybridization can also occur by chemically inducing them. For instance, polyploidization can be induced in kiwifruit by means of colchicines (see Wu et al. 2012). And perhaps the most widely discussed within the bioethics literature, hybrids, can also be produced by means of biotechnological interventions to produce transgenic hybrids between diverse taxa. The focus of the remainder of this entry will be on these naturally and biotechnologically produced hybrids and their ethical impacts.

Ontological, Ethical, and Legal Impacts of Hybridity in Agriculture

Ontological and Ethical Distinctions: Natural and Artificial Hybridizing

Natural hybridization is often contrasted with *artificial* hybridization. However, natural hybridization is the occurrence of hybrids without intervention of any kind. Artificial hybridization is used in all conventional, traditional, and organic farming that relies on artificial or selective

breeding. Artificial hybridization is also used in biotechnologically produced hybridizing. “Natural” and “organic” may more particularly impute the nonuse of certain types of farming techniques, namely, biotechnologically assisted farming techniques, variously referred to as genetically modified organisms (GMOs). These crops are the result of altering an organism’s genes by direct removal or insertion of DNA from another organism or DNA. It is a type of artificial hybridizing which occurs in the lab rather than in the field. This differs from traditional artificial breeding methods in that the organism is modified by directly making changes to the DNA to produce different phenotypes rather than breeding hybrid crosses of parents with desirable phenotypic characteristics.

Non-GMO Farming and Organic Farming

Non-GMO farming and organic farming may trade on the ideal of natural production as a contrast class to the artificiality or engineered variety, but all farming involves artificial selection, and some organic farming may allow biotech tweaks but not GMOs. This demarcational fuzziness means that what kind a thing is (GMO or non-GMO, naturally or artificially produced), and therefore to what ontological category it belongs, becomes difficult, if not impossible, to adjudicate. This ontological fuzziness also has impacts on ownership and distribution and has myriad ethical ramifications.

Biotechnologically produced hybrid crops bring with them a host of legal issues including liability and intellectual property issues. Liability for GMO contamination has been discussed with regard to cross-hybridization especially in the production of soybeans, cotton, oilseed rape, and maize. Conventional farmers, whose crops have been compromised due to pollen drift (cross-pollination with transgenic crops), can be sued for patent infringement if they keep their seeds and replant them even if they did not know that these seeds are the product of an unintentional transgenic cross. Conventional farmers without a license to use the transgenic seeds can be prosecuted for using their traditional methods of seed saving, sharing, and exchanging

and planting them the next year (McEowen 2004).

Biotechnologically Produced Hybrid Crops (Conceived of as a Solution to Drought and Hunger)

Biotechnologically produced hybrids have been discussed as a solution to growing drought and the effects of climate change on agriculture in developing and industrialized countries as well as a solution for global hunger and malnutrition. Interest in these technologies as solutions to improve global health was expressed early on by the director general of the United Nations Food and Agriculture Organization, Jacques Diouf (2001). In a press release, Diouf stated that the use of biotechnologically produced hybrids and GMOs must be considered as a possible solution to “the supply, diversity, and quality of food products and [a way to] reduce costs of production and environmental degradation, as the world still grapples with the scourge of hunger and malnutrition” (Diouf 2001). Diouf maintained that the nutritional needs of the world have outstripped the capacity of conventional farming techniques. In order to feed the world’s population, biotechnological means of increasing yield and nutritional value of crops must be seriously considered.

Many biotechnologically produced crops currently on the market are designed to withstand herbicides used to control weeds such as water hemp, ragweed, and Palmer amaranth pigweed (e.g., IMI corn, STS soybeans, Roundup Ready soybeans, canola/rapeseed, cotton). One of the most widely discussed are crops that have been created that are tolerant to HPPD inhibitor herbicides widely used in corn production (Successful Farming 2012). Farmers growing herbicide-tolerant crops can limit the amount of money spent on controlling weeds (Successful Farming 2012). Growing these herbicide-tolerant crops also allows the farmer multiple modes of action to control a variety of weeds while not harming the yield of his or her crop.

In addition to herbicide tolerance, agricultural companies are currently producing hybrids that solve problems of extremes of temperatures

(e.g., extreme heat), drought conditions/flooding, water shortages (due to the rapid reduction of aquifers or other controversial irrigation techniques), low pollinator populations (e.g., bees), and lower yields that affect crops in the many of the western seed-crop states in the United States (Kansas, Missouri, Colorado, Nebraska, Oklahoma, Texas, South Dakota) (Minford 2012). To do this, seed companies isolate genes identified with controlling how plants react to stress. Some rely on selecting genetic markers to cross with desirable phenotypes, while others rely on single-gene biotechnological approaches to add corn drought-tolerant genes from bacteria to produce drought resistance transgenically (Minford 2012).

Biotechnologically produced crops have also been engineered to be resistant to insect predation. For instance, the transgenic cotton *Bacillus thuringiensis*-cotton (Bt-cotton) and Bt-maize are both bred to diminish the effects of certain pests. *B. thuringiensis* is a gram-positive soil-dwelling bacterium. Bt-cotton and Bt-maize are produced with a toxin of *B. thuringiensis* which is toxic to many species of lepidopteran larvae (caterpillars) that feed on the stalks, ears, and leaves and the coleopteran larvae (beetle grubs) that feed on the roots of cotton and maize plants (Thalmann and Küng 2000).

One of the frequently discussed benefits of Bt-maize and Bt-cotton is that farmers can reduce their reliance on airborne insecticides. This impacts not only the air quality but also soil and the environmental impact of these chemicals on nontarget crops and wildlife. It also provides an advantage to the farmer in terms of limiting exposure to these chemicals. The farmer can reduce his or her direct contact with the chemicals which may positively affect the health of the farmer. Planting weed- and insect-resistant crops also reduces the farmer's time in the field and expenditures on chemical herbicides, insecticides, and fungicides.

Biotechnologically engineered ways of increasing the nutritive value not only for human consumption but also for use in animal feed have also been explored. In the United States and EU, more than 60 % of corn and soybeans are

used to feed livestock with corn being the major feed source in a wide variety of animals including poultry, swine, and dairy cattle (Thalmann and Küng 2000). New transgenic hybrids increase desirable nutrients in crops fed to livestock. As a result this leads to healthier more productive livestock and potentially a lower feed bill if the farmer does not need to buy additional minerals to add to feed. For instance, crops of seed or grain can be altered to produce a more desirable composition in recombinant plants which can produce higher levels of oleochemicals, proteins, or carbohydrates (Thalmann and Küng 2000). Some hybrids are also designed to remove things in the crop that are harmful to animals. For instance, canola is a modification of rape that reduces the uric acid within the plant which is toxic to livestock. This means that the crop can be used as a feed crop instead of just as an oilseed crop. There is a hybrid of fescue for hay that also reduces its toxicity to cattle.

Biotechnologically Produced Hybrid Crops (Conceived of as a Threat)

In addition to discussions of the benefits of biotechnologically produced hybrids, there have also been considerable ethical concerns raised about the threats the production of biotechnological hybrids poses to public health and the environment. With regard to public health, these have focused on the potential of transgenic crops for carrying antibiotic resistance that would compromise drugs currently in use to treat illnesses.

With regard to the environment, ethical discussion has focused on the potential destabilization of ecosystem balances with the introduction of herbicide resistance and insect resistant crops. With reference to socioeconomic issues, these worries have focused on the labeling and marketability of organic products. One ethical and economic concern is that products may be accidentally contaminated by means of cross-pollination from neighboring transgenic species. This would affect farmers' ability to accurately maintain organic crops due to transgenic crop drift from other nonorganic farms.

In addition to these concerns for organic food production, other worries focus on the impact of transgenic crop drift on conventional farmers who practice seed saving, sharing, and exchanging. Some recent research suggests that saving seeds from plants that produce desirable traits to plant in the following year (to ensure that they had better crops) has been a traditional practice that has a history that goes back to that of the early Neolithic farmers (Shillito 2011) and continues to be a practice of traditional farmers in developing countries and socioeconomically vulnerable communities. The suggestion that the practice of seed saving, sharing, and exchanging should be curtailed to protect crops has been mooted. However, restrictions on these practices would disproportionately affect these cohorts and possibly frustrate the social and economic inequities already present. A move that itself would involve multiple ethical repercussions.

The prime ethical concern with regard to transgenic hybrid crops is the inadvertent dispersal of the transgenic crop pollen through wind or the movement of pollinating insects. The dispersal of herbicide-tolerant crops to other conventionally farmed fields is of special concern as their dispersal could produce *superweeds* that would not be controlled by herbicides currently in use. In addition to concerns about the possible creation of superweeds, analogous problems may arise with regard to insects which are the focus of insecticide-resistant crops. The incidence of potential *superpests*, produced as a consequence of adaptive resistance to targeted insecticide resistant crops, has also been observed and discussed (Liu et al. 1999). Concerns have also been raised about the possibility that crops bred for resistance to some pests may actually encourage the proliferation of other pest insects creating populations of secondary pests. If the primary insect predators are reduced, other secondary pests such as the boll weevil and stink bug may rebound (Liu et al. 1999). In addition to these worries, insect-resistant crops such as Bt-cotton and Bt-maize may also affect non-target species of insects such as green lacewings and other insects that are beneficial to crops. The introduction of herbicides and insecticides may

have the potential to disrupt agricultural production as well as natural ecosystems in unpredictable and potentially catastrophic ways. These secondary effects would raise significant concerns for agro-industry, environmentalists, and conservationists alike.

Industry-Based Initiatives

Much of the recent ethical discussion has focused on the impacts of introducing new transgenes into the environment and their effect on production and yield. However, the performance of different crops is the consequence of multiple variables which include but are not limited to average rainfall, irrigation, drainage, nutrient content and composition of soil, drought, wind, insect control, weed management, choice of pesticides (herbicides, insecticides, fungicides, etc.), existence of hedgerows or borders, local biodiversity, crop rotation practices, and harvesting times.

Industry-based actions to curtail cross-hybridization between commercial crops using biotechnologically produced hybrids and to protect the interests of traditional and organic farmers have grown in recent years. The group, Save Our Crops Coalition, aims at curtailing the inadvertent application of synthetic chemicals or fertilizers to organic crops or the inadvertent spread of these to traditionally grown crops. Other initiatives based in industry and cited in trade journals are to not to overuse one pesticide chemical (strongly discouraging a one-size-fits-all approach to weed management) and instead suggest that farmers identify weeds and adjust their control to the specific needs of their particular crops (Successful Farming 2012). Targeting the herbicide to the weed rather than overusing the same herbicide has been an increasingly adopted practice since the discovery of the resistance to herbicides of the group triazine of more than 55 different weeds (Thalmann and K  ng 2000).

Trade journals and the experience of individual farmers suggest that there are other impacts that farmers need to be aware of with regard to the management of hybrid crops. Increases in yield

and desirable plant phenotypes such as stronger stalks and resistance to drought, pests, and herbicides used to control weeds have other impacts that affect practical crop management. Some hybrid plants have stronger stalks and have more biomass and plant residues than do traditionally produced crops. Others are bred to have less biomass and send more energy to the grain head. Because of this, hybrid plants also impact farmers' choices in buying equipment essential to harvesting and tillage. Some hybrid crops require more horsepower and torque from farm machinery to manage plant residue after harvest and remove crops during harvesting and by tillage equipment.

Farmers are aware of the mutability of crops due to accidental cross-pollination which can lead to the spreading of a particular undesirable trait throughout multiple hybrids. Practical measures to guard against this include increasing the biodiversity of crops planted in fields and ensuring that different kinds of crops are planted in the same field at different times of the year. This latter practice is called *crop rotation*. Rotating crops in the same field reduces the potential degradation of the soil. By alternating crops, the nutrient composition of the soil can be maintained or improved. Crop rotation also limits the population of crop-specific diseases and insect pests and potentially reduces the number of superpests that may develop.

In addition to these considerations, trade journals have also expressed concern over the use of old herbicides with new transgenic crops. The continued use of old herbicides in an industry with new biotechnological solutions appears to some as incongruous. These herbicides are being used, in part, because of the limits on research, testing, and introducing new chemicals into crop production (Successful Farming 2012).

Current discussion reflects the confluence of three different modes of investigation: (1) How research and biotechnology can provide new ways of understanding the mechanisms of hybridization, (2) how these mechanisms can be used in practice to increase agricultural production, and (3) how we *should* use these new technologies. The latter ethical question requires that

biotechnological research and agricultural practice link up in ways that are reciprocally informative. That is, finding an ethical route to maintain sustainable agriculture using hybrids in agriculture depends not just on research methodologies and biotechnological strategies of increased production but also on the business of being a farmer.

Summary

The interplay between the theoretical understanding and the practical knowledge in agriculture has been both complimentary and adversarial in the understanding and use of hybrids in agriculture. The benefits and potential risks to the environment, the agriculture industry, worldwide food crop production, and global socioeconomics are just some of the ethical issues that have arisen with the use of hybrids in agriculture. An understanding of the biotechnology currently in use as well as the history of research on hybrids beginning with Fairchild, Buffon, Mendel, Mayr, and McClintock has been provided in this entry. This, combined with a survey of industry management strategies, international discussion of the use of biotechnologically produced hybrids, as well as farmer-led concerns with unintended cross-pollination fills out a picture of the role of hybridity in agriculture. Key cases for ethical discussion include polyploidy hybrid use in agriculture, herbicide-resistant crops, and insect-resistant crops such as Bt-cotton and Bt-maize. Ethical discussions have also centered on the practice and restriction of seed procurement, distribution systems, biotechnology development, and the effects of the use of hybrid organisms on both traditional agricultural farmers. Concerns over the potential for unintended negative effects such as the development of superpests and superweeds have also been discussed. These have wide-ranging consequences that affect both the general public and the environment. Approaches intending to address the multiple aspects of the use of hybrids in agriculture in ways that are ethically responsive to concerns of all cohorts have been reviewed. These have arisen from the agricultural industry itself, trade

journals, coalitions of farmers and the public, biotech companies, and the United Nations FAO. These suggest that to be successful, any integrated ethical approach must be mindful of a range of agricultural practices, communities, and future impacts.

Cross-References

- [Agricultural Ethics](#)
- [Biodiversity](#)
- [Cross-Contamination of Crops in Horticulture](#)
- [Farmer-Scientist Knowledge Exchange](#)
- [Farms: Small Versus Large](#)
- [Food Boycotts](#)
- [Food Security](#)
- [GMO Food Labeling](#)
- [Herbicide-Resistant Crops](#)
- [Intellectual Property and Food](#)
- [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- [Pest Control](#)

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In Vitro Meat

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Synonyms

Cultured meat; Lab meat

Introduction: A Strange Yet Hopeful Idea

The idea of in vitro meat (IVM from hereon), or cultured meat, is to grow meat from animal cells with the help of tissue engineering and/or 3D printing technology.

The basic idea is not new. Early in the 1930s, when the French scientist Alexis Carrel attracted attention by having kept chicken tissue alive for over 20 years, Winston Churchill (1932) wrote that in the future “we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under a suitable medium.” Some decades later, the Dutch business man Willem van Eelen, who started brooding on new forms of food production after his experiences of severe hunger in Japanese internment camps during the Second World War, was another visionary.

For many decades, IVM was just a strange and hardly known idea. But then the problems associated with meat started to increase. From the 1970s onward, animal suffering has been a growing issue. Problems concerning animal disease and the sustainability of raising livestock followed. As a growing and more wealthy human population is expected to double its global meat consumption in the coming decades, all these problems will get worse. Not surprisingly, the moral reputation of meat has declined, at least in Western countries, where not only vegetarians but also many meat eaters are increasingly ambivalent about meat (Holm and Møhl 2000). In this growing sphere of urgency, IVM has stopped being just a wild idea and has become a source of societal hope. For example, in 2003 the Australian artist Oron Catts presented “victimless meat” in an artwork on IVM called *Disembodied Cuisine* (Catts and Zurr 2013), and in 2004 the American student Jason Matheny founded the organization *New Harvest* to propagate the development of IVM. In 2008 PETA (People for the Ethical Treatment of Animals) announced a one million dollar prize for bringing in vitro chicken meat to the market in 2012 (PETA 2008).

But IVM is not being developed that fast; so far, money for IVM research has been hard to obtain, and research interest has been modest. In the early years of the new century, NASA put some money into an IVM project with goldfish tissue, but it was dropped after a while. From 2005 till 2009, the ministry of Economic Affairs

in the Netherlands subsidized a research project, led by Henk Haagsman of Utrecht University, that involved four Ph.D. projects. The results helped to illustrate the in-principle viability of IVM, but also made it clear how many obstacles still need to be overcome and that intensive research efforts will be needed, for example on the growth and differentiation of (stem) cells, the techniques of tissue engineering, the development of suitable and affordable growth medium, and on scaling up. The same ministry subsidized a modest follow-up project at the universities of Utrecht and Wageningen (2010–2014) that also includes the study of social responses and moral considerations. There are some other projects – for example, one subsidized by PETA – but they are scarce so far and modest in size.

Meanwhile, product-oriented efforts try to speed up the process. In 2011, Gabor and Andras Forgacs founded the company Modern Meadow, which aims to make cultured meat as well as leather with the help of 3D printing technology. In the summer of 2013, Mark Post of Maastricht University presented the world's first in vitro meat hamburger, made with imperfect existing technology, that was subsidized by Google founder Sergey Brin. The presentation aimed to show that it can be done in principle and to attract attention and money for intensified research efforts.

Both Post and Haagsman estimate that even with generous funding it will take 10–20 years for tissue-engineered IVM to enter the market.

This short and incomplete history may suffice to illustrate that so far the development of IVM is more a matter of societal (mainly moral) pull than of technology push. The idea of IVM generates great societal interest, though it is also still a strange idea, at least initially. First responses in the Netherlands, encountered in the context of the Utrecht-Wageningen project mentioned above, were mostly of three kinds, of which the first two, “wow” and “yuck,” illustrate how surprising the idea of IVM is, while the third, “interesting, but very technological,” is less immediate and more ambivalent (Van der Weele and Driessen 2013). The *wow* response is the most frequent one. It represents moral hope, primarily

because of the prospects for animals. *Yuck* responses often turn out to rest on associations with “messing around with meat” or with genetic modification – GM debates clearly cast their shadow over IVM, which is why IVM researchers avoid GM technology. Immediate responses such as *wow* and *yuck* are invariably followed by more mixed and complicated responses, sometimes very quickly. For example, one person who said “yuck!” went on to say “but wait a minute, when I think of what it might mean for animals it already looks different”. Likewise, unqualified enthusiasm is often followed by questions on what the technology might look like. What results in many cases resembles the third and ambivalent category, in which moral hope is mixed with reluctance about food becoming ever more technological, about the “unnatural” character of IVM, or about worries about industrialized food production. These mixed thoughts and feelings will return below.

IVM and Ethics

Though IVM does not exist yet, at least two serious attempts have so far been made to gain some overview over potential gains and losses. One of them involves a moral evaluation, and the other is a first tentative life cycle analyses.

Hopkins and Dacey (2008) reviewed moral arguments for and against IVM, which they framed as a potential option for people who want to eat meat yet do not want to contribute to animal suffering. The arguments for cultured meat, they say, are very clear and straightforward and “in essence the hopeful outlook of a technological fix”; IVM could eliminate much animal suffering and environmental damage, and it might produce healthier food. Yet there are also objections and hesitations, to which they devote the heart of their paper. They discuss worries about unnaturalness and about yuck responses and the idea that technological solutions amount to “moral cowardice – choosing a quick fix over genuine moral work”. In their analysis, none of the objections carries enough weight to counter the potential gains. The alleged “unnaturalness”

of cultured meat may be precisely what we are looking for, since at least some of the “natural” ways of producing meat are so problematic. *Yuck* responses are interesting and important but can hardly count as final judgments, and the argument from moral cowardice at best “suggests we should not be so naïve as to think technology can simply solve all our problems; it should not however lead us to think that technology cannot be a powerful moral tool”(p. 591). After weighing pros and cons, they conclude that cultured meat is not just interesting, but “something we may be morally required to support.” They also note, more generally, that morality need not simply respond to new technologies as they arrive; it can also be guiding: it may “champion and assist” in the development of technologies as steps towards a better world.

Tuomisto and Teixeira de Mattos (2011) undertook a tentative life cycle analysis (LCA). Assuming that it will become possible to grow IVM tissue on the basis of algae, they predicted that IVM will come with huge environmental gains. Compared with conventionally produced European beef, the authors estimated that energy use will be reduced by 45 %, greenhouse gas emissions by 96 %, land use by 99 %, and water use by 96 %. As a result of the gains in land use, cultured meat could greatly contribute to feeding a future world of nine billion people, while at the same time large areas of land could be given back to nature through reforestation or otherwise. The estimations have contributed considerably to the force of moral pleas for IVM.

These attempts to gain some overview are helpful, but they also have limitations; acceptability of IVM as a technology and sustainability aspects do not exhaust the moral issues. IVM is a potentially very radical innovation that may lead to great changes in meat production and consumption practices, with perhaps profound consequences for large groups of people. For example, might IVM lead to a world without any form of husbandry and thus have abolitionist consequences for human-animal relations? Or will it rather only count as a replacement for factory farming, while creating more room for traditional small-scale husbandry? Either way, the consequences for farmers

and existing meat industry will be huge, and transition processes will be complex. Nutritional aspects of IVM are also very uncertain; the development of IVM may remain focused on making it as precisely like “traditional” meat as possible, but IVM might equally be developed in different directions, with extra ingredients or other modifications, for example, for health reasons – think of the addition of vitamins or the removal of saturated fat. The results need not resemble meat as we know it; in this respect, too, IVM is a potentially radical innovation.

IVM is still an open idea in many ways; it is an “as-yet undefined ontological object” (Stephens 2010). Specific consequences and impacts are therefore highly uncertain, and their moral evaluation would be a speculative affair at this moment. In that situation, the development of more concrete scenarios of IVM might be helpful for getting some idea of how a future with IVM might or might not be attractive. Ethics, apart from trying to assess pros and cons of IVM as an idea, could also help to explore and morally probe such scenarios. This role fits in with Dewey’s pragmatist view of ethics as a form of inquiry, in which, apart from thinking and feeling, the imagination takes a central position: “the first intimations of wide and large redirections of desire and purpose are of necessity imaginative” (Dewey 1980/1934, pp. 348–349). The process involves what Dewey called “dramatic rehearsal”: thinking through possible futures, with the help of new ideas, their combination, doubts and objections, positive and negative feelings, as well as argument and reflection. In the same pragmatic spirit, Driessen and Korthals (2012) stress the “world disclosing” effects of new technology, with IVM as an example, pointing out, for example, how technologies can function as art and open new ways to morally relate to the world. For this interaction to begin, it is not necessary for the new technology to have materialized; the mere idea of IVM turns out to be enough to stimulate thought on our present meat consumption and its alternatives.

In current debates, the thought of IVM is already taken up in several ways. The next section distinguishes three emerging moral profiles in societal debate, while the last section

exemplifies in some more detail how moral inquiry may take an active role in further developing these and other future scenarios, thereby contributing to a larger search space for future protein practices.

Three Profiles for IVM

The prospective evaluations mentioned above illustrate that expectations of IVM run high. In theory, IVM might perhaps alleviate all the problems of meat simultaneously. In actual debates, however, specific priorities can be distinguished that take IVM in different directions and that can be associated with different moral “profiles.” One main profile for IVM prioritizes animal considerations, while a second one focuses on sustainability. Both tend to neglect uneasiness about the technological character of IVM. A third profile, “the pig in the yard,” does address that uneasiness, at least in part.

1. A “vegetarian” profile. For many people, the first and most significant characteristic of cultured meat is its promise for animals in a world that eats ever more meat. This is why animal organizations tend to embrace the idea, often after some reluctance about the use of animal cells in IVM production. PETA director Ingrid Newkirk wrote an essay for the New York Times (Kaminer 2012) in which she said that IVM might make her eat meat for the first time in 40 years. When PETA conspicuously encouraged cultured meat through the announcement of an IVM contest, the announcement also said that anyone who doesn’t know a test tube from a champagne flute can still help animals by eating plant-based products. For PETA, cultured meat is a step on the road to a vegetarian or vegan world.

This perspective also meets with criticism. According to Simon Fairlie (2010, pp. 228–231), who sees IVM as part of a vegan strategy, the convergence of technological developments such as genetic manipulation, synthetic biology, and cultured meat amounts to a horror scenario that will perhaps satisfy vegans but that will decisively estrange us

from animals and nature. Fairlie more generally denies that veganism is the best answer to the unsustainability of meat eating. Instead, he proposes to return to more rural and traditional forms of agriculture that would include small-scale animal husbandry and a significant decrease in meat consumption, but would explicitly exclude new technology such as IVM.

2. A sustainable profile. Global meat consumption is very unsustainable. This can quantitatively be illustrated in many ways, starting from the inefficiency of producing animal proteins from plant proteins (with conversion losses of 60–90 %). Now that 70 % of all arable land is already used directly or indirectly for livestock, and a doubling of meat consumption is expected in the coming decades, anyone can do the math, says Mark Post; it’s easy to calculate that we need alternatives. “If you don’t do anything, meat will become a luxury food and be very, very expensive” (Sample 2012). If the aim is to keep meat available and affordable for everybody, this is a problem.

In this profile, safeguarding future meat consumption is the goal, its (environmental and economic) unsustainability is the problem, and IVM is the solution. In order to fulfill its sustainability promise, the aim of IVM development is not to satisfy vegetarians or vegans (after all, they are not part of the meat problem), but meat eaters.

This profile aims to align IVM with mainstream and quantifiable trends about growing meat consumption in a world of growing numbers of people with an increasing demand for meat. But this profile, too, has its unattractive sides, especially for people who think that the problems of meat can only be solved by new consumptive values. IVM would allow the continuation of morally problematic consumptive attitudes.

Thus, different as these profiles are, in societal debate they are subject to similar misgivings about technology: technology will not solve our real problems; we should rather aim for changes in agricultural practices, food values, and/or our consumptive behavior.

Such worries about technological fixes in food are widespread, and they are associated with concerns about our growing estrangement from food, animals, and/or nature.

3. The third profile, “the pig in the backyard,” at least partially addresses the worries about technology. It centers on the idea of an animal that is held as a pet and also serves as a donor of muscle stem cells that are turned into IVM at home or in a local factory. This idea regularly turns up in conversations on IVM, and it tends to inspire a remarkable degree of enthusiasm. This may have something to do with the unexpected combination of many good things that have always seemed incompatible. The pig in the backyard or on an urban farm seems to provide a glimpse of a possible world in which we can have it all: meat, the end of animal suffering, improved relations with animals and simple technology close to our homes – be it a local factory or a machine on the kitchen sink. Either way, this profile fits in with trends to reestablish our contacts with food and nature through urban farming. The urban pig that is a pet and an IVM cell donor at the same time creates the prospect that factory farming is not replaced by the abolitionist vegan prospect in which animals are removed from the human life world, but instead by increased and improved human-animal relations.

While in the first two profiles cultured meat was an answer to a clear problem, animal suffering, and unsustainability, respectively, the third profile is different in that the pig in the yard does not seem to be an answer to one main problem, but rather results from a kind of tinkering with problems, desires, solutions, objections, and societal trends. It may come up as an alternative to both intensive husbandry and the abolitionist tendencies in vegan proposals. It may also arise from the desire for local and low-key technologies, which most people at first thought tend not to associate with IVM. Interestingly, this scenario does not raise worries about alienating technology. On the contrary, it is typically seen as a way to establish more intimate contact with the sources of our food. This suggests

that thinking about the future of IVM should not only address products; production methods are just as important.

These three profiles do not exhaust the possibilities. For example, human health might be conceived as the core value of a fourth moral profile, while global food security might define a fifth. But three profiles suffice to show that the idea of IVM can be developed in different directions. Such divergence is constructive and helpful in order to design and think through future forms of IVM, meat, and protein consumption in general. The next paragraph sketches a more active role for design and ethics in this process.

Ethics Through and as Design

Thinking on cultured meat started by simply transplanting ideas about meat to cultured meat. Illustrations often showed an ordinary piece of meat and added an in vitro element, for example, by simply depicting a steak in an Erlenmeyer flask. Yet at the same time, this in vitro component turns IVM into something very different. As noted above, IVM is a potentially very radical innovation that could lead to large changes in the production as well as the consumption of meat, or proteins more generally. And it may do so in very different ways. While it is now often assumed that in order to count as an alternative for meat it has to look and taste exactly the same as meat as we know it, the possibilities to design very different products (in terms of form, texture, color, etc.) are almost limitless. The options invite a play, first imaginary, potentially also real, with form, color, additions, and taste, as well as with various production processes, moral profiles, marketing profiles, and consumer practices.

Design makes scenarios available in concrete and lively ways, which is helpful for elaboration and reflection. In this search process, scientists, ethicists, designers as well as many others can play a role. The active role of science is evident here; the role of designers and ethicists deserves some illustration.

At the University of Eindhoven, IVM is one of the themes in the industrial design program *Next*



In Vitro Meat, Fig. 1 Four student designs of cultured meat in the context of *Next Nature* (Courtesy of Koert van Mensvoort)

Nature, led by Koert van Mensvoort (Van Mensvoort and Grievink 2012). From the fall of 2011 onward, students of industrial design have been working on many different ideas of what cultured meat could be, what it might look like, how it might be produced, how it might be packaged and marketed, etcetera. The images in Fig. 1 show some of the results. Mark Kanter's *Magic Meat* is essentially a marketing device: it is meant to seduce children; Frank van Valkenhoef devised *Origami meat* to illustrate how 3D-printed layers of cells might be folded in different ways; Ilse Maessen's *Paint with meat* depicts IVM of different color tubers with which paintings can be made (to be baked in the oven), while Alberto Gruarin's idea in *Knit the new meat* is that different constructions can be made starting from a narrow thread of muscle cells.

Ethics too can help in this process, by exploring if and how the production and consumption of IVM can be developed in morally attractive ways. Reflection on public debate and sorting out the arguments is one way to do so, with the distinction of moral profiles as an example. But ethicists can also play a more active role, for example, by organizing workshops in which designs such as shown above are used to wake up the imagination for thinking through different futures for IVM (Van der Weele and Driessen 2013). In such a context, IVM also turns out to act as a catalyst for new perspectives on meat. This need not surprise; since IVM is meant as an alternative for meat, thinking about IVM necessarily interweaves with thinking about meat. For example, thoughts about the alleged “unnaturalness” of cultured meat almost invariably lead to the question how natural conventional meat really is (Welin and Van der Weele 2012).

Another example is the pig in the backyard; this scenario is not only about producing cultured meat, but at the same time addresses our present relations with animals and the way we keep them in husbandry practices.

By undermining present self-evidences, the idea of IVM also unsettles existing lines of polarization and moral division; it offers new options for finding common ground. Although the ultimate goals of vegans, ambivalent meat lovers and sustainability-oriented IVM researchers may be different, IVM fits in with all these perspectives, uniting them in joint searches to a certain extent however uneasy the alliances may be.

The mere idea of cultured meat thus opens up new search space, by stimulating creativity and new alliances. As this entry has been emphasizing, ethics as a form of pragmatic inquiry may join and strengthen this search process through reflection on existing ideas and exploration of new ones.

Summary

The basic idea of in vitro meat (IVM) is to grow meat from animal cells with the help of tissue engineering and/or 3D printing. At present, IVM is an idea under research that is still far from the market. It is not a new idea, but only recently, due to the increasing problems of meat, it has become a source of moral hope rather than a strange idea: tentative evaluations have made it clear that it holds great promise for all the major problems associated with meat. Though in theory all these problems might be addressed simultaneously, in actual public debate three different moral profiles can be distinguished. Meanwhile, it is still very

open what kind of product in vitro meat will become and how it might be produced. In this situation, an exploration of future scenarios with and through design is a helpful activity. Ethics as a form of pragmatic inquiry can join and strengthen this search.

Cross-References

- [Aesthetic Value, Art, and Food](#)
- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Environmental Ethics](#)
- [Food Security](#)
- [Meat: Ethical Considerations](#)
- [Population Growth](#)
- [Sustainability of Food Production and Consumption](#)
- [Synthetic Meat](#)
- [Urban Agriculture](#)
- [Vegetarianism](#)
- [Water, Food, and Agriculture](#)

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Industrial Food Animal Production Ethics

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Synonyms

Animal agriculture; Concentrated animal feeding operation (CAFO); Ethics; Factory farming; Philosophy; Public policy

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Introduction

Over the past 50 years, animal agriculture in the United States (USA) has transformed from an extensive model characterized by many small family farms to an intensive, industrialized model. This industrial model – sometimes called “Industrial Farm Animal Production” (IFAP) or more colloquially “factory farming” – is characterized by frequent corporate ownership, economic consolidation, and vertical integration; the extreme confinement of large numbers of animals; the use of “technological sanders” such as growth-promoting antibiotics; the use and long-distance transport of remotely grown concentrated feedstuffs, instead of forage or pasture-based feeding; and tight control over the breeding, feeding, and living conditions of animals so as to achieve the greatest production at the lowest cost and in the shortest amount of time (Singer 2002; Singer and Mason 2006; Foer 2009; Pew 2008). This model has successfully produced a large supply of cheap meat and dairy but at significant costs to animal welfare, the environment, the risk of zoonotic disease, the economic and social health of rural communities, diet-related disease, and overall food abundance.

Over the past 40 years, numerous ethical critiques of IFAP have been published, which discuss the various costs outlined above, though often with a predominant focus on animal welfare (e.g., Regan 2001, 1983/2004; Pluhar 1995; DeGrazia 1996; Singer 1980, 2002; Foer 2009). With very few exceptions, these critiques have concluded that IFAP is morally indefensible. This entry will briefly review the costs of IFAP, the ethical critiques that have been and could be levied against it, and also a few attempted defenses.

The Costs of IFAP

IFAP is associated with numerous and significant costs to animals, humans, and the environment. Here these costs will be briefly reviewed. Because space prohibits a detailed exploration, the reader is encouraged to review the cited

resources. First, IFAP exists to provide large supplies of cheap animal products to the consumer public, and this is often touted as an important benefit by the industry itself. However, populations in the developed world are currently struggling with high rates of obesity and chronic disease, and evidence suggests that this is in part due to diets containing large amounts of animal products. Animal products are our main source of saturated fat and our sole source of dietary cholesterol – important risk factors for many of our chronic diseases (Akhtar et al. 2009; Walker et al. 2005). Emerging evidence suggests that plant-based diets offer benefits as compared to omnivorous diets as concerns lower body mass index and all-cause mortality and a lesser incidence of type-II diabetes, hypertension, and certain types of cancer (ADA 2009; Craig 2009). Properly planned plant-based diets can meet nutritional requirements for all stages of life (ADA 2009), and furthermore such diets are comparable in cost to omnivorous diets (Hyder et al. 2009). Therefore it would be better for the public’s health for most persons to transition to diets containing little or no animal products.

Second, many persons in the world already suffer from malnutrition, food insecurity, or even starvation, and these problems will likely only worsen as the global population grows. While these are multifactorial problems, increasing the available food supply can only help to remedy them, and IFAP represents an extremely inefficient way to produce food. The (sometimes overwhelming) majority of the corn, wheat, and soy crop are used to produce feed for animals in concentrated animal feeding operations (CAFOs), and these animals convert only a fraction of the protein they consume into edible meat. For example, the US livestock population consumes more than seven times as much grain as is consumed directly by the entire American population, and the amount of grains fed to US livestock is sufficient to feed about 840 million people who follow a plant-based diet (Pimentel and Pimentel 2003).

Third, IFAP contributes significantly to climate change and environmental pollution. Animal agriculture contributes anywhere from 18 %

to 51 % of global anthropogenic greenhouse gas (GHG) emissions (UN FAO 2006; Goodland and Anhang 2009). It is also the leading cause of ammonia pollution in the United States, at about 75 %, which can affect community quality of life on a regional scale. Locally, particulate airborne emissions from IFAP facilities significantly affect rural community health (Pew 2008).

Animal agriculture consumes 70 % of the world's groundwater resources (UN FAO 2006); IFAP uses 5-fold more water than extensive animal agriculture and 100-fold more water than plant-based agriculture (Pew 2008). This is exacerbating dangerous water shortages and depletions of the water table already present in some parts of the United States and the world (Pew 2008). Agriculture is the leading cause of waterborne pollution, and much of this is due to runoff of manure from IFAP facilities into waterways. IFAP produces 500 million tons of manure, more than three times that of the entire human population (Pew 2008). This leads to contamination of major waterways, leeching of nutrients from the soil, and dangerously low levels of oxygen in the water (hypoxia) that can result in major coastal dead zones (Pew 2008). Agriculture uses a large amount of fossil fuels, with between 4 and 39 kcal (average 25) of fossil-energy input required for 1 kcal of meat output. By comparison, 1 kcal of plant protein presently uses 2.2 kcal of fossil-energy input (Pimentel and Pimentel 2003).

IFAP exerts a number of social, economic, and health-related costs on rural communities in which concentrated animal feeding operations (CAFOs) are located. Working conditions in CAFOs and slaughterhouses are documented to be very poor, with hard, often brutal work, high injury rates, and human rights abuses (Singer and Mason 2006; Human Rights Watch 2004). Farm workers in IFAP systems and associated communities are more likely to contract a variety of zoonotic diseases (notably including influenza). Upwards of 30 % of CAFO workers have chronic respiratory disease (Pew 2008). These health effects extend to rural communities more broadly, which are at increased risk of respiratory diseases such as asthma, zoonotic diseases, and possibly neurologic disease (Pew 2008). CAFOs

often make associated communities aesthetically unpleasant and difficult to live in (Singer and Mason 2006; Pew 2008; Foer 2009). Corporate consolidation has resulted in a decrease in economic investment in rural communities. Large farms making more than \$900,000 annually invest less than 20 % of their revenue locally, in comparison to >90 % for small farms making less than \$100,000 annually. IFAP-associated communities are associated with greater crime, poverty, and depression and a lesser sense of control and self-determination by residents (Pew 2008).

IFAP imposes massive harm upon animals. Approximately 10 billion animals are raised and killed in the United States per year to provide food. This includes about 9 billion poultry (chickens and turkeys), 100 million pigs, and about 40 million cattle (Humane Society of the United States 2012). Whether death per se harms sentient (but non-self-conscious) animals has been a point of debate among philosophers, but a good case can be made that it does under normal circumstances (Harman 2011). If this is true, then based solely on the number of animals killed, IFAP inflicts massive harm upon animals. In addition, the way modern food animals are bred, fed, and housed specifically results in a large number of "production-associated" diseases and deformities. Such maladies are too numerous to list in detail, but representative examples include mastitis, ketosis, abscesses, and lameness in dairy cattle; feedlot bloat and abscesses in beef cattle; lameness, feather-pecking, respiratory problems, sudden death, and broken bones in poultry; and musculoskeletal problems and tail-biting in pigs (Singer 2002; Singer and Mason 2006; Rollin 2009; Foer 2009).

Poultry, pigs, veal calves, and many cattle may be kept in such close confinement that they cannot walk or even turn around, as exemplified by gestation crates, veal crates, battery cages, and tie stalls. Often the animals are kept in barren environments, on uncomfortable surfaces (e.g., hard, slatted floors), and lack environmental enrichment or opportunities for socialization. This close confinement prevents the animals from satisfying most if not all of their preferences

and is associated with physical discomfort, injury, and mental distress. Because close confinement and the continual disruption of social groups lead to in-fighting among animals, pigs' tails and a portion of birds' beaks will be often cut off to prevent biting and pecking. This is typically done without anesthesia and may cause lasting pain or difficulty eating (Singer 2002; Singer and Mason 2006; Pew 2008; Foer 2009).

The US Humane Methods of Slaughter Act requires stunning of food animals prior to bleeding, skinning, and dismemberment, but does not apply to poultry, who are conscious during the slaughter process (*Humane Methods of Slaughter Act*). Both the US government and eyewitness accounts of slaughterhouse practices indicate that the Humane Slaughter Act is inadequately enforced (GAO 2010; Foer 2009). Animals may be scalded, skinned, or dismembered while partly or fully conscious. Other sadistic abuses at slaughterhouses, such as ramming animals with forklifts, beating them with pipes, chasing them into scalding tanks, stomping on them, or holding electric prods in their eyes, have been documented and do not appear to be rare, perhaps resulting from the stressful workplace environment for slaughterhouse workers and the dehumanizing nature of the work (Foer 2009).

Finally, IFAP presents infectious disease risks to the public. Between 60 % and 80 % of total antibiotic production in the United States goes to animal agriculture, with much of this representing nontherapeutic use for growth promotion (Mellon et al. 2001). Antimicrobial use in agriculture has been closely linked with the emergence of antimicrobial-resistant (AMR) strains of multiple species of bacteria; some of these antimicrobials are critical to human health. Overall, antimicrobial resistance is a serious public health problem, accounting for many emerging infections worldwide, and is associated with increased morbidity and mortality, billions of dollars in additional healthcare costs, and longer hospital stays (Pew 2008).

Furthermore, IFAP creates risks for zoonotic disease transmission, the most significant being the risk of a pandemic influenza outbreak. Both poultry and swine carry influenza viruses, the

spread and mutation of which are facilitated by the close crowding of animals in CAFOs. Mutated strains of these viruses could cause a pandemic among humans, and indeed there is reason to think that this is a reasonable probability. A 2009 influenza pandemic was of swine origin, and the 1918 "Spanish Flu," which may have killed as many as 100 million people, is thought to be partially or wholly of animal origin. Certain highly pathogenic strains of avian influenza can infect humans, and though such strains are not highly infectious at present, this could easily change (Greger 2006; Neumann et al. 2009).

Existing Critiques of IFAP

Moral critiques of IFAP and/or animal agriculture in general have been made from a variety of normative theoretical perspectives, including utilitarianism (e.g., Singer 1980, 1993; Singer and Mason 2006), rights theory (e.g., Regan 2001, 1983/2004), coherentism/common morality (e.g., DeGrazia 1996), and a feminist ethic of care (e.g., Donovan 1990/2007). To date, many if not most developed philosophical critiques of IFAP have focused on human obligations to animals and the ways in which IFAP violates these obligations. However, many of these critiques, as well as nonphilosophical reports on IFAP (e.g., Pew 2008), also emphasize the negative environmental and human health impacts of IFAP without necessarily locating these impacts within a specific moral framework, theory, or argument.

Peter Singer provided one of the first and most famous critiques of IFAP in his book *Animal Liberation* (Singer 1975/2002). Though Singer is a utilitarian, the argument that he presents in this work is based more on the common morality than on explicit utilitarian calculations. Singer argues for a principle of equal moral consideration of interests (EC), which requires that we recognize a similar presumption against causing a certain amount of animal suffering as we would a like amount of human suffering. He arrives at this conclusion based on the rejection of species or mental capacity as relevant criteria for morally

“discounting” animals’ interests. As concerns farm animals, he devotes a chapter to arguing for the conclusion that, in modern IFAP systems, “these animals live miserable lives from birth to slaughter” (Singer 1975/2002, p. 97). Given an implicit presumption of nonmaleficence against humans, this empirical conclusion, coupled with a principle of equal consideration, secures the moral conclusion that IFAP is indefensible.

In multiple works, David DeGrazia (1996) extends Singer’s common-morality approach. DeGrazia, too, argues for a principle of equal moral consideration of interests, building upon the arguments Singer presents, but overall presenting a more philosophically developed and rigorous defense of equal moral consideration. Like Singer, DeGrazia argues that IFAP causes tremendous animal suffering, that sentient animals and humans possess a relevantly similar interest in not suffering, and that our common morality strongly endorses a principle of nonmaleficence, thus yielding the conclusion that IFAP is morally indefensible. However, DeGrazia strengthens this nonmaleficence-based case against IFAP as compared to Singer by arguing that confinement and death, and not just suffering, are harms to animals.

While multiple philosophers have presented compelling cases for a principle of EC, many persons will still not accept this view, and furthermore the philosophical case for EC is not indisputable. Therefore it is significant that a rejection of IFAP on animal welfare grounds need not rest upon this principle. Elsewhere, DeGrazia (2009) and Garner (2005) have argued that we only need acknowledge that animals have nontrivial moral status in order to reject IFAP, not that we need acknowledge EC or even unequal but substantial moral consideration. This conclusion is based on a specification of nonmaleficence so as to be consistent with even the weak anticruelty ethic currently predominant in Western society, thus holding that “we should not cause massive, nonconsensual harm to animals for unimportant human purposes.”

Not only is it argued that the consumption of animal products per se is an unimportant human interest, given that plant foods can provide

adequate nutrition and also be palate pleasing, but in addition the rejection of IFAP-derived animal products (on the argument presently considered) does not rule out the consumption of animal products from nonindustrialized agricultural systems. Here the human interest at stake is perhaps a modest additional cost for such products and perhaps also some minor inconvenience in having to locate animal products from ethically defensible sources and/or to abstain from eating animal products when non-IFAP-derived products are not available. This seems to be an even less significant interest than the interest at stake in avoiding animal products entirely.

A number of moral theorists have explicitly defended the rights of animals. To say that animals have rights is not to say which rights they have. It is conceptually possible to acknowledge very limited animal rights in a way that is consistent with the prevailing (or emerging) social ethic (e.g., the right to be spared pain and suffering in the service of trivial human goals), but as discussed above even these minimal rights seem sufficient to reject the defensibility of IFAP. Some philosophers, such as Tom Regan (1983/2004), Evelyn Pluhar (1995), and Mark Rowlands (Rowlands 2002), have argued for more robust animal rights, based on inherent value (Regan), a principle of rational altruism (Pluhar), or an amended version of Rawlsian contractarianism (Rowlands), coupled with a principle of EC covering all animals with desires or a welfare (which certainly includes farm animals). These rights typically include strong negative rights against the imposition of harm and the restriction of liberty and so would rule out most (perhaps all) animal agriculture and not just IFAP. While rights views and coherentist/common-morality views may sometimes part ways in normative justification (e.g., as concerns the sacrifice of one individual to prevent the death of many), as concerns IFAP these two approaches look very similar when based on a principle of EC.

Utilitarian critiques of IFAP have also been published (e.g., Singer 1980, 1993). These critiques typically emphasize that the harm perpetrated upon animals in IFAP systems greatly outweighs any benefit to humans such systems

provide, including the benefits of employment and the pleasurable taste of animal flesh. These critiques often compare the human interest in eating animal products with the human interest in eating plant products, noting that plant-based foods can be both tasty and nutritious and that any loss in utility incurred by depriving people of desired animal foods would be relatively small and greatly outweighed by the ending of animal suffering.

However, if the question at hand is the moral defensibility of IFAP as compared also to extensive animal agricultural systems, then again the significance of the human interest being sacrificed is even lesser. Furthermore, since extensive farming systems require more labor inputs and more husbandry expertise than intensive farming systems, the transition from IFAP to extensive animal agriculture may actually *create* jobs. The switch from IFAP systems to extensive animal agriculture would also likely entail a decrease in per capita meat consumption in developed countries, which would have health benefits for such persons (see Garrett 2007). Finally, switching from IFAP systems to extensive animal agricultural systems would decrease environmental pollution, increase the quality of life in rural communities, and decrease the risk of an influenza pandemic, further strengthening the utilitarian argument against IFAP.

The utilitarian case for vegetarianism is slightly less clear but still strong. Singer (1993, pp. 132–133; see also Singer and Mason 2006) argues that non-self-conscious animals do not have a preference interest in staying alive, that it is morally unproblematic to painlessly kill animals that have lived happy lives and replace them with other animals leading equally happy lives (the so-called replacement argument), and that, since such happy animals would not be brought into existence except to be eaten, utilitarianism may identify an extensive animal agricultural system providing for excellent animal welfare as the moral ideal. This is a controversial argument, but even if it is accepted, a utilitarian can recognize other reasons for moving towards a plant-based agricultural system, some of which Singer himself provides.

First, there is a slippery slope objection: if it is accepted that it is morally legitimate to kill animals for food – a trivial purpose when not necessary – then we will come to view them as objects to use as we please. In the face of ever-present market pressure for greater efficiency and lower cost, this attitude is likely to result in backsliding into industrialized agricultural systems (Singer 2002, p. 134). Second, it has been argued that as compared to a pasture-based animal agricultural system, a plant-based agricultural system would allow a greater number of animals to live happy lives, since a plant-based system would kill fewer animals and also allow land to revert to the wild state, thereby supporting wild animals that would not otherwise exist. Furthermore, it is argued that the welfare of animals accidentally killed in plant-based agriculture (e.g., by tractors) is overall better than the welfare of even extensively raised animals (Matheny 2003).

Third, since a plant-based agricultural system would allow an additional 840 million persons to be fed, there is (assuming appropriate distribution) an immense utility gain from this (see Pimentel and Pimentel 2003; Singer 1980). Finally, given the apparent health benefits of plant-based diets as compared to animal diets, it may be the case that population health would be maximized if everyone followed a plant-based diet, further increasing utility (Garrett 2007).

Finally, a number of feminist scholars have argued for either moral vegetarianism or a nonindustrialized animal agriculture that provides for better animal welfare than IFAP. Though there is diversity within feminist ethics, these conclusions generally seem to be reached through the advocacy of an “ethic of care,” one which is contextualist rather than universalist, one which emphasizes personal relationships and responsibility over impersonal rights and obligations, and one which “requires a fundamental respect for nonhuman life-forms, an ethic that listens to and accepts the diversity of environmental voices and the validity of their realities” (Donovan 1990/2007, p. 75). Donovan asserts that “feminists must reject carnivorousism” (1990/2007, p. 76), a conclusion also supported by some other feminist scholars (e.g., Gruen 2004/2007).

However, still other scholars accept the basic commitments of an ethic of care as sketched here, reject IFAP, but defend some consumption of meat and other animal products (George 1994). Nonetheless, most feminist scholars who write about animal ethics appear to be critical of IFAP.

New Directions for Critiquing IFAP

With the exception of utilitarian critiques, existing philosophical critiques of IFAP tend to focus on animal welfare, but as discussed in this essay, the negative effects of IFAP extend far beyond this. Hence a future direction for critiques of IFAP is to build these other negative effects into non-consequentialist philosophical critiques in a more developed way. Of course, a person could simply argue that we ought not to act when so acting brings about significant, bad consequences for the environment, for animals, and for present and future humans and where the action in question serves only to satisfy a trivial human interest. This argument seems plausible enough, but philosophers may press the critic of IFAP to address a number of philosophical issues, such as the distinction between intending and foreseeing harm, the distinction between acts and omissions, our moral obligations to future generations, and the intrinsic value of the environment. These issues cannot be pursued in detail here, but a few brief observations are noted.

First, human obligations to protect and preserve the environment might be accounted for by acknowledging and defending a human right to health, insofar as an unspoiled environment (however this is understood) is a necessary precondition for human health. Such an argument can be extended to critique IFAP, given IFAP's substantial contributions to environmental pollution and global climate change (Brei 2012). Second, biocentric theories that intrinsically value non-sentient individuals, species, and/or ecosystems (e.g., Varner 1998) also contain ample resources to reject IFAP. Notably, though it is sometimes held that biocentric theories are incompatible with individualistic theories, this

need not be true: a person may acknowledge the value of sentient individuals as well as non-sentient individuals and wholes, such as species or ecosystems (Varner 1998; Jamieson 2003). Hence the recognition that the environment has intrinsic value can strengthen existing cases against IFAP, instead of being thought of as grounding an alternative case.

Third, a good case can be made for recognizing our obligations to future generations, and though establishing this leaves open the content of such obligations, IFAP's negative effects as concerns the environment, food abundance, and zoonotic disease are arguably significant enough to circumvent controversies regarding the strength of our obligations to future persons. If we have any obligations to future persons whatsoever, then arguably these would at minimum include obligations not to impose significant harm or risk upon them in order to serve the trivial interests of presently existing humans or to leave them a world in which they have a significantly harder time meeting their basic needs as compared to alternatives. Given world population growth and expected food demands, the threat of global climate change, worsening water shortages, and the increasingly concerning risk of a global influenza pandemic, it can be argued that IFAP's continuation would lead to exactly these consequences.

Defenses of IFAP

Just as striking as the many possible philosophical routes by which one might criticize IFAP is the lack of defenses offered for it. Some philosophers have questioned whether utilitarian commitments lead necessarily to vegetarianism (Frey 1983, Regan 1983/2004), but strictly speaking this is not an argument in defense of IFAP; even utilitarians who defend animal agriculture typically reject IFAP (see, e.g., Frey 1983). (In addition, arguments undermining a utilitarian commitment to vegetarianism may fail in their own right.) Some other philosophers who argue that animals have little or no moral status (e.g., Leahy 1993) seem to suggest that IFAP is not

morally defensible. Wesley Smith offers one of the few defenses of IFAP specifically that can be found in the published literature (Smith 2010). Smith's argument draws heavily from Carl Cohen (see Cohen 2001), who argues that animals do not have rights, but that humans have significant obligations to treat animals humanely; Cohen does not apply his arguments to agriculture, but Smith does. However, neither author has much to say about the content of our obligations to animals, and it is arguable that "humane" treatment is inconsistent with IFAP. (Cohen's argument is also vulnerable to a number of other criticisms; see Regan 2001 and Nobis 2004 for discussion.)

Furthermore, Smith's defense of IFAP specifically – as opposed to animal agriculture more broadly – is that it supplies cheap food to poor persons. This presumes, perhaps erroneously, that plant-based diets are significantly more expensive than animal-based diets; as already discussed, some studies suggest that such cost differences may be minimal. It also ignores the role that externalized costs (e.g., grain subsidies, environmental pollution) play in creating an artificially low market price for animal products. Moreover, though Smith defends human exceptionalism, his argument in favor of IFAP ignores the other costs that it imposes on present and future *humans*. Finally, given the other ethical objections that can be raised against IFAP, it seems wrongheaded to perpetuate it just to provide food for persons who otherwise cannot afford it. Presumably better options are available to satisfy this admittedly important goal, for example, ending grain subsidies and using such monies to directly subsidize food assistance programs.

Finally, the animal agricultural industry and organized veterinary medicine often fiercely defend IFAP from its critics, but for a variety of reasons, the arguments they typically make are problematic. First, these groups often commit themselves to highly contentious (if not dubious) claims, such as the claim that we lack sufficient evidence to causally link antimicrobial use in agriculture to antimicrobial resistance in human populations or the claim that intensive

confinement is not detrimental to animals' welfare as compared to alternative housing systems (American Veterinary Medical Association AVMA 2005, 2009). Second, these groups often ignore or downplay some of IFAP's costs, such as its contributions to environmental pollution or global climate change. Third, these groups often emphasize that IFAP provides a safe, abundant, and inexpensive food supply (AVMA 2008; Animal Agriculture Alliance). However, some evidence suggests IFAP actually compromises food safety, and there is a lack of compelling reasons to think that alternative agricultural systems will produce an unsafe or less safe food supply (Pew 2008; Foer 2009).

As concerns food abundance, IFAP produces less food overall than a plant-based agricultural system or an agricultural system where animals are only pastured on lands unsuitable for crop production. The significance of IFAP's production of cheap animal products has already been discussed. Finally, these groups often make ad hominem attacks against their opponents, such as dismissing calls for more space for farm animals as "arbitrary and emotion based" (AVMA 2008). They may also respond disingenuously to criticisms, for example, by arguing that farm-animal housing is "species-appropriate" when responding to the criticism that farm animals are not provided enough space to move around (Animal Agriculture Alliance). These tactics raise concerns about bias and credibility.

Summary

Significant evidence supports the conclusions that industrial farm-animal production is highly detrimental to animal welfare; contributes substantially to anthropogenic greenhouse gas emissions, environmental pollution, and the risk of zoonotic disease; lowers the quality of life in rural communities; lowers the overall amount of food available as compared to alternative agricultural systems; and promotes a diet rich in animal products that is detrimental to the public's health. Moreover, IFAP can be and has been critiqued from a variety of normative

ethical perspectives, while arguments defending IFAP are both infrequently encountered and vulnerable to significant criticism. The conclusion that IFAP is morally indefensible appears overdetermined.

Cross-References

- Carnism
- Christian Ethics and Vegetarianism
- Environmental and Animal Pragmatism
- Meat: Ethical Considerations
- Vegetarianism

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Industrialized Slaughter and Animal Welfare

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Synonyms

Abattoir; Butchering; Factory; Killing; Meat-packing; Processing

Introduction

Following domestication approximately 10,000 years ago, the small-scale slaughter of animals for human consumption was performed on farms, in butcher shops, and even openly on city streets.

This began to change in the Western world in the nineteenth century. Increased urbanization, a growing demand for meat, and an increasing concern over public hygiene, along with a distaste for the sights, sounds, and smells of slaughter, led to the concentration of slaughter practices in public slaughterhouses (e.g., Fitzgerald 2010). The first public slaughterhouse opened in 1818 in Paris became a model quickly emulated across Europe.

Slaughter methods and practices used in these early slaughterhouses were primarily based on practicalities. For example, to prevent worker injury, cattle were restrained and immobilized with a blow to the head (typically from a poleax) before being bled out.

However, public concern for the welfare of animals increased, particularly during the development of the humanitarian movement, with the influence of philosophers such as Jeremy Bentham, who submitted that animals may be sentient (capable of experiencing pain). This led to the development of societies for the protection of animals – most notably, the SPCA, created in England in 1824 (now known as the RSPCA) – and the search for methods of stunning that would

render animals unconscious before butchering. Several such methods, developed during the latest part of the nineteenth century, included the use of electricity, carbon dioxide, and slaughter masks applied to the head of the animals to allegedly facilitate the accurate delivery of the stunning blow (MacLachlan 2008).

While butchering processes inside these early slaughterhouses remained largely unchanged, the Chicago Stockyard slaughterhouse, which opened in 1865 in the United States, developed industrial processes to increase productivity (Fitzgerald 2010). These processes included the compartmentalization of the butchering process with workers given specific, repetitive tasks. Industrialization considerably increased the number of animals that could be slaughtered, famously documented in Upton Sinclair's 1906 novel *The Jungle*. Sinclair described the disturbing effects the industrialized slaughterhouses had not only on the workers but also on the animals.

Today, industrialized slaughter methods govern the killing of animals by the meat, dairy, and egg industries in the Western world, where the vast majority of animals are increasingly killed in relatively few, large-scale slaughterhouses owned and operated by large-scale corporations. In Canada, for example, two massive, privately owned slaughterhouses in Alberta now account for the killing of nearly 90 % of the country's 5½ million cattle.

National slaughter regulations seek to minimize the pain and suffering of animals during slaughter. In addition, the Animal Health Organization (OIE) sets international standards for the transport, handling, and slaughter of farmed animals. These regulations and standards determine which slaughter methods are acceptable and typically include a requirement to immediately stun animals before slaughter to render them unconscious.

Animal welfare research, however, suggests that these regulations and standards may not be sufficient to protect animals at the time of slaughter, particularly in modern industrialized slaughterhouses with high line speed and worker turnover rates. In addition, some species may be

excluded from protection (e.g., chickens, turkeys, ducks, and geese in the United States); ritual halal or shechita (kosher) slaughter methods, which are traditionally performed without stunning, are also often excluded. In these cases, loss of consciousness and death do not occur immediately and, therefore, are likely to cause fear, pain, and distress in animals. However, even when stunning is performed, fast-paced conditions may contribute to the cruelty routinely documented in slaughterhouses.

Killing with Prior Stunning

Most animal slaughter regulations dictate that all animals, except those killed according to halal or kosher standards, be rendered unconscious before being killed. Stunning, done by concussion, electrocution, or gassing, aims to render animals unconscious or insensitive to pain. Sticking, done by cutting the animals' throat horizontally or severing the major blood vessels arising from the heart, brings about death by exsanguination (OIE 2012). Animals are then skinned, disemboweled, and dismembered.

Regulations stipulate that to reduce pain and distress, loss of consciousness must occur immediately after stunning, and bleeding must cause death without risk of animals regaining consciousness. However, ineffective stunning and sticking procedures are common and can cause animals to experience fear, pain, and suffering.

Percussion Stunning and Animal Welfare

The purpose of percussion stunning is to cause head trauma with (or without) penetration of the brain. Penetrating percussion stunning is achieved through gunshot (most frequently, a 22-caliber free bullet) or penetrating captive-bolt devices, which fire a metal rod through the brain via a blank cartridge or pressurized air. The device is routinely used to stun cattle, goats, horses, sheep, and pigs. Non-penetrating, or mushroom-shaped, captive-bolt devices are used on cattle in addition to small animals like rabbits. These devices work by striking the animals' head with a non-penetrating bolt, causing concussion

as a result of the impact. Unlike the penetrating devices that damage the brain, non-penetrating devices cause temporary loss of consciousness, which can be reversed.

For percussion stunning to be effective, impact to the brain must occur in the area responsible for consciousness, the precise positioning of which varies between species. It also must have sufficient velocity to bring about concussion and loss of consciousness. In industrial slaughter with its focus on line speed, one or both of these requirements may not be fulfilled.

The effective stun spot within an animals' skull makes for a small target, and thus accurate placement of the stunning device or gunshot is critical. In large slaughter plants where line speed is fast and several hundred animals may be stunned per hour, the risk of mistakes and misplacement of the shots is high, particularly when fearful and trembling animals move or thrash about in an effort to avoid the weapon. These problems are compounded when workers are not properly trained or fatigued from long hours and redundant tasks.

Additionally, equipment failure presents a significant problem. During high line speed, penetrating captive-bolt devices may be used repeatedly before being cleaned. Multiple problems can occur as a result: the device may become jammed with brain matter and skull fragments, preventing the bolt from discharging or reducing the target accuracy and velocity. The fast-paced consecutive shots delivered by a penetrating, cartridge-powered stunning device produce heat, which may decrease the energy or velocity of the strike (Gregory 2008). In these cases, the failure to strike, loss in strike strength, and/or loss in strike velocity is likely to cause improper stunning. More than one shot may thus be required to stun the animals, and this may not be delivered due to high line speed.

After stunning, animals are shackled, hoisted by one hind leg, and moved to a bleeding area where their throats are partially cut. Animals who are improperly stunned, or who regain sensibility, experience a high degree of pain and fear during exsanguination. Incomplete or misplaced sticking prolongs the time required for sufficient bleed

out to cause cerebral death, causing still-conscious animals to be suspended, bled out, and butchered. In her book *Slaughterhouse*, Gail Eisnitz, who conducted and compiled interviews with American slaughterhouse workers, reports that animals routinely exhibit signs of consciousness, such as blinking, kicking, or shrieking, during the butchering process.

Electrical Stunning and Animal Welfare

Birds

Electrical stunning, or electronarcosis, is commonly used to stun birds (chickens, turkeys, ducks, and geese). While handheld electrical tongs applied to the head of each animal may be used, this method is not practical in slaughter plants processing tens of thousands of birds a day. In these facilities, birds are instead shackled upside down by their feet on a moving rail to have their heads dragged through a water bath stunning system. Many welfare issues are tied to the use of these systems.

Prior to stunning, birds are at risk of receiving painful pre-stun shocks if splashed before being submerged or if the tips of their wings dip into the electrified water – a problem particularly common with turkeys as their wings hang lower than the heads, but also frequent with broiler chickens. A recent study found that pre-stun shocks significantly affect meat quality by causing burns to the birds' wing tips, fractures to their breastbones, and bleeding in their wings, shoulders, and breasts (Rao et al. 2013). Panicked birds who raise their heads or attempt to raise themselves are at high risk of missing the stun bath completely.

Improper or ineffective stunning can also occur even with birds whose heads are properly submerged in the electrified water bath. The waveform and frequency of the current, how much the animals are subjected to, and each bird's resistance determines the efficiency and duration of the stun. For instance, low current frequencies (50–60 Hz) may induce fibrillation of the heart (cardiac arrest) and cause death. By contrast, higher frequencies may only momentarily disrupt brain activity in what can be compared to an epileptic seizure and therefore must be

applied for a longer period of time in order to induce proper stunning. It should be noted that in most slaughterhouses today, electricity is used only to stun the animals, not kill them. Birds who are effectively stunned may still recover before fully bleeding out.

Research indicates that the voltage required to achieve an effective stun must be a minimum of 120 mA per bird and that currents under 75 mA per bird should never be used (Gregory and Wotton 1990). High voltage, however, is costly and has been linked to meat quality issues, such as broken bones, broken capillaries, and blood spots. Because of this, most slaughterhouses deliberately keep voltage levels low, gaining in meat quality but greatly sacrificing animal welfare. The problem can be amplified in slaughterhouses that stun birds of differing sizes and characteristics together in multi-bird stun baths as they may have different tolerances to electricity. While some birds may present physical signs of consciousness, others may be indiscernible as improper stunning can result in the paralysis of muscles.

After stunning, the birds have their necks cut, either by automatic spinning blades or manually by workers. Un-stunned birds, and those who have regained consciousness, continue to move by lifting their heads or flapping their wings. As a result, their neck may be only partially severed, or not severed at all, by the blades.

The length of time required for bleed out is dependent on the effectiveness of the cut and whether both carotid arteries are cut. Failure to cut both arteries can add up to 2 min to the time needed for brain failure to occur; severance of only one carotid can leave the birds conscious and suffering for up to 8 min (Gregory 1984). Birds that fail to properly exsanguinate are plunged into the scalding defeathering tank before breathing has stopped. These birds are scalded or drown to death, their blood vessels bursting, turning their skin bright red (referred to as “red skins” or “cherries” by the meat industry).

As a result of these myriad welfare issues, the government of the Netherlands has set proscriptive regulations around the use of the electrified stun bath for birds. Because of this, most poultry

slaughterhouses in the country have converted to gas stunning or killing of the birds. Regardless, electrified stunning continues to be the primary means of stunning birds in most industrialized slaughterhouses.

Mammals

Electronarcosis as a stunning method is also frequently used on mammals (pigs, sheep, and calves, in particular). In the case of pigs and sheep, an electrical current is manually applied through handheld tongs by placing the paddles on each side of the animal’s head (“head stunning”) to induce a seizure which disrupts brain function and brings about insensibility. The process, however, is reversible.

“Stun kill” can also be performed by applying one paddle on the animal’s head and the other over the animal’s heart (“head to heart stunning”). Head to heart stunning causes electricity to pass through both the brain and heart, leading to both stunning and cardiac arrest, killing the animal. Head to heart stunning is thus preferable from an animal welfare perspective, but because it can lead to carcass damage is typically ignored in favor of head stunning.

As with birds, a major welfare concern with this form of electrical stunning is the risk of failing to deliver a current high enough to ensure proper stunning. This risk is significant when animals are stunned in groups and voltage is lowered to ensure the safety of the workers. A higher voltage may be used when animals are brought to the stun operator by a conveyor system which restrains their movements; however, even an adequate current does not necessarily ensure a proper stun. If the tongs are applied while the current is flowing or if they are improperly applied, the animals may be subjected to painful electrical shocks. These animals may become paralyzed, but remain conscious, or they may be stunned but regain consciousness.

An additional concern is the short duration of the stunning effect, even for properly stunned animals. Following seizure, pigs and sheep can regain consciousness in just 30–60 s. Often, the time to irreversible loss of consciousness by bleeding is longer than the duration of

insensibility produced by stunning. This means that to ensure a less painful death, the animals must be stunned, shackled, stuck, and have bled to the point of irreversible brain death before stunning wears off and the animal regains consciousness. This requirement for prompt actions might not be easily realized, even in the most industrialized of slaughterhouses.

Gas Stunning and Animal Welfare

Gas stunning may help minimize some of the stress associated with handling. Many gas stunning systems for chickens are designed such that birds enter the gas chamber in their transport crates, thus obviating the need for unloading and live hanging. Handling can also be improved for pigs as most gas stunning or killing systems allow the animals to be moved as a group into the gas chamber. Insensibility, however, may take longer than with other stunning methods, thus causing longer periods of distress, depending on the gas and concentration used.

Gas stunning is conducted either with a high concentration of carbon dioxide, or with inert gases (argon or nitrogen, in particular), or a combination of carbon dioxide and inert gas. Animals react differently to different gases and concentrations. Birds and mammals react aversively to high concentrations of carbon dioxide as chemical receptors in their brains recognize overabundance of the gas, triggering a pain response and suffocation. In birds, this presents as wing flapping, convulsing, gasping, neck stretching, or head shaking, which often lead to broken wings and blood spots. Pigs' responses include hyperventilation, intense vocalization, and escape attempts.

In an effort to reduce losses from meat damage, some chicken and turkey slaughterhouses first introduce birds to lower levels of carbon dioxide. Observers of such systems, however, have reported the same aversive behaviors when the birds reach the higher concentration of carbon dioxide. The level of the birds' consciousness in these low to high systems remains unclear.

The use of inert gases, however, alone or mixed with low carbon dioxide concentrations, appears to provide some improvements from both

animal welfare and meat quality perspectives. These gases are not recognized by chemical receptors in the brains of birds and mammals, and thus the states of anoxia (lack of oxygen) or hypoxia (low levels of oxygen) are not experienced as painful.

Dr. Mohan Raj, a veterinary scientist at Bristol University, conducted experiments which indicate that the use of inert gas (argon or nitrogen), or a mixture of carbon dioxide with inert gas, effectively stunned birds and pigs without causing distress to the animals. In one experiment, pigs entered and reentered a chamber filled with a mixture of argon and carbon dioxide to look for apples. These animals lost consciousness while eating without presenting any stress behaviors (Raj and Gregory 1995). Studies with chickens and turkeys have similar results: the process causes no sign of respiratory discomfort or other signs of distress (Raj 1996), eliminating the incidence of broken bones, bruises, and hemorrhages. When using a mixture of inert gas with less than 2 % residual oxygen, animals are irreversibly stunned in what is known as controlled atmosphere killing (CAK), eliminating the risk of recovery during bleed out.

In most slaughter plants using gas stunning, however, carbon dioxide alone is the method of choice. Reasons cited include prohibitive cost and reduced availability of inert gases, as well as worker safety concerns prevailing over animal welfare considerations.

As a result, animals stunned through gassing typically experience protracted pain before loss of consciousness is achieved, the duration of which varies between individuals. Therefore, in large commercial slaughterhouses, it is impossible to ensure all animals leaving the gas chamber are properly stunned.

Killing Without Prior Stunning

While the majority of modern industrial slaughter plants use a two-step stunning and killing process to slaughter animals for food, halal and shechita slaughterhouses (which kill according to Muslim and Jewish laws, respectively) kill animals by

slicing the throat through a single incision without prior stunning. Defenders of halal and shechita slaughter state that the process is humane, claiming it is fast and that the single incision does not cause acute pain. Both statements, however, are debatable.

Brain function does not immediately cease following a cut to the throat. The time required to lose consciousness through bleed out may take up to 2 min for cattle. In addition, a “ballooning” mechanism may occur where blood clots form at the severed ends of the carotid arteries (Gregory et al. 2008). These clots obstruct blood flow, slowing blood loss from the brain and extending the length of time required for animals to lose sensibility. Depending on the location of the cut, loss of consciousness might occur only after several minutes.

The cut itself is also likely to cause pain and suffering. The presence of pain receptors in the area of the cut suggests that throat incisions can “result in very significant pain and distress in the period before insensibility supervenes” (FAWC 2003). In addition, animals may experience fear and panic as they consciously choke to death, aspirating blood into their lungs and respiratory tracts in an effort to breathe (AHAW 2004).

Concerns about animal welfare during slaughter have led countries such as the Netherlands, Norway, Switzerland, and Sweden to ban killing without prior stunning. While such decisions are often criticized, some religious authorities have proposed that stunning animals does not contradict religious precepts. Imam Al-Hafiz Masri, for instance, argues in his book *Animals in Islam* (Al-Hafiz Masri 1989) that the volume of blood draining out of the body after an animal has been stunned is no smaller than the volume of blood draining from un-stunned animals – one of the main beliefs impeding the implementation of stunning in halal slaughter.

The welfare concerns surrounding ritual killing continue to gain exposure as meat and poultry not labeled as halal or kosher are increasingly shown to derive from animals that have not been stunned prior to slaughter. It is believed commercial factors may be responsible as abattoirs without stunning facilities may be less expensive to run. Thus secular consumers, believing they are

buying meat from animals who were stunned before being stabbed and bled out, may be supporting a practice they otherwise would not.

Fish

Fish have traditionally been killed by asphyxiation after being removed from water, but with the recent rise in factory farming of the animals, they are increasingly being killed in other ways, with or without prior stunning (Yue, N.A.).

Fish (salmon, in particular) may be stunned manually via a blow to the head with a club or “priest.” As with concussion stunning of mammals, the blow must be positioned correctly and done with enough force to ensure proper stunning, which is often difficult with moving fish and when repeating the action over a period of time. The use of mechanical percussive systems addresses the problem of workers’ fatigue and provides a more consistent blow, but cannot ensure that all animals, particularly those with nonstandard sizes, be properly stunned.

Electrical or gas stunning may also be used. As with birds and mammals, electronarcosis can be ineffective, producing effects unlikely to last long enough to prevent fish from regaining consciousness before they bleed out to the point of insensibility (Benson 2004). Fish subjected to gas stunning show aversive behavior when exposed to high levels of carbon dioxide in the form of hyperactivity, leading to injuries (Yue, N.A.). With both electrical and gas stunning therefore, fish may be subjected to distress and possibly pain for several minutes before losing consciousness.

Killing by exsanguination without prior stunning may be performed. In this case, fish, which have their gills or tail blood vessels cut or their heart perforated, are left to bleed before further processing. Inaccurate cutting can be prevented by the fish movements, prolonging the duration of the bleeding and delaying the loss of consciousness.

Finally, some fish slaughterhouses may butcher and process fish without any attempt at rendering them unconscious. This practice was exposed in a Mercy For Animals investigation in Texas in 2010, where catfish were cut into,

skinned, suffocated, and dismembered while fully conscious (<http://www.mercyforanimals.org/fish/>).

Worker-Inflicted Cruelty

A number of studies have shown that the work of killing animals in an industrialized system may have social and psychological consequences for workers (e.g., Fitzgerald et al. 2009). The intensive, production-based nature of slaughterhouses forces workers to suppress natural feelings of empathy, desensitizing them to the fear and pain of animals. Numerous documented cases of malicious and intentional cruelty at slaughterhouses have been exposed by animal advocacy organizations worldwide. These include the beating, stomping, throwing, dragging, electrocuting, stabbing, mis-shooting, and mutilation of fully conscious animals.

While it is impossible to quantify the extent of animal abuse in slaughterhouses, conservative estimates by University of Colorado professor of animal science Dr. Temple Grandin indicate that “only about 20% of animal slaughter facilities operate within acceptable humane guidelines and the rest slip into bad practices, with a full 10% intentionally treating animals cruelly” (2011 Summit of the Horse, Las Vegas).

Summary

Food safety concerns, as well as urbanization and increased consumption of animal products, led to the mass concentration of killing of animals in large, industrialized slaughterhouses in the Western world.

The so-called humane regulations attempt to minimize the pain and suffering experienced by animals during slaughter, yet numerous deficiencies exist. In particular, ineffective or improper stunning is common in all forms used: percussive, electrical, and gas and can cause animals to experience fear, pain, and suffering.

Additionally, halal and shechita slaughter are typically performed without stunning; however,

the process arguably causes acute and protracted pain and suffering.

Worker-inflicted cruelty is increasing in the public eye, and research has shown that the intensive, production-based nature of slaughterhouses forces workers to suppress natural feelings of empathy, desensitizing them to the fear and pain of animals.

Because of these significant welfare concerns, modern slaughter methods can hardly be considered humane, and their employment should elicit further ethical debate into the mass consumption of meat and its production through industrial slaughter methods.

Cross-References

- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Islam and Food](#)
- ▶ [Judaism and Food](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Vegetarianism](#)

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Infant Feeding

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Introduction

Food studies generally ignore infant and young child feeding practices in favor of adult eating. Human infants are totally dependent on others for their food, and they survive primarily on one food – milk; however, the bioethical issues concerning infant and young child feeding are seldom explored. Food activists usually focus on adult foods, not baby foods; policy makers concerned with food security ignore breastfeeding because breast milk is neither produced agriculturally nor industrially. Because human milk is produced in the bodies of individual women, it is a greater challenge to relate it to global food issues. Infant and young child feeding is also different from adult eating because the person being fed, the baby, is not making the decisions about what, how, and when to feed. The decision on what to feed an infant is not a lifestyle choice dependent on trends and fashions, but one with vital short- and long-term health implications for both mother and baby. This entry examines the ethical, economical, ecological, and health issues implicated in the feeding of human newborns, infants, and young children.

The Ideal Diet

The first nutrients to nourish new humans pass from mothers' blood through the amniotic fluid into the umbilical cord to the fetus before birth. As the fetus floats in the amniotic sac, the surrounding amniotic fluid carries the tastes of the foods consumed by the pregnant woman available to her in the world outside the womb. After birth, babies take in their first foods by mouth. As with all mammals, the product designed to be that first food is colostrum followed by human milk.

Newborns, infants, and young children are at a vulnerable stage of development. They are exposed to harmful bacteria, viruses, and parasites and in their first months of life have few or only weak defenses to fight them. Before birth the unborn child receives protection from the

mother's antibodies. Breastfeeding provides not only the first food but also the first medicine. The antibodies in human milk help protect against diseases, and breastfeeding boosts the maturation of the infant's immune system. As the Deputy Director of UNICEF states "Breastfeeding is a baby's 'first immunization' and the most effective and inexpensive life-saver ever" (UNICEF 2013). Breastfeeding enhances child survival, encourages healthy growth and development, saves on health costs, and is far more economical for the family budget. In addition, breastfeeding increases child spacing, and for many women it is the only method to plan their families when contraception is unavailable, unaffordable, or unacceptable for religious or cultural reasons. Unlike diverse and culturally shaped adult diets, there are universal agreed upon standards about the ideal diet for human infants – human milk. The World Health Organization (WHO) and UNICEF define the standards for ideal infant feeding in the Global Strategy for Infant and Young Child Feeding (2002): babies should receive breast milk exclusively for the first 6 months of life. After 6 months, babies should be introduced to appropriate and adequate complementary foods, with continued breastfeeding for up to 2 years and beyond. Infants have the right to special protection so that they survive, grow, and achieve their "highest attainable standard of health," in order to realize their full potential.

"Children who are exclusively breastfed are 14 times more likely to survive in the first 6 months than non-breastfed children. Starting breastfeeding in the first day after birth can reduce the risk of newborn death by up to 45 %" (UNICEF 2013). Unfortunately, despite these evidence-based arguments and the well-documented benefits of breastfeeding worldwide (WHO 2006), "only 39 % of children aged less than 6 months were exclusively breastfed in 2012" (UNICEF 2013). This means that only about one third of the 136.7 million babies born annually are exclusively breast-fed for the first 6 months of life. The high rates of child malnutrition in many countries suggest that infant and young child feeding is far from ideal.

History

Throughout human history, women have always had access to alternatives to maternal breast milk, including wet nursing and the use of animal milks served in horn or terra-cotta feeding bottles. However, any alternatives to maternal breastfeeding were universally recognized as dangerous. Animal milks often played an important role in feeding babies, and many European orphanages kept goats for rearing infants. Wet nurses were carefully vetted, on the assumption that the characteristics of the nurse would be transmitted through the breast milk. However, most alternatives to breast milk used in the past were nutritionally inadequate and contributed to high rates of infant mortality (Van Esterik 1989).

In the fifteenth century in Europe, the first books appeared to provide advice on infant feeding, around the topics of breastfeeding, wet nursing, dry nursing or feeding an infant by hand (artificial feeding), and weaning (Spaulding and Welch 1994, p. 8). One authority, writing in 1804, began his advice on preventing childhood disease assuming that many women were not able to breast-feed their own children because of their delicate constitutions, low spirits, hysteric fits, or other nervous disorders; but he later revised his thinking, claiming that "*many mothers will not nurse, few cannot*" (Spaulding and Welch 1994, pp. 16, 17). Wet nursing was generally considered the best way to feed an infant if the mother could not or would not breast-feed her child.

It is likely that women were well aware of the child spacing effects of breastfeeding, although social pressure to have large families may also have influenced their infant feeding decisions. Aristocratic women in Britain and France used wet nurses to avoid the child spacing effects of breastfeeding. These women were required to have numerous male descendants to carry on the family name and property. If they did not breast-feed, they became pregnant again much more quickly (cf. Fildes 1986; Spaulding and Welch 1994).

Historically, the difference between commercial breast milk substitutes and other foods has not always been clearly defined. Semisolid

mixtures of grains, often mixed with animal milk or water, were given to infants to replace or supplement breast milk. These mixtures were fed through feeding devices made of horn or ceramic and were difficult to keep clean. It is only in the last century that improvements in commercial breast milk substitutes permitted many infants to survive without human milk.

The first milk-based commercial breast milk substitute was developed by Nestle in 1867. Early milk-based formulas often included cereals and were marketed as foods and not as liquid breast milk substitutes. These proprietary milk products competed alongside condensed and evaporated milks and custom-made preparations around the end of the century. In 1928, Gerber developed and marketed specialty foods for babies such as strained vegetables and fruit. In the 1930s, strained baby foods were sold in patented vacuum-sealed clear glass jars, replacing lead-soldered metal cans. Commercial baby foods, often called “solids,” were frequently used as breast milk substitutes and were given too early, replacing more nutritious breast milk. Since their development, there has been a steady decrease in the age of introduction of solids to infants. In North America, parents often take pride in seeing infants eat commercial baby foods at increasingly early ages. In France, doctors advised giving artichoke purée to infants at the age of 6 weeks to develop their gastronomic discernment – breast milk was thought to be too monotonous and bland!

Over the next 20 years, the use of commercial baby food increased in middle- and upper-income North American homes, where it was used not just to supplement but also to substitute for breast milk. Specialty products such as preterm infant formula were developed in the 1960s. The 1980s saw the development of fortifiers to adapt human milk for low-birth-weight infants for use in intensive care nurseries. Mothers’ own milk is now recognized as the standard of care for premature infants, with pasteurized or fresh donor human milk used when mother’s own milk is not available. More recently, soy-based products have come onto the market, along with follow-on formulas for older infants. Since 1980, companies

have been trying to add components to create the impression of improving infant formula and making it closer to human milk. These include probiotics, which are live bacteria that colonize the infant’s gastrointestinal tract and are said to provide benefits. However, in their review and comment, the Committee on Nutrition of the European and American Societies for Pediatric Gastroenterology, Hepatology and Nutrition states: “At present, there is insufficient data to recommend the routine use of probiotic- and/or prebiotic-supplemented formulae.” The Committee noted: “Because most of the trials were company funded, independent trials, preferentially financed jointly by national/governmental/European Union bodies and other international organisations, would be desirable” (ESPGHAN and NASPGHAN 2011).

Global conditions of food production and distribution have increased households’ access to commercial breast milk substitutes around the world. In spite of breastfeeding protection, support, and promotion efforts by governments and civil society, the sale of commercial breast milk substitutes and baby foods has steadily increased. The global market for baby food is projected to reach USD 63 billion by 2017, after growing from USD 28 billion in 2007 to USD 41 billion in 2012 (2011 Baby Food and Pediatric Nutrition Market).

Ethical Dimensions of Infant Feeding

Infants have no responsibility for the decisions made about how they are fed. Mothers usually bear the brunt of the blame for any infant feeding problems. But society needs to take responsibility to ensure that the next generation is adequately fed and nurtured. It falls on the state to deal with failures when neither families nor communities take responsibility to make sure every child has the best possible start in life. Ideally, then, infant feeding should be guided by collective ethics. This would include the right to factual, unbiased information about breastfeeding, commercial breast milk substitutes, and other methods of infant feeding.

Ethical Complexities of Breastfeeding

Support for breastfeeding mothers should be a matter of public policy, including the right to feed in public without harassment or undue attention. Expecting women to breast-feed without providing the necessary supports, including good maternity entitlements, is unethical. It is ethically responsible to provide mothers with accurate information about breastfeeding, including the existence of chemical residues in their milk, remembering that all living beings carry a body burden of industrial chemicals (IBFAN 2013). Women should not be told that breastfeeding is instinctive, natural, or always problem-free, but be provided with access to the means to solve occasional problems such as mastitis or poor positioning. A few women have difficulties with their milk supply, even with frequent breastfeeding, but as WHO explains: “Exclusive breastfeeding from birth is possible for most women who choose to do so. It is recommended for all children except for a few medical conditions, such as maternal medication and radioactive substances. Exclusive breastfeeding as often and as long as the baby wants results in ample milk production” (WHO/UNICEF 1993; WHO 2006). Ignoring or discounting the difficulties that some Euro-American mother-infant pairs have with breastfeeding may increase the guilt mothers feel when they fail to breast-feed their infants exclusively or bottle-feed in public. This is not the intention of groups who promote breastfeeding, who need to be sensitive to the conditions that make it impossible for some women to breast-feed, such as some breast reduction surgery and active tuberculosis. Since chemotherapy drugs pass through mother’s milk, mothers must make difficult decisions when cancers are discovered during pregnancy. Until recently mothers who were HIV positive were advised not to breast-feed, but recent WHO policy directives acknowledge that exclusive breastfeeding provides the best option for infants of HIV-positive mothers who cannot use commercial infant formulas safely (WHO 2010a and b).

Another ethical dilemma concerns the use of human milk, donated by mothers for sick and

premature infants, but sold by companies or used to make products for sale for infant feeding – or to make exotic items such as ice cream and cheese made from human milk. Recent attempts by commercial companies to patent the constituents of human milk are more sinister. Advocates have petitioned to stop companies from patenting human milk components, many of which use genetic engineering techniques to genetically modify animals or plants to produce human milk components such as lactoferrin (ICDC 2013).

It is unethical to experiment on breastfeeding mother-infant pairs to conduct randomized clinical trials with control groups, when there is already agreement that human milk is best for infants. But without such clinical trials, breastfeeding research is often criticized for being unable to separate the effects of parental behavior from the effects of breastfeeding or the effects of breast milk.

It is important to guard against arguing that if breast milk is good for babies, then it is the mother’s responsibility to provide the milk. Women have prime responsibility for childbearing, birthing, and then caring for, nurturing, and nourishing infants. But to what extent are mothers responsible for decisions they make, given the lack of objective information to make an informed decision, the social pressures and criticism (“your milk is too thin, too bluish, too watery,” etc.), as well as the marketing strategies (“your formula-fed baby will be smarter, have better eyesight, have more developed brain, have whiter skin,” etc.)? It is also important to examine more carefully the role of male medical experts in framing medical knowledge about breastfeeding. Is it unethical for males to tell women they must breast-feed for the sake of their infants while ignoring the expertise of generations of mothers? This question suggests the importance of peer support from experienced breastfeeding mothers.

Ethical Implications of Feeding Breast Milk Substitutes

The regular use of commercial breast milk substitutes or routine artificial feeding instead of

maternal breastfeeding constitutes the largest in vivo experiment in human history, yet the risks inherent in the use of these products are rarely discussed even by health professionals. There is no way to know the full effects of raising human infants without human milk. This is ethically irresponsible and raises questions about what level of risk society is prepared to accept.

Baby food companies have an ethical responsibility to their shareholders and investors to maximize profits and thus shareholder dividends. To accomplish this, companies scale up their product promotions to enlarge and create new markets, increase market share, and boost sales. Their market share increases when fewer mothers breast feed for shorter durations. These industries are in the wealth creation business not the health business. Their behavior is acceptable to many people who argue for regulation-free markets and the right of consumers to choose from a wide range of commercial baby foods. But these companies should have no place in making health policy when prioritizing their profits and dividends may compromise infant health.

The companies (manufacturers and distributors) that manufacture and distribute commercial breast milk substitutes have created these vast global markets by using promotional strategies, such as advertising and discounts, augmented by apparent endorsement by the medical profession. Health professionals need protection against aggressive and subtle promotional practices.

Commercial breast milk substitutes are also far from ideal products, but their risks are not widely known. Bottles of infant formula have to be correctly prepared in hygienic conditions using clean equipment and boiled water. Feeding bottles and teats are extremely difficult to keep clean; feeding bottles, the water used to prepare the feed, as well as the powdered formula itself may be contaminated by harmful bacteria. In addition, infant formula is easily (and often) overdiluted because parents cannot afford the high cost of commercial breast milk substitutes, and this can lead to undernutrition, stunting and wasting, and increased vulnerability to diarrheal and respiratory infections. In the 1978 Kennedy Hearings in the American Senate, this was

referred to as “commerciogenic malnutrition.” Drinks with low nutrient value, such as tea, coffee, sugary drinks, and carbonated soda pop, are unsuitable for infants and young children but have been used inappropriately as breast milk substitutes.

Industrial accidents in the production of infant formulas and baby foods are not uncommon and require costly recalls; recent cases include baby rusks with pesticide traces; plastic and glass shards in jars of baby food and cans of infant formula; cadmium-laced carrots; soy formula labeled as soy but containing cow’s milk; excessive amounts of vitamin D, aluminum, lead, iodine, and melamine; as well as insufficient amounts of other nutrients in infant formula (Ljung et al 2011).

The Codex Alimentarius Commission, a joint program of the UN World Health Organization (WHO) and the UN Food and Agriculture Organization (FAO), identified harmful bacteria such as species of *Salmonella* and *Cronobacter sakazakii*, formerly known as *Enterobacter sakazakii*, found in unopened tins of powdered infant formula. Recent outbreaks of infections have confirmed that the problem is not always in the mode of preparing and filling bottles, but may be intrinsic to the industrial processing of powdered infant formula itself. Infections caused by these bacteria can be fatal for vulnerable newborns and infants or may cause lifelong disabilities (WHO 2007). The bacteria might enter infants by three routes: first, from the raw materials used in the production of the infant formula; second, from contamination by probiotics or vitamins which are added following pasteurization; and third, during reconstitution.

When soy-based formulas are made from genetically modified soy (GMO soy), concerns have been raised that the arsenic-rich poisons used in the pesticides required for their production, in combination with the phytoestrogens in soy, might increase risks for cancers. Critics of breastfeeding advocacy claim that the risk of using milk- or soy-based infant formula is overblown; *Cronobacter sakazakii* and *Salmonella* species are evidence that the risks are real. Efforts to improve infant formula are commendable

harm reduction strategies, valuable as long as they are evidence based, not accompanied by health claims, and applicable across the board; that is, if a constituent is found to be useful, it is added to all brands of infant formula, not just one brand.

Product labels are also important to consider, since instead of alerting product users to the risk of intrinsic contamination by harmful bacteria, the baby food industry often tries to make unfounded health and nutrition claims for their products. These claims can be based on misleading and unsubstantiated statements. For example, many brands introduce ingredients such as probiotics derived from animal bacteria. Even company-funded trials show no differences in growth between infants fed with supplemented and non-supplemented products. In fact, it is difficult to know what bacteria are the best probiotics, and “There is insufficient evidence to recommend the addition of probiotics to infant feeds for the prevention of allergic disease or food reactions” (Cochrane Summaries 2009). When research results are provided, they are usually from industry-funded research, another complex ethical dilemma concerning conflicts of interest.

A further risk concerns obesity and overnutrition; while baby foods and commercial breast milk substitutes can be overfed, even force-fed by hand or bottle, it is impossible to overfeed a breastfed baby. The sugar content of many infant formulas is exceptionally high, and labels carry a bewildering number of different names for types of sugars. Concerns about childhood obesity have drawn researchers to examine television advertising for high-fat, high-sugar snack foods targeting toddlers, since young children cannot always distinguish advertising messages from cartoon characters. Thus, food advertising to young children, both directly and through the food provider, is a subject of ethical complexity. Although direct advertising for infant formula was prohibited under the International Code of Marketing of Breast-Milk Substitutes (WHO 2006), advertisements for infant formula regularly appear on North American television.

Solving Problems: Improving Infant Feeding

In the twentieth century, parents turned to expert authorities to help them feed their infants. The decisions of North American parents were shaped by advice books such as Dr. Spock’s *The Common Sense Book of Baby and Child Care* (1946), by instructions from the emerging specialty of pediatrics, and by advertising for commercially produced baby foods. However, infant feeding decisions need to be based on objective and up-to-date information from independent unbiased sources; these are not really choices in the sense of choosing between different brands of ordinary consumer products such as ketchup in a supermarket. Legislation is needed to protect baby foods. The cultural perception that artificial infant feeding carries no risks is maintained very effectively by promotional material given to mothers and health professionals.

The development of mass produced baby foods has been profitable, but not problem-free. It is important to protect the growth and development of infants and young children through appropriate policy measures to guarantee the safety of their food. But as Senator Edward Kennedy asked in the opening of the 1978 public hearings in the US Senate:

Whose responsibility is it to control the advertising, marketing and promotional activities which, in and of themselves, may create a market in spite of public health considerations? When economic incentives are in conflict with public health requirements, how shall that conflict be resolved?

One answer is that governments have a duty to fulfill every child’s right to the highest attainable standard of health, as stated in Article 24 (d) of the Convention on the Rights of the Child, the most widely ratified UN Convention in history (UNICEF 1990). Mothers are not mandated to breast-feed, but governments are mandated to provide accurate information about how to attain this high standard of health. This may include education and support from all sectors of society, including information about milk banks and donor milk, a critically important product for premature infants.

In addition, parents and carers bear responsibility for reading the instructions to prepare commercial breast milk substitutes as safely as possible and feed their infant consistently. However, if the product label is in a language that is not used in the region or country or if they cannot read, are they still responsible? Formulas are expensive and if parents cannot afford the quantities needed to feed their infant and dilute the formula so that it is thin and watery and the baby becomes malnourished, is this also their responsibility?

Although some infants are at severe risk of morbidity and mortality (disease and death) resulting from the use of breast milk substitutes, unlike tobacco, these products are not lethal to a large percentage of their users. There is clearly a need for nutritious and safe formulas based on cow or soy milk for those infants and young children who cannot be breast-fed, including mothers with TB and cancers requiring chemotherapy.

Commercial baby foods are made by companies that are under no ethical obligation to promote child health – a public good. The food industry expects to make profits from the food it produces and markets to the general population, and baby food is no exception. Although many argue that foods for infants and young children should be exempt from market forces, realistically, this is unlikely to happen, considering the profitability of the market for baby foods.

There is no way to ensure safe formula feeding, only safer formula feeding. Advocates for improved infant feeding have been seeking strategies to improve the safety of baby food. These include making the dangers of infant formula more widely known to parents and health professionals, mandatory labels on products to warn that powdered formula is not a sterile product, and explaining how to prepare formula more safely by mixing powdered infant formula with water which has first been boiled and then cooled to a temperature of no less than 70 °C before further cooling to feed the infant. This is the lethal or decontamination step which is required to inactivate any harmful bacteria. WHO

guidelines explain: “Powdered infant formula, PIF, has been associated with serious illness and death in infants due to infections with *Enterobacter sakazakii* and *Salmonella enterica*. This is because, using current manufacturing technology, it is not feasible to produce sterile PIF. During the preparation of PIF, inappropriate handling practices can exacerbate the problem” (WHO 2007).

Often companies elaborate their own ethical codes of practice, usually voluntary, which spell out the company’s duties, rather than the consequences and impact of their products. There are no public sanctions for infringement against the company, only private sanctions against workers and management: <http://investopedia.com/terms/c/code-of-ethics.asp>. The shared responsibility for infant feeding requires more than a voluntary code of ethics; it requires international standards and enforceable national legislation. To address the problem of the aggressive and unethical promotion of commercial breast milk substitutes, WHO/UNICEF hosted an international meeting in 1979 on infant and young child feeding which called for the development of an international code to regulate the promotion and marketing of baby foods. Representatives of governments, technical experts, nongovernmental organizations, the infant food industry, and scientists working in infant nutrition attended the meeting, which led to the International Code of Marketing of Breast-Milk Substitutes, adopted at the World Health Assembly in 1981 as a recommendation of the highest policy-setting body in the field of international health. The recommendations for industry, health workers, and governments apply to the promotion of bottles, teats, and all breast milk substitutes, not just infant formula. But the international code was a compromise at the global level and considered a minimum requirement (Shubber 2011).

The 14 subsequent WHA resolutions “have further clarified or extended certain provisions of the Code” (WHO 2006); they require that complementary food and drinks not be marketed in ways that undermine breastfeeding (WHA 49.15, 1996). Complementary foods should not

be labeled, advertised, or commercially promoted as suitable for infants under 6 months of age (WHA 39.28, WHA 54.2, 2001) “All governments should adopt the Code into national legislation. Since 1981, 81 countries have enacted legislation implementing all or many of the provisions of the Code and subsequent relevant World Health Assembly resolutions.” (UNICEF 2011). The baby food industry is obligated to comply with these regulations even when national legislation has not been implemented.

Efforts to limit the marketing and promotion of commercial breast milk substitutes provide an example of how public advocacy has actually changed policies with regard to the role of the food industry in policy making, pointing out, for example, the conflict of interest inherent in the food industries’ participation in public-private partnerships to “solve” infant and young child hunger problems.

Summary

Infant feeding practices are important for the sake of child survival, growth, and development and also for their far-reaching effects on adult health, including chronic diseases. They are a collective responsibility for all members of global society. While maternal breastfeeding is the ideal and normal way to feed and nurture an infant, efforts continue to make commercial breast milk substitutes safer and to bring the conflict of interest of baby food companies to public attention. For example, exciting new research on biome mapping of gut bacteria and viruses is intimately connected to improving infant feeding. But who should fund such research? Industry-funded research is suspect, but should tax payers’ money be used to research constituents for infant formula rather than to offer support services for breastfeeding mothers? A safer pollution-free environment for breastfeeding mothers benefits everyone. Monitoring regulations on food safety and minimizing conflicts of interest benefit everyone. Infant feeding should matter to us all.

Cross-References

- [Child Nutrition Guidelines and Gender](#)
- [Corporate Social Responsibility and Food](#)
- [Feeding Children](#)

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Informed Food Choice

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Introduction

An informed food choice is an informed choice made about food consumption. It is a choice that is not made blindly. It is an enlightened choice made by the individual based on information, which has been obtained by the consumer.

When consumers make choices about buying something or not, or choose between different foodstuffs, information is believed to give clarity to the options. The aim of disclosing information is to increase the transparency of the food market,

which is believed to enable consumers to judge, compare, and choose foodstuffs according to the values and preferences they find relevant.

Informed food choice is an ethical concept based mainly on two ethical principles: autonomy and integrity. The idea of autonomy emphasizes the consumers' rights to noninterference and self-governance. Informed food choice is a concept that relates to and to some extent is based on the ideas of informed consent and voluntary consent to be found within medical ethics. Common to all these concepts is the principle of autonomy as a basic value to be respected. In an ideal world, informed food choices are believed to be autonomous and voluntary decisions that are neither manipulated by others nor coerced. Informed choices are, in opposition to coerced actions, based on liberty and freedom.

However, as food choices and consumption are closely entangled with social life, culture, and identity, food choices are not only about self-governance. Indeed, freedom to choose cannot be seen as an unconditional ideal when it comes to food choices. The principle of integrity refers to the life coherence of the consumer of which food culture and consumption is often a central part. Food choices are associated with caring for relatives, friends, and others and as such not independent but relational. The idea of integrity gives priority to the social, cultural, religious, and environmental contexts in which food choices are made and on which they depend.

It is common to analyze compound notions by breaking them down to basic components. This entry follows that tradition by analyzing the concept of informed food choice by examining the meanings of *choice* and *informed* in the light of the principles of autonomy and integrity.

Food Choice and Autonomy

The emergence of a massive consumer culture in affluent societies and a strong emphasis on individuality has contributed to a focus on *individual choices* (see, for instance, Taylor 1991, pp. 37–38). This development is reflected in the number of theories on choice: rational choice

theory, public choice theory, social choice theory, and economic models of consumer choice. Food choice has also been theorized (see, for instance, Hausman 2012), often with the aim to map determinants in food choices. The accent on choice in theory and also in liberal rhetoric is not only a sign of a stronger emphasis on the freedom and rights of individuals. It is also a “mise en discours” or verbalization of the duties and responsibilities of the individual: the individual and consumer rather than society and the government are through the rhetoric of free choice and informed choice made responsible for that food choices are sound, healthy, sustainable, etc.

Central to the idea of informed choice is the concept of individual freedom, which is based on the normative idea of individual autonomy. Autonomy (Greek: *auto-nomos*) literally means self-rule, self-determination, or self-government, and in this sense it was originally used normatively in the description of sovereign (autonomous) nations. With the German philosopher Immanuel Kant, the concept was given a strong twist toward the individual. The idea of individual autonomy is normative in the sense that it is not something naturally given; it is a description of a vision of ideal decision-making. Autonomy is not something inherent in man; it is rather something to strive for and which is facilitated through education and cultivation (German: *Bildung*). As is the case with autonomy, we can also say that informed food choice is not something inherent or given; it is rather something to strive for and which must be facilitated through education in food literacy.

As part of the vision of the good life, the normative concept of autonomy is based on the negative experience of personal infringement or injustice when being forced or determined by external conditions against one’s own will. Individual autonomy, as one of the oldest and most fundamental principles of civil rights, is intended to protect against infringements; it is the right of the individual to make decisions without coercion. Therefore, at a very general level, an autonomous choice is a voluntary action, which is not being forced upon one by external conditions. Hence, independence is traditionally considered

a core value of autonomy. Autonomy then becomes the capacity for independent decisions, choices, and actions, which implies independence from others or from others’ views or preferences (O’Neill 2002). This is often referred to as negative freedom or liberty: the freedom from interference by others. Therefore, choosing and free choice have traditionally been hailed by liberal thinkers, emphasizing the value of noninterference.

Based on the idea of autonomy, informed food choice entails protective arguments and productive arguments. Protective arguments are concerned with the protection of consumers from fraud, deception, manipulation, and health risks. Productive arguments may, for instance, be concerned with specific qualities of food or production practices, like organic or free-range products, which are made known to consumers (see Rippe 2000 on protective and productive arguments as well as negative and positive liberties within food consumption). In both cases, communication and the disclosure of information to consumers are the keys to enable selection of products in accordance with specific consumer demands and thus to ensure some level of consumer autonomy. Hence, the autonomy of consumers should be understood not only as a substantive right, that is, as the right to simple non-coerced free choice, but also as a procedural right for consumers with regard to access to impartial and reliable information on food and the production of food.

The autonomy of food choices can be situated between the following poles: (1) voluntary/independent actions and (2) coerced actions. These poles are extremes and are also rare positions. Food choices are usually situated somewhere in between. Choosing food is a complex act as many factors influence food choices. Attempts to map determinants of food consumption choices are numerous and so are attempts to influence food choices. Marketing techniques are used to increase sales by specific product placements in shops and supermarkets, by the use of attractive packaging, advertisements, promotion campaigns, sales, and so forth. Healthy diets can be promoted by campaigns, nudging, taxation,

prohibition, or by other means. Choices are often analyzed from three perspectives: persuasion, manipulation, and coercion.

A person can be *persuaded* or convinced by arguments to buy or eat certain kinds of food. This implies that choice is based on some level of independent and voluntary reflection. It also implies that some information is shared and may be even negotiated.

A person can be *manipulated* through, say, advertisements to buy and eat certain kinds of food, which implies that information given on the food is partial and may be incorrect.

A person can also be *forced* to eat certain kinds of foods. It is not uncommon that children dislike some kinds of foods. However, parents may ask and sometimes force them to eat it anyway. Another kind of coerced food choice can be found in some institutions, like prisons or even hospitals, where people have no choice than to eat what is served. Poor people may likewise have no other opportunity than to buy the cheapest available food.

Information and Integrity

Basically, food choices occur in two main settings: (1) shopping for food (or when growing food for oneself) and (2) eating and drinking. In both settings food choices might be made by oneself and for oneself. However, food consumption is rarely a completely solitary activity but in fact a social activity. As much as food is shared in communal eating during meals, much food shopping is not only shopping for oneself but also shopping for others. The relational aspect of food shopping comes about when, among other factors, other peoples' food preferences are taken into account (Coff 2013). Food shopping choices are thus not made in a vacuum but in social settings, where others' views and preferences are taken into consideration.

Likewise, participants in social meals care for social relations and other peoples' reactions. It is common that food manners require that food served by the host is not rejected – even in situations where the guest may not find the food tasty

or edible – as this might be seen as a sign of lack of appreciation and community feeling. This relational aspect of food consumption often emphasized by food sociologists indicates the limits of the idea of autonomy and the need to supplement it with other ethical notions. The concept of integrity can be used to normatively describe the relational aspects of food consumption. Integrity can be both a virtue describing the honesty and reliability of a person as well as describing life coherences of a person, which should not be manipulated or destroyed (Rendtorff and Kemp 2000, p. 39). The life coherence of a person is the life story of that person and the relations that person has. Because food choices and consumption do have consequences for others and the environment, food choices and consumption can be seen as expressions of relations to other people as well as to the environment (see Coff 2006 for a detailed description of the relational dimensions of food consumption).

The idea of informed food choice is that food consumers should be informed about food in order to respect consumers' integrity and autonomy and thus to enable consumers' consent. Beauchamp (2010, p. 56) states that in general the literature on informed consent proposes five elements as the analytical components of informed consent: competence, disclosure, understanding, voluntariness, and consent. This approach can be used in the analysis of what informed food choices entail on the informational level by asking the following questions:

- What are the competences needed by food consumers?
- What information should be disclosed about food?
- How should consumers be informed about food in order to enhance their understanding?
- What makes an informed food choice voluntary?
- What do food consumers want to consent to?

To begin with the questions on what information to disclose and what food consumers want to consent to, it is important to note that the idea of informed food choice concerns a specific kind of information, namely, information about the food product itself – and usually not on the food

Informed Food Choice, Table 1 Ten consumer concerns about food production (Coff et al. 2008, p. 11)

1. Animal welfare
2. Human health
3. Methods of production and processing and their impact (e.g., environmental, landscape)
4. Terms of trade (fair price, fair working conditions, fair salaries, etc.)
5. Working conditions
6. Quality (intrinsic qualities such as taste, composition, etc.)
7. Origin and place
8. Trust
9. Voice (participation)
10. Transparency

preferences of someone else that one is shopping for. This is important as it shows something about the nature of the information to be disclosed. Mapping of consumers' concerns about food shows what kind of information food consumers find relevant as issues, i.e., the issues that consumers want to be informed about, respond to, and eventually consent to. Table 1 shows a list of major consumer concerns about food. These concerns can be considered as major issues driving the demand for informed food choice. The first seven concerns can be described as substantial and the last three concerns can be classified as procedural as they refer to how information is shared and decisions are made.

The list shows the embracing character of food consumption (see also entry on Food Policy and Ethics for the embracing character of food policy). Consumers may ask for or demand informed food choice to assist them in decision-making in relation to a number of issues: avoiding or reducing health-related risks; comparing products for culinary qualities; estimating ethical aspects of a foodstuff like environmental impact, working conditions, or animal welfare; or simply to enhance trust in the food consumed. The list of consumer concerns given here is not complete, and it is most important to understand that consumer concerns are dynamic and vary among people. This means that the issues to be informed about are indeed not static but are under constant development.

Choosing food can be a highly reflective activity, based on careful judgments and evaluated arguments, which take several consequences of food consumption into consideration. Many of the issues mentioned in Table 1 are captured in the concepts of political and ethical consumption. Political and ethical consumption is a reconfiguration of the consumer's role, merging it with the citizen's role, which has led to the term citizen-consumer (Korthals 2004, p. 149). Surely, few consumers are seriously concerned about all the issues mentioned in Table 1. It is more common to be concerned about a few of the issues mentioned and take action on these or to be only superficially concerned and not take any action on it.

The issues mentioned in Table 1 can be considered as what consumers might want to consent to in relation to food. If, for instance, novel foods and other new food processing practices pose new risks to health, consumers may want to be informed about it in order to consent to it or not. The comparison of informed food choice with informed consent used in medical ethics seems especially appropriate when it comes to the consequences of food intake on health. Frewer et al. (2002) confirms that in general people want to be provided with information on food risks in an understandable and intelligent way in order for them to make informed choices about exposure to food risks.

In view of the ten concerns listed in Table 1 and given the fact that food choice is embedded in cultural, social, biological, ethical, religious, and commercial contexts, it is obvious that informed food choice can be a demanding process. Judgment of food qualities in relation to the ten concerns requires a high level of competence among food consumers. However, consumer competences vary a lot, and their ability to understand information on food can be limited by, for instance, immaturity, irrationality, or lack of interest. Food policies improving food literacy have been proposed and adopted in several countries in order to enhance consumer competencies. However, the idea of informed food choice in itself should also help competent and interested consumers to enhance their level of understanding and improve the process of decision-making.

The question on how to inform consumers is intriguing and challenging. The amount of information that can be communicated about foodstuffs is potentially enormous. Scientific uncertainty when it comes to, for instance, health claims and the environmental impact of different kinds of food production practices like organic farming and conventional farming contribute further to the opacity of information about food. The effort needed by consumers seems intimidating and immense in the light of the endless number of food products and the complex consequences that food production and food consumption have on health, environment, fair trade, etc. Furthermore, poor communication between producers and brokers in the food sector makes it even harder for consumers to find wanted information on food.

Food labels have been introduced to reduce complexity and make choices easier for consumers. However, labels have also been accused for being too reductionist: Klompenhouwer and Van den Belt (2003, p. 548) argue that labels and claims (and also advertisements) about food health run the risk of being quite superficial and also that the actual wording of a claim can be interpreted in different ways.

At the other end of the spectrum, much more detailed information on food can be presented by the use of the Internet. Codes, like the QR codes, presented on the packaging can make information on food products easily accessible for consumers by the use of QR scanners in smartphones or computers (Beekman et al. 2008, p. 289). This approach can be characterized as user-friendly as it potentially allows consumers to search for specific information relevant to them, and thereby sorting out irrelevant information. On the other hand, this approach runs the risk of information overload, which is known to reduce consumer engagement.

If informed food choice is to be of any value, it is paramount that the information provided on the food is trustworthy. To ensure trustworthy information impartial third parties can be asked to control and guaranty that disclosed information is correct.

The voluntariness of consumers' informed food choice is ensured when no unwanted influence is exerted and when consumers are not

controlled or manipulated by other persons or institutions. A kind of coerced consumer choice can occur when only one product or brand is available. In the case of market monopoly, consumers may be "forced" to buy a specific brand of, for instance, milk as the only alternative is not to buy any milk at all.

Critique of Informed Food Choice

Individual choice has been used in liberal and market-oriented rhetoric to describe in positive terms the emancipation of the individual from social ties. In this context, the word choice embodies the freedom to choose one's own individual lifestyle. In affluent, market-oriented societies, consumption choices are seen as a means for the realization of the self and for the creation of personal identity. There are, however, also critical positions deploring the development of the consumer society and the culture of choice.

Baudrillard (1998) describes what he calls a "phenomenology of consumption," pointing to the shallowness and fragility of consumption cultures. For Baudrillard consumption is characterized by self-interest and hence ignorance of the surrounding world. His phenomenology of consumption describes how attention and concern are turned toward individual consumption and satisfaction at the expense of care for other human beings and the common good.

Another critic of free choice is Schwartz (2004). According to him free choice is hailed in liberal cultures as the new dominant ideology: "[O]ur culture sanctifies freedom of choice so profoundly that the benefits of infinite options seem self-evident." However positive freedom of choice may seem, it has several ramifications on the more philosophical, existential, and psychological aspects of life. When it comes to food, the number of choice opportunities in supermarkets is enormous. As a consequence the time spent on shopping for food is increasing, as it is time-consuming to seek information and compare food products. Comparison of foodstuffs and considering alternatives may lead to other anxieties: for what if the choice made is not the

best, but turns out to be the worst choice? This is referred to as the tyranny of comparison or the tyranny of small decisions, which instead of making consumers happy makes them worried and anxious. According to Schwartz (2004, p. 221) “having too many choices produces psychological distress, especially combined with regret, concern about status, adaption, social comparison, and perhaps most important, the desire to have the best of everything – to maximize.”

Other critics of the informed choice rhetoric have argued that it is used as a liberal pretext to shift responsibility from the political system to individualized consumers, thereby making peoples’ individual lifestyle responsible for health, environmental sustainability, etc. An example of a health policy that emphasizes informed food choice and lifestyle can be found in the UK government’s White Paper on public health (HM government 2004) in which it is argued that “people want to be able to make their own decisions about choices that impact on their health and to have credible and trustworthy information to help them do so.”

Another critique stresses that not all issues are suited to individual choices. Some issues are too complex for consumers to take a stand on – such issues should therefore be regulated by public authorities. Food safety has been mentioned as being such a highly complex issue that should not be left to individual choice but rather regulated by public authorities. Scientific uncertainty, for instance, about the health effects of foodstuffs, has also been mentioned as a worry that makes individual choice by consumers inappropriate.

To carry out informed food choices is demanding in terms of knowledge, competences, and intellectual capacity. Informed food choice favors educated and enlightened people and especially those who are in possession of food literacy. Critics argue that less skilled people are unlikely to use disclosed information about food in their food choices.

Finally, the information overload of consumers is seen to be a general problem of informed food choice as consumers only have a limited amount of attention for food (Berg and Gornitzka 2011).

Labeling as a strategy to reduce information to easily recognizable symbols like organic labels or animal friendliness is widely used in the food sector. However, as the number of informative labels increases, food labels may also add to the lack of transparency on the food market.

Conclusion

Food production and consumption influence health, environment, social structures, etc. For this reason consumers are increasingly interested in information about these effects. Disclosure of information about the consequences of food production and consumption is essential for the idea of informed food choice. An informed food choice is an enlightened food choice made by the individual based on the information made available. Food choices are made when shopping for food or when eating/drinking, and information is believed to give clarity to the options by increasing market transparency, supporting rationality (the best choice), consumers’ self-governance (autonomy), and life coherence (integrity). On a practical level, informed food choice remains an ideal to strive for, as information on food often is inadequate.

Cross-References

- [Food and Choice](#)
- [Food Waste and Consumer Ethics](#)
- [GMO Food Labeling](#)
- [Political Consumerism: Consumer Choice, Information, and Labeling](#)

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institute for applied ethics at the Ludwig Maximilians University of Munich. It aims to promote a constructive discussion on ethical issues in sciences and technology, with particular focus on the interdisciplinary dialogue between natural sciences, humanities, and theology.

In Munich in May 1992, a group of experts in the field of sciences and representatives of the churches and the economy founded an organization to promote communication and understanding between the areas of technology, theology, and natural sciences. The ambition of the society (including, e.g., the protestant theologian Trutz Rendtorff and the geneticist, biochemist, and later president of the European Research Council Ernst-Ludwig Winnacker) was to deepen the interdisciplinary dialogue concerning the ethical aspects of technological, scientific, and economic development. One year later, the Institute TTN (in German: Institut Technik-Theologie-Naturwissenschaften) was founded, and the senate of the Ludwig Maximilians University accepted it as an attached institute. The Institute TTN is nowadays supported by more than 200 members, both individuals and institutions. The Institute is mainly financed via project fundraising within the framework of research promotion and via the Evangelical Lutheran Church of Bavaria as one important member of the association.

Institute Technology-Theology-Natural Sciences (TTN), Munich

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History of the Institute

The Institute Technology-Theology-Natural Sciences (TTN) is an independent affiliated

Managing Directors of the Institute TTN

Church Councillor Erhard Ratz (1993–1997)

Dr. Roger J. Busch (1997–2008)

Dr. Stephan Schleissing (2008–today)

Chairman of the Association TTN

Prof. Dr. Ernst-Ludwig Winnacker (1992–1998)

Prof. Dr. Trutz Rendtorff (1998–2003)

Prof. Dr. Friedrich Wilhelm Graf (2003–2007)

Prof. Dr. Christian Albrecht (2008–today).

Major Areas

The Institute TTN takes an interdisciplinary approach to ethical questions concerning a broad range of topics: agricultural ethics, genetic engineering in medicine and agriculture, bioethics, medical ethics, ethical questions of energy supply, etc.

Approach

- (a) Interdisciplinary research: The goal of TTN as an institute of ethical research is to encourage the interdisciplinary dialogue of natural sciences, humanities, technology, and theology on questions of societal concern. The design of TTN's projects invites different disciplines to take part in discussions and developing processes of ethical assessment. The interdisciplinary approach is understood as the most appropriate way of dealing with modern society's ethical issues and contributing to social consensus.
- (b) Ethical approach: Discussions on controversial questions are often characterized by mixed judgments and general opinions on the consequences and goals of scientific innovations in society. In this situation the researchers of the Institute TTN pursue the target to differentiate between conflicts of interests, conflicts of values, and conflicts based on different scientific evaluations and in a second step to find the right place of their respective discussion. Therefore, TTN intends to gain an access to ethical problems primarily not in a normative, but in a descriptive perspective. This does not exclude, but include a way of dealing with moral questions in a critical-constructive reference to the Christian "ethos" of liberty, individuality, and understanding of human dignity and human life.
- (c) Protestant tradition: As a scientific institute, TTN is doing its work in complete intellectual independence. Scientific freedom does not mean, though, having no position. The values of the liberal Protestant theology have characterized the self-conception of the Institute since its founding. The Institute

TTN understands the Protestant tradition as open to dialogue, seeking the dialogue with specific expertise, supporting compromises wherever that can be done, and being aware of the rich Christian heritage.

- (d) Dialogue with society: One main goal of TTN's work is promoting the dialogue between science and society free of suspicion. This relationship is permanently challenged through new technologies, risk assessments, questions of public understanding of scientific results, or questions of trustworthiness. TTN follows the approach that in order to discuss questions of technological development, the provision of scientific information is necessary, but not sufficient. Any "real" dialogue has not only to offer (scientific) facts, but has to integrate values, attitudes, and cultural traditions as well. TTN makes every effort to engage in a broadened dialogue between science and society and to bridge the gap between the discourses.
- (e) Promotion of young scientists: Last but not least, TTN sees itself as a place where young scholars of varying academic backgrounds have the opportunity to work in an interdisciplinary setting and get in touch with expertise of other disciplines in order to shape their own scientific work.

Landmark Contributions

- (a) One core task of the Institute is the discussion of ethical implications of genetic engineering in agriculture. TTN is one of the rare institutions in Germany that brings critics and supporters to the discussion table without the usual polemics. In 2002, TTN released its study "Green genetic engineering – a model for evaluation" (Cf. Busch et al. 2002). An interdisciplinary group of experts discussed specific examples of biotechnology in agriculture. The "decision tree" used in this process allows the reader to understand the argumentation and to independently evaluate the scenarios. In 2008 and 2012, interdisciplinary conferences were held discussing the

social debate on green genetic engineering (cf. Busch and Prütz 2008) and the role of scientific freedom in the context of biotechnology in agriculture (cf. Grimm and Schleissing 2012). One core point is that the conflict on green genetic engineering is not only about benefits and risks of the technology but also about social impacts or general questions in regard to the relationship between man and nature (cf. Dürnberger 2012). More specific the debate is not least the product of different cultural concepts of “nature” (cf. Dürnberger 2011).

In 2013, an anthology about the role of different concepts of nature and agriculture in the debate on green genetic engineering will be published (cf. Meyer and Schleissing 2014), including an interpretation of environmental debates in the light of utopian and dystopian thinking (cf. Dürnberger 2014).

- (b) A key topic is the discussion of ethical aspects of modern energy supply. For 3 years, the Institute TTN cooperated with the Technology and Support Center in the Competence Center for Renewable Resources in Straubing in order to develop an ethical discussion model for bioenergy (cf. Dürnberger et al. 2010; Zichy et al. 2011). The model is a guideline to make independent judgments on scenarios and integrates not only ethical criteria like well-being and autonomy of persons concerned but also works out the importance of cultural concepts such as landscapes as cultural possessions, the symbolism of specific cultivated plants, or the ideas of agriculture as idyll.
- (c) A further main field of activity is the ethical reflection on questions of the relationship between man and animal. The study “Living with and from animals” (cf. Busch and Kunzmann 2006) discussed questions of animal husbandry and tried to bridge the gap between agricultural practitioners and consumers.
- (d) The so-called Escalation Model is a well-known study for the ethical evaluation of gene therapy and cell therapy. In 1997

a committee (founded on a proposal made by TTN’s Advisory Board) published the report to classify and evaluate genetic techniques used in modern medicine. The latest version, including recent developments, appeared in 2009 (cf. Hacker et al. 2009). Gene and stem cell medical interventions – as discussed in the model – can only be carried out by physicians. Therefore, the physician as the executing and fully responsible subject is the starting point of study. His ethos forms the framework for biomedical interventions in humans. Relating the fundamental ethical elements (such as autonomy, adequate risk-benefit ratio, therapeutic indication, doctor-patient relationship, and research that is open to the public) to the medical application of gene and cell technology creates more specific criteria as risk of interventions, reversibility of interventions, proliferation of altered cells, and emerging legal and ethical conflicts, which will serve as an indicator for public approval of such interventions. On the basis of these criteria, the “Escalation Model” grades the medical applications of gene and stem cell technology into four levels. In a nutshell, they escalate from “ethically unproblematic” (level 1) to “ethically not justifiable” (level 4). The latest version of the model was developed in cooperation with the chair of Systematic Theology and Ethics (Prof. Dr. Friedrich Wilhelm Graf) at the University of Munich. The project was funded by the Bavarian State Ministry for Science, Research and the Arts.

Major Activities

TTN organizes regularly conferences and round table discussions on ethical issues in sciences and technology. For example, the Institute initiated the conference series “Forum Ethik interdisziplinär” (Forum Interdisciplinary Ethics) in cooperation with the Protestant Academy of Tutzing. Within the scope of this series, topics like green biotechnology in the context of world hunger are discussed as well as questions like the

role of ethics for policy advising. Furthermore, several discussion groups are working on social implications of the German “Energiewende” (the targeted turnaround in energy policy) on ethical and legal questions of reproductive medicine and on the future of biomedicine in society. TTN publishes regularly anthologies and twice each year the information brochure “TTN Info.”

Cross-References

- [Agricultural Ethics](#)
- [Biofuels: Ethical Aspects](#)
- [Biotechnology and Food Policy, Governance](#)
- [Environmental Ethics](#)
- [Industrial Food Animal Production Ethics](#)

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Institutional Food Service

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Introduction

Institutional food service can be defined as entities that provide meals at institutions including schools, colleges and universities, and hospitals, as well as correctional facilities, public and private cafeterias, nursing homes, and day-care and senior centers. Interest lies in their potential roles in sourcing food from regional farmers, ranchers, and processors, thereby contributing to the development of regional food systems through farm to institution (FTI) or farm to cafeteria programs, of which farm to school (FTS) is the best known case. These programs combine local food procurement and experiential education to forge closer ties between farmers and consumers.

These programs are large in number. As of March 2013, the National Farm to School Network estimated there were more than 12,000 FTS

programs, existing in all 50 states and reaching 5.7 million schoolchildren. Programs and organizations such as the National Farm to School Network, Real Food Challenge, and Health Care Without Harm support these efforts in other types of institutions nationwide. The School Food FOCUS project has collaborated with large US-based K-12 schools to address procurement issues unique to schools with 40,000 or more students.

Institutions provide a potentially large market outlet for US farmers: the USDA Economic Research Service estimates that \$36.5 billion was spent on food at schools and colleges in 2010, equaling 6 % of all away from home food purchases. In comparison, the 2007 Census of Agriculture reports \$1.2 billion in annual sales of food direct from farmers to consumers in the USA. Furthermore, combined with the experiential education, farm to institution programs can potentially encourage healthy eating habits, increase access to healthy foods, create loyal customers, and support rural communities (Bagdonis et al. 2009; Vallianatos et al. 2004).

There are several other reasons why scholars and practitioners are interested in institutional food service and FTI as a food system development strategy. First, they purchase food in fairly large and predictable quantities, unlike high-end restaurants or retailers, for example, whose demand fluctuates with economic cycles to a greater degree. Many institutions have educational missions, using food service operations to enhance food, agriculture, and nutrition lessons. Finally, on the whole, individual institutions, particularly schools, are not direct competitors; unlike supermarket retailers or restaurants, sharing information or best practices with another institution does not risk customers leaving to eat in another location. The plethora of support organizations and their willingness to share information is further evidence of this.

K-12 schools are a large and important sector of institutional food service. K-12 school meals are governed by the USDA National School Lunch Program. This program, founded in 1946, provides money and food to participating schools. Funding for these programs comes

from periodic reauthorizations of the Child Nutrition Act. As of the 2012–2013 school year, schools receive up to \$2.86 per meal served (USDA Food and Nutrition Service 2009). Despite the best efforts of this program, two principal intended outcomes, farm profitability and childhood health, remain elusive. According to the 2007 Census of Agriculture, the majority of US farms earned negative net income. Childhood obesity remains a persistent problem.

There are, generally speaking, three models by which food service operations can procure food. First, in the farm-direct model, institutional buyers purchase directly from farmers: farmers to deliver to schools or schools pick up from farms. Second, they can buy from one or more types of intermediary, such as a distributor specializing in locally grown foods or food hub. Third, buyers can purchase from a broadline distributor, who delivers fresh and processed (e.g., canned, frozen) food items as well as nonfood supplies such as paper products. For institutional buyers, the farm-direct model offers the closest connection farmers, the most information about how the food was produced, and the greatest opportunity for experiential education. Farmers receive 100 % of the food dollar.

As discussed below, high transaction costs of this model limit the quantity of product procured farm direct. At the other end of the spectrum, broadline purchases offer buyers the least connection to farmers and opportunity for experiential education. Farmers only receive a percentage of the food dollar, as distributors charge for their services. Given its efficiency, reliability, and low transaction costs, this model is well suited for routine high-volume purchases. A primary challenge of institutional food service in general and school lunch in particular is to supply healthy foods that provide connections to and support local farms in an affordable way. This task imposes a number of trade-offs, as discussed below.

Transaction Costs and School Food

Institutional food service procurement strategies are explained by transaction cost theory in supply

chain analysis. Transaction costs are those needed to seek out and negotiate prices and ensure quality of a good or service. Transaction cost theory is based in large part on Coase's seminal paper (Coase 1937) and has been applied to many industries including manufacturing and food distribution. Following Coase (1937), a firm faces the choice of procuring inputs in-house (make) or acquiring inputs by contract or on spot markets (buy). The higher the transaction costs, Coase argues, the more likely the firm will make rather than buy. Subsequent studies have framed the issue as a continuum of models for procurement (Dyer 2000; Hobbs 1996). At one end of a continuum is vertical integration or hierarchy, where a firm produces its needed inputs in-house or otherwise exerts a great deal of control over the process. At the other end of the continuum is the use of arm's-length spot markets, where the firm shops for the best price each time it purchases inputs. In the middle of this continuum are many possible means of coordination, including partnerships, where the firm buys from a limited number of preferred suppliers often creating long-term strategic relationships with them.

The literature on transaction costs and economics suggests circumstances when each model will prevail (Dyer 2000; Hobbs 1996; Kumar 1996). The vertical-hierarchy model – the “make” option – is used when inputs are highly differentiated or of high quality: control over inputs is needed to ensure quality. Spot markets or contracts – the “buy” option – are used for frequent and highly routinized transactions of homogeneous or low-quality inputs. The same input is available many places, so the buyer can afford to simply choose the one with lowest cost. Strategic partnerships occupy a middle ground in this continuum. Partnerships are best used when vertical-hierarchy arrangements are too slow to adapt and innovate, but arm's-length suppliers are not willing to invest in equipment or share information needed to achieve needed innovation (Dyer 2000; Kumar 1996).

In practice, institutions utilize procurement and preparation options on various points of this continuum, many residing along the “buy” side.

For example, K-12 schools are required to utilize an open bidding process for many food items, which may take a number of forms. Closest to the “buy” end of the spectrum is competitive sealed bidding, which entails creating specifications for desired products and then publically inviting sealed bids and choosing the bidder able to provide needed products at the lowest price. This option is best when specifications are complete and easily communicated and when price will be the only dimension of variation, and it is believed many potential firms are willing and able to provide the items. In this case, transaction costs are embodied in the specification and request for bids, with price being the only decision factor.

In the middle of the continuum, competitive proposals can be solicited to achieve objectives (more loosely defined than specifications), and institutions choose a vendor who best meets objectives, with price being an important but not the sole criterion. Finally, institutions can negotiate with prospective vendors to meet objectives, which may be achieved in several possible ways. These options add complexity and transaction costs to the process and require some element of partnership but are still largely arm's length and use a formalized and regulated mechanism: the institutions exert little control over production or distribution once basic terms are set.

K-12 schools are able to procure limited amounts (\$100,000 is the federal threshold, although states may require lower ones) of fresh, unprocessed locally grown produce under the geographical preference provision: this exception to formal procurement practices is critical for FTS programs. Institutions are able (but not required), at their discretion, to contact vendors directly to solicit bids and arrange for delivery rather than publicly advertise and accept bids from anyone. Clearly, this approach may require greater transaction costs in order to procure more specialized and differentiated products – locally grown and often with the farmers' name and story attached, for example.

Finally, an institution may choose, on a limited basis, to produce food itself, such as in a school garden or school farm. In this case, the

product is very specialized – grown by the students themselves – and requires a great deal of control on the part of the schools, in the form of specialized training protocols and employee oversight. The value of school garden or school farm food is generally educational rather than being efficient method for school food procurement.

Institutions also have a number of options regarding preparation of food. Institutions can take a more vertically integrated approach, utilizing scratch cooking in either institutional kitchens or central commissaries: this option has high costs of organizing production (labor, equipment, management) but permits a great deal of control over product ingredients, for both nutritional and educational purposes. Scratch cooking can produce high-quality and highly specialized meals. In contrast, institutions can serve highly processed, heat-and-serve meals in which the costs of organization are borne by manufacturers; in this case, the institution has little control over ingredients.

Institutions even face the “make or buy” trade-off in the overall decision of who will operate the institutional food service. A school district, for example, may choose to be “self-operated,” in which the district organizes all activities using its own capital, management, and labor: those preparing and serving the meals are public school district employees. On the other hand, many institutions choose to “buy” their food service outright from a contractor, inviting bids from food service management companies and choosing largely on price and then having the contractor organize all procurement and production activities.

Institutions other than K-12 schools face similar trade-offs in transaction costs and the make or buy decision. On the most basic level, they may be self-operated (make) or use a food contractor (buy). Michigan State University is self-operated, for example, while the University of Vermont uses a contractor. Institutions that receive no public money face less stringent requirements to use competitive bidding for procurement decisions and therefore have more flexibility. These institutions are able to incur higher transaction

costs and serve more locally grown or other specialty foods if they are able to pass the costs along to their customers.

Motivations and Perceived Barriers of Supply Chain Actors

Previous studies have identified a diverse set of actor motivations and perceived barriers in farm to institution markets. Farmer motivations to participate include a mix of economic factors like the ability to diversify markets with those which offer reliable, consistent volume and the ability to sell #2 grade product, as well as social factors like the desire to feed children healthful food and contribute to their communities (Conner et al. 2012; Conner et al. 2011; Izumi et al. 2010b). Distributors cite their relationships and willingness to work with local farmers as conferring an advantage in the face of growing demand for locally grown food (Izumi et al. 2009). Food service buyers cite a number of benefits such as improved food quality (and concomitant increases in meals sold/served), support for local farmers, and greater buy-in from school employees and community members (Izumi et al. 2010a; Vogt and Kaiser 2008; Feenstra et al. 2011). Relatively low volumes (compared to sales to major retailers or brokers), arduous paperwork, and low prices are commonly expressed barriers to farmers. Distributors and buyers mention a suite of barriers around logistics, reliability, availability, and consistency (Vogt and Kaiser 2008).

Lessons Learned and Keys to Success

First, a common theme in lessons learned is the need for a champion, someone within the institutional food service operation to begin and sustain FTI efforts. Key roles of champions include linking stakeholders, providing energy and momentum, and providing a go-to person to navigate logistical issues. Practitioners can help to foster FTI through efforts to discover, recruit, mentor, publicize, and otherwise support champions.

Second, relationships among supply chain actors are critical to create transparency and trust and to allow for creative problem solving of logistical issues. These relationships are often built on shared values such as concern for childhood nutrition, community economic development, farmer well-being, and food system education. Third, economic self-interest matters. Social motives alone are not usually sufficient to encourage farmer participation; concomitant economic benefit is needed. Many supply chain actors express instrumental value in their ability to source and serve locally grown foods as providing a differentiation strategy for their businesses. Schools with FTI programs cite both increased participation rates (the percentage of students eating school meals) and increased community support. Finally, support organizations, particularly those able to assist with procurement (helping food service buyers find locally grown foods) and educational activities (developing and sharing materials to link food with local farmers), are critical to FTI success. Education linking the farmer to the food has promise to improve dietary habits (Izumi et al. 2010a; Roche et al. 2012).

Lingering Barriers

Several factors will likely continue to inhibit FTI growth. Institutions, especially K-12 schools, face severe budget constraints; to the extent that local foods cost more, institutions' ability to buy more than token amounts will be limited. Certain institutions, especially colleges, universities, and some hospitals, may be less cost constrained. Second, in many areas, seasonality limits the times in which fresh produce is available; indeed, for many (e.g., schools, colleges, and universities in the USA), the period in which produce is most available is the time in which the fewest students are attending classes. Season extension technologies (flash freezing, high tunnels) can help address this. The final barrier is the financial status of support organizations. Many of these are grant-funded; while FTI efforts are in the spotlight and receiving support now, these

organizations must seek long-term funding to continue operations when grant funds dry up.

Summary

Institutional food service is comprised of entities that serve food at schools, hospitals, and other institutions. Interest in these programs lies in their ability to contribute to food system development goals, particularly childhood nutrition and farm viability. This entry discusses the difficult options institutions face in procuring locally grown foods within a transaction cost theory framework and then highlights supply chain actors' motivations and obstacles. It concludes with lessons learned and lingering barriers.

Cross-References

- [Civic Agriculture](#)
- [Local and Regional Food Systems](#)
- [Local Food Procurement](#)

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Intellectual Property and Food

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Synonyms

Patents and copyright

Introduction

Many foods and food crops are covered by intellectual property rules. Intellectual property laws

allow people to protect ideas and inventions by preventing other people from copying, using, imitating, importing, or selling the protected subject matter. These protections come in several different varieties, including patents, trademarks, and copyrights, as well as trade secret protections. These rights provide those who possess them, for a limited time, with exclusive claims that cover inventions, discoveries, or original expressions. Intellectual property protections originally applied primarily to mechanical inventions – new machines for moving stones or weaving cloth. As intellectual property law has grown, it has expanded to new areas, to cover different forms of creativity and different products, including foods, agricultural crops, and even living (nonhuman) animals. At present, US law supports intellectual property protection for bacteria, food crops, animals, and recipes, provided that the inventor can show that the covered subject matter meets other requirements. In the case of patent protection, the covered subject must be *nonobvious*, *novel*, and *useful*. While these laws protect people's interests in ideas – “intangible subject matter,” as it is called in legal jargon – not all ideas are eligible for protection. No intellectual property protection can be given for mathematical formulae, even though they may be difficult to prove. No intellectual property protection can be given for discovery of fundamental laws of nature, even though their discovery may take brilliance and creativity. Several different forms of intellectual property protections cover food or food ingredients, including plants, animals, recipes, and food additives. The following section will discuss different kinds of intellectual property and the different levels of protection they afford.

This entry begins with a brief outline of different forms of intellectual property and the different protections they provide. The second section reviews the major lines of argument that have been employed to justify and defend the various institutions of intellectual property protection. Special controversies that arise in the case of intellectual property protections for foods and crop varieties are considered in the third section, followed by a brief discussion of

alternatives to patent and intellectual property protections for food and agricultural products.

Types of Intellectual Property Protection

Intellectual property law includes rules covering patents, trademarks, copyright, and trade secrets (Schechter and Thomas 2003).

Trade secrets include information that an individual or company might wish to keep private, often because this information provides a strategic market advantage. For example, the recipe for a popular food or drink might be protected as a trade secret, because the manufacturer hopes to prevent others from producing and selling an identical product. Trade secrets receive minimal protection, but are often covered by nondisclosure agreements that constitute a legal barrier to workers who could otherwise sell or reveal the protected information.

Copyright allows authors or publishers to prevent others from making and selling unauthorized copies of written material. The associated rights also include the creator's right to be identified as author of the work and to determine who may revise, adapt, or perform it. For example, most cookbooks are protected by copyright. The associated rights afforded to the copyright holder do not include the right to decide who may use the recipes, but do typically include the right to prevent others from *publishing* the copyrighted recipes.

Trademarks, borne by many food products, are a recognizable sign that uniquely identifies products as being from a particular source. Trademark protects a manufacturers' exclusive right to prevent others from using a designated "word, phrase, symbol, or design, or a combination [thereof], that identifies and distinguishes the source of the goods of one party from those of others" (US Patent and Trademark Office). Trademark protection is not available for generic food terms – for example, one could not get trademark protection for the word "pasta" or "hamburger" – but may be gained for names that are used to distinguish one brand from another, like "Barilla" or "The Fighting Burrito."

Patents are similarly designed to protect against unauthorized copying, but apply to inventions or discoveries that are useful, nonobvious, and novel. A patent holder has the right, for a limited time (often about 20 years), to prevent others from copying or possessing a copy of the patented item. In return, the patent holder is obliged to *disclose* the invention, by providing a full explanation of its nature and the process by which it can be produced. The scope of patent law has broadened over the course of recent decades to include genes, cells, and organisms as well as more ordinary inventions. These extensions are controversial, but have been widely supported by courts in many countries. Most agricultural food crops grown in the United States either are patented or include genes that are covered by patent laws.

Foundations of Intellectual Property Rights

Intellectual property laws are intended to spur innovation and to give inventors control over the fruits of their creative efforts. Some legal systems incorporate the idea that inventors and creators have special *moral rights* to control their creative products. There is a philosophical debate between those, on the one hand, who think that creators have underlying moral rights that are secured by these legal institutions and others who regard intellectual property rights to be entirely created by the laws that are used to enforce them. If the reasons supporting intellectual property rights are *moral reasons* such as justice or fairness, then presumably the rights in question are moral rights as well as legal rights. If the reasons supporting these rights are merely based on expediency or utility, this is sometimes taken to undermine the claim that there are underlying moral rights to be secured.

Intellectual property rights are typically defended on three different grounds: first, they are sometimes defended as *Lockean* rights, following the theory of property described by John Locke in Chapter V of his *Second Treatise of Government*. Second, they are often defended in

terms of the “personality interest” that creators have in the control of their creations. Third, these rights are often given a utilitarian defense. Utilitarians urge that the protection of these rights promotes public welfare (Moore 2011, 2008; Hughes 1988; Hettinger 1989; Kuflik 1995).

The *personality defense* of intellectual property begins with the idea that people have a moral claim to their talents. When people invest their creative efforts in the development of new works or ideas, they have, it is argued, a special claim to control the results. Artists, for example, have an interest in defining, within reasonable limits, the uses to which their artworks can be put, an interest which is set back if they have no control over their works. In a similar vein, new recipes invented by creative chefs may be works of art into which the creator has a personality interest, like any other artist. The personality defense of intellectual property is founded on the view that creators invest their personalities in the works they produce, giving them a right to control these works.

The *Lockean defense* of intellectual property is based on the idea that individuals are entitled to the products they create and in which they invest their labor. Locke argued that, because people have a right to their own bodies, when they improve something’s value by investing their own labor into it, they acquire a property right to that thing which justifies excluding other people from using it. However, such property rights only accrue to things that were previously unowned. Thus, on Locke’s view, a person who collects pecans from under an unowned tree in the wild would acquire a property right in them, but someone who collects nuts under a neighbor’s tree would be a thief.

Finally, the *utilitarian defense* urges that legal regimes that protect intellectual property are good policy because they promote social welfare. They do this, principally, by providing an extra incentive to reward creative work. In many cases, the development of new products requires a significant investment of time and money for research. Protection of intellectual property rights gives creators a period during which they can hope to regain the costs of development and

to profit from their creative efforts. By providing an incentive for creative work, an intellectual property regime promotes the development of valuable and welfare-enhancing products and ideas. Some people also see intellectual property rights as a safeguard against people who might “free ride” on the creativity of others by using others’ inventions without payment or consent. This view, however, is by no means universal. Other writers, including Thomas Jefferson, have argued that it is a virtue of invention that one person may use another’s invention without imposing disadvantage on the inventor. From the utilitarian perspective, wider dissemination of valuable inventions is a good thing. From the perspective of the *personality defense*, however, such dissemination might be interpreted as unjustified theft.

Some forms of intellectual property protection are expressly designed with these utilitarian considerations in mind. Patents, for example, are often described in terms of the expectation that patent protection represents a mutually beneficial exchange between an inventor/patent holder and the public at large. The patent holder receives, for a limited time, an exclusive right to license and the patented item and to prevent others from making and selling it. (A patent right does not include a positive claim to make the patented invention: where inventions are dangerous or otherwise regulated, even the patent holder may not have a right to make the item.) The period of patent protection is supposed to provide the patent holder with the ability to recover research and development expenses and to make a profit. The public receives, in return, access to creative products that would not otherwise be available and free access to the information necessary to produce them. As part of the patent process, the patent holder must *disclose* the invention, by providing complete instructions sufficient to allow another person to make copies of the patented invention. After the patent expires, the invention is in the public domain, freely available for use by anyone.

The alternative different defenses of intellectual property, variously based on personality, labor, and utility, are not mutually exclusive:

one might accept that each provides relevant reasons to protect and respect intellectual property rights. But different reasons may be relevant to different circumstances. The personality defense is most plausible for artworks and for other creative products in which creators have invested personal meaning. The Lockean argument is most plausible for creations that can be framed as the fruit of the creators' labor.

The utilitarian argument may be the broadest of all, but has its most central application to inventions that promote the public good. Critics of intellectual property laws often argue that these laws fail to promote public welfare since they prevent people from using valuable information. Defenders urge that the information that is constrained would, in at least some cases, not have existed at all but for the incentive effect of intellectual property law. This incentive effect and the fact that intellectual property rights are typically time-limited are important aspects of the case for the claim that these rights promote public welfare. After the time limitations on these rights expire, the protected ideas are in the public domain and can be used freely by anyone.

The disclosure requirement, for patents, is another important element of the utilitarian defense. Unless the invention is otherwise regulated, a patent holder typically has an exclusive right to license and sell patented goods and to prevent others from making, selling, or using the patented subject matter without permission or payment. In return, the patent holder must *disclose* the invention by publishing a full account of the invention, including instructions for making it. When the patent expires, other people can use this account to make, use, and sell the item. The idea behind this policy is that inventors invest money, effort, and creativity to develop new technologies. The period of patent protection enables them to earn back that investment and to make a profit on their creative efforts. Inventors are advantaged because they have exclusive rights in their patented subject matter. The public is advantaged because the patented technology is available and publicized. In the absence of patents, inventors might keep their inventions secret to prevent others from copying. Such secrecy is

worse for the public, because secret inventions are usually less widely used. And it is worse for the inventor because secret inventions often cannot be sold or produced without disclosing the secret. Critics of intellectual property rights sometimes overlook the fact that keeping information secret is a likely outcome for some products and inventions and that secrecy will often be advantageous when other forms of protection are not available. In such cases, it can be argued that the elimination of intellectual property rights would not immediately make information public and available. Instead, it would drive information underground.

This case may be undermined, however, if there is evidence that intellectual property protections are not being used in the way projected by the laws. Sometimes, for example, people have tried to take out patents on technologies that would otherwise have been available in any case or to patent inventions created by other people. Attempts have sometimes been made to patent ideas that are widely used and understood. And sometimes, patent protectors become "trolls," the term used for people making money by suing people who use the technology covered by their patent, without marketing the patented product themselves. In such cases, intellectual property protections can lock up inventions by moving them out of the public domain, preventing or slowing creativity instead of promoting it.

Intellectual Property Controversies in Food Ethics

Some of the earliest examples of intellectual property protection covered food items. Moore (2011) reports that "chefs in the Greek colony of Sybaris were granted year-long monopolies for creating particular culinary delights." Presumably, the purpose of this brief protection was to provide an incentive for creative cookery. More recently, there has been a surge in intellectual property protection for foods, especially patents on mass-marketed food products. US patents have been granted for foods with novel

properties, including longer shelf life, flavor, nutritional value, appearance, and many others. Some of these patents are controversial for one reason or another. Sometimes patents are granted for information that should properly be in the public domain, in which case the patented item can no longer be freely used. Some people have other reservations about patented material, arguing that some kinds of things – including some intangible subject matter – should not be privately owned. Some people object on moral grounds to the technologies that are covered by patents. And it is sometimes argued that intellectual property protections improperly give to corporations or individuals control over food or agricultural production.

Patenting in the Public Domain? If the material is already in the public domain, it is not properly patentable subject matter. Patent law was not intended to remove valuable intellectual property from the public domain, but sometimes patent examiners make mistakes. Examples of errors, in this case, are controversial, but sometimes errors are recognized, and patent protection is rescinded.

For example, one highly controversial patent (US Patent Number 6004596) covers:

A sealed crustless sandwich for providing a convenient sandwich without an outer crust which can be stored for long periods of time without a central filling from leaking outwardly. The sandwich includes a lower bread portion, an upper bread portion, an upper filling and a lower filling between the lower and upper bread portions, a center filling sealed between the upper and lower fillings, and a crimped edge along an outer perimeter of the bread portions for sealing the fillings therebetween. The upper and lower fillings are preferably comprised of peanut butter and the center filling is comprised of at least jelly. The center filling is prevented from radiating outwardly into and through the bread portions from the surrounding peanut butter.

This patent covers peanut butter and jelly sandwiches with certain special properties: to violate the patent, a sandwich must have its crust removed and edges crimped. In addition, there must be two separate layers of peanut butter to prevent the jelly from coming in contact with the bread, making it soggy. The examiner who

approved this patent must have judged that this technique would not be obvious to experts “skilled in the art” of sandwich making. Nonobviousness of this kind is a requirement for patent eligibility. The fact that crustless peanut butter and jelly sandwiches are common in lunch boxes around the country has been cited as evidence that this patent was improperly granted (Jaffe and Lerner 2004).

Another similarly controversial case involves US Patent 5894079 issued to cover a species of bean called by the patent holder as the “Enola bean” (Wolf 2007). The patent identified the bean by its species and color, but it was later discovered that beans with the same properties had been in use in the United States prior to the issuance of the patent and that they had been in use in Mexico for hundreds of years. The Enola bean patent was challenged and rescinded, but the process required to challenge patents is expensive and time-consuming. Unless people are willing to spend the necessary resources to challenge them, such patents are likely to remain in effect.

Patenting what “should not be owned.” It has sometimes been argued that plants and crop species should not be patented, because, as some people believe, they should be regarded as part of the common heritage of humankind (Magnus 2002, Ossorio 2007). The claim is that plants and living organisms are automatically in the public domain so that private appropriation of them is a kind of theft. This argument is more tenuous when it is applied to crop varieties that have been carefully developed, whether by selective breeding or by direct genetic manipulation. In such cases, the organism developed may be quite different from the original, and there are good reasons to think that the kind of development work undertaken by plant breeders and geneticists is just the kind of work intellectual property rights is intended to promote.

Patenting controversial technologies. Some critics of agricultural patents, however, regard some of the patented products to be morally questionable whether they are properly regarded as inventions or not. Critics of agricultural biotechnology, in general, and genetically engineered food crops, in particular, often argue

that these technologies should not be covered by intellectual property rights because they are dangerous to humans or to the environment or because they find such technologies to be intrinsically wrong. Under US law, however, the claim that a technology is morally reprehensible is not regarded as a legitimate reason not to issue a patent. If patented subject matter is *dangerous* or if its production would violate other people's legal rights, then the state may prohibit the patent holder from making the invention covered in the patent. For example, a chef who invented a new recipe for cooking endangered animals might be able to get a patent on the recipe, but no right to possess or kill or serve the endangered plant or animal. In such a case, the fact that the recipe cannot legally be made would not necessarily prevent a patent from being issued. But in general, the fact that a technology is regarded to be morally questionable is not a valid legal reason to deny patent protection. One might find this to be at odds with the thought that patents and intellectual property rights in general are supposed to incentivize the development of valuable new technologies: how can patenting immoral inventions promote the public good? But in a pluralistic society, different people hold different moral values and might not agree on which inventions are morally questionable. Patent examiners are not qualified to make judgments about the morality or immorality of the inventions they review.

Patents and the control of food and agriculture. Still others regard agricultural and food patents to be morally problematic because they enable corporations to control the behavior of farmers, cooks, and eaters. Still others worry that agricultural patents may leave people hungry or otherwise exacerbate food security concerns, since they constitute a kind of proprietary control over the food supply (Tansey and Rajotte 2008).

One context where this problem arises is *seed saving* by farmers. Before agricultural varieties were patentable, farmers were able to save seeds from one year to the next and did not rely on corporations to provide seed. Those who grow crops covered by patents or other intellectual property protections, however, cannot save and

replant seeds without violating the terms of the patent. Farmers can still grow non-patented seed varieties, which are in the public domain. But patented crop varieties often have features farmers want, including pest or herbicide resistance, higher yields, or other desirable agronomic properties. Defenders of patents note that these desirable properties are present because of the research and development done in pursuit of the patent. The crop varieties that possess them, therefore, are significantly different from the varieties that are in the public domain.

It is a different matter if the patented crops or traits were developed, in part, at public universities with public funding. In such cases, it may be inappropriate for a private individual or corporation to gain control over the patented variety, since this would involve the conversion of public funding for private benefit (Streiffer 2006).

Agricultural patents have changed the power relations involved in food production in other ways as well. At one time, farmers were mostly independent, reliant only on their own resources and the fertility of soil and weather. Present market conditions have been significantly created by intellectual property laws, and farmers must work within these strictures. The existing system allocates enormous market power to large agribusiness companies and less power to farmers. Some people urge that this situation renders farmers vulnerable to exploitation or that it is an intrinsically unjust distribution of power.

One major issue involves the containment and “adventitious presence” of patented crop varieties. When patented crops migrate and replant themselves, who should be held responsible? Current patent law regards possession of patented subject matter as sufficient for the charge of patent violation, even in cases where the patented item was not used. This provision makes sense for machines and software and in general for inventions that do not replicate and distribute themselves. It is much more controversial in the case of plants. In a widely discussed Canadian Supreme Court case, *Monsanto vs Schmeiser* (2004), Percy Schmeiser, a Saskatchewan canola farmer, was sued by Monsanto corporation for patent violation when patented glyphosate-resistant

canola plants were found in his field. He argued that the patented material arrived on his field by pollen drift and that he had never used the protected patented trait. The Canadian Supreme Court noted that possession of patented subject matter constitutes violation even in the absence of use. In such cases, the law does not distinguish cases where the possessor of the patented item intentionally acquired it or acquired it involuntarily, as Schmeiser claimed. The court sidestepped the issue, however, ruling that Schmeiser had taken positive steps to acquire Monsanto's patented product and that he had used glyphosate expressly to select for the patented trait. Current US and Canadian laws leave open the possibility that land owners may be liable for patent violation when patented plants migrate onto private property. Some commenters are undisturbed by this feature of patent law and note that involuntary patent violators might have a cause of action against their neighbors in such cases. They recommend that the possibility of involuntary patent violation should not motivate a change in patent law. (Janis 2002) It would be a significant disadvantage for property owners, however, if they must endure a lawsuit from a patent holder, even if they can regain some of the loss by suing the neighbor whose field was the source of the patented germplasm. It is likely that patent law will continue to evolve in response to these problems involved in the containment of patented crop varieties.

Alternatives to Intellectual Property

Where intellectual property protections are not available, innovators have three choices: (1) they can make their creative products freely available to everyone, in the public domain; (2) they can keep their inventions secret; or (3) they can find alternative means to control their products.

Public domain. If new products immediately enter the public domain, this would undermine the incentive effect of intellectual property law, which is intended to spur creative invention. But, while intellectual property laws provide an

incentive for both creativity and disclosure, there is no reason to think that creative efforts would cease if these laws were not in place. Some kinds of creative work, however, require many years of costly investment in research and development. For example, the development of a new crop variety typically requires 10–15 years for development, and the research involved may cost millions of dollars (Sease and Hodgson 2006, p. 350). Creative efforts that impose these heavy costs might be less likely in an environment where protections are not available.

Secrecy. Critics of intellectual property sometimes argue that ideas should be freely available to everyone, but the elimination of the laws protecting intellectual property would not immediately make ideas free. Some inventors would simply keep their inventions secret. Many creative products are already maintained as secrets, instead of being made available in the public domain. Secrecy is not necessarily better than public disclosure: patented creations are available for others to study, even during the period when they are protected as private property.

Alternative means. In the absence of intellectual property laws, it is sometimes possible for people to protect their creative products in other ways. Some seed companies include license restrictions on seed bags that itemize restrictions on replanting or require growers to sign a technology agreement when purchasing seed. In this way, they are able to use contract law to restrict growers' legal right to save seed and replant. While contract law can be used to replicate *some* features of intellectual property protection, however, it cannot replicate them all. Contractual agreements apply only to those who sign or otherwise consent to their terms, while standard intellectual property protections imply obligations for everyone, not just to consenting contractors. But some crops are effectively protected when desirable traits are not heritable by the next generation or when biotechnology is used to restrict the possibility of seed saving and subsequent planting. For example, hybrid crop varieties are effectively protected since seeds saved from hybrids will not grow into plants that have the desirable agronomic traits and

high yields of the originals. And some companies have worked to develop “genetic use restriction technologies” (GURTs) that effectively accomplish the same thing. The so-called “terminator” technology makes next-generation seeds sterile, insuring that farmers cannot save and replant patented seeds. This technology is highly controversial and is not presently in use.

Summary

Because intellectual property rules allocate advantages and constraints, they will always be controversial. Since some ways of distributing these advantages and constraints are morally better than others, the problem is one of ethics and justice, not just efficiency. These rights are designed to reward creativity and to provide incentives to promote research and development of new ideas. Some ethical controversies associated with intellectual property law arise when the laws are misused. Other ethical controversies arise as a result of the way the institutions are structured. Food is a fundamental human need, and agricultural food production is an enormous undertaking. For this reason, it is especially urgent to ensure fairness and equity in the distribution of intellectual property rights in these areas.

Cross-References

- [Biotechnology and Food Policy, Governance](#)
- [Fair Trade in Food and Agricultural Products](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Food and the Avant-Garde](#)
- [Food Ethics and Policies](#)
- [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- [Recipes](#)
- [Saving Seeds](#)

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Intellectual Property Rights and Trade in the Food and Agricultural Sectors

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Synonyms

IPR; Patenting

Introduction: New Agro-technologies Require New Legal Protection

For thousands of years, new seeds and new foods have been exchanged and traded without any legal regulation of intellectual property. Huge improvements in seed breeding resulting in increased harvests (like the ones resulting from the so-called Green Revolution in the 1960s) have been achieved just by “brown bagging,” sharing, experimenting, sometimes stealing, and imitating. However, at the end of the 1970s, biotechnology was increasingly perceived by governments as an exciting field of technological innovation that would lead to renewed economic growth and restore international competitiveness for western countries. The huge economic potential of this new field of technology would however only be unlocked, so it was thought if biotechnological inventions were to receive proper legal protection. In the landmark case of *Diamond v. Chakrabarty* concerning the patentability of a genetically modified oil-consuming bacterium, the US Supreme Court ruled in 1980 that “anything new under the sun that is made by man,” whether living or nonliving, can be patented. In subsequent years, US jurisprudence explicitly extended patentability to multicellular organisms like plants (1985), oysters (1987), and mammals (1988). Other western countries ultimately followed the American example, albeit with some delays and hesitations. In

1988, the patent offices of the USA, the European Union, and Japan proclaimed the new policy line that DNA sequences and genes would also be eligible for product patents. Their justification was that sequences and genes, when isolated and purified, would be essentially different from their natural counterparts and therefore qualify as inventions rather than discoveries. However, soon many raised ethical objections against this type of legal protection because it implies an unacceptable form of exclusion of the many poor farmers that cannot afford to pay for the patents.

Globalization of Breeders’ Rights and Patents

In a parallel move, the legal protection of plant varieties resulting from conventional breeding by so-called plant breeders’ rights would also be tightened up. In 1961, a handful of western (mainly European) countries had concluded the first international agreement on plant variety protection, called UPOV, after its French acronym (*Union internationale pour la protection des obtentions végétales*). This agreement gave the originators exclusive rights on commercializing their plant varieties, but granted other breeders the right to use these varieties as starting material for further breeding (breeder’s exemption) and left farmers the freedom to save seed from their harvest for the next planting season (farmer’s privilege). In 1991, a new international agreement was concluded (referred to as UPOV 1991), which drastically curtailed the breeder’s exemption and virtually annulled the farmer’s privilege, bringing plant breeders’ rights more in line with patent law.

In the eyes of its main beneficiaries, the intellectual property regime also needed to be globalized. Driven by an influential business lobby in the pharmaceutical, biotech, and entertainment industries, the US and European governments used their clout in international trade negotiations to “persuade” reluctant developing countries to accept the (for them often disadvantageous) terms of the *TRIPS agreement*, which was concluded in 1994 as part of an overall WTO

package. The TRIPS agreement (standing for *Trade-Related Aspects of Intellectual Property Rights*) sets worldwide minimum standards for the protection of intellectual property rights (including patents, copyright, and breeder's rights). It mandates that, with few exceptions, "patents shall be available for any inventions, whether products or processes, in all fields of technology" (art. 27.1). Countries are allowed to exclude plants and animals (other than microorganisms) from patentability, but "Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof" (27.3b). Breeder's rights are an example of a *sui generis* system of plant variety protection. Many developing countries have meanwhile joined the UPOV 1991 agreement to fulfill their TRIPS obligations. In the USA and the European Union, genetically modified crops may even be doubly protected by patents and by plant breeder's rights.

Criticism: IPRs and Food Security, Traditional Knowledge, Environmental Sustainability, and Social Justice

Particularly in the life sciences, IP rights regulate objects such as food and medicines that are key to securing human rights, especially the right to adequate food and the right to health (Universal Declaration of Human Rights, UDHR 25.1). Consequently, IP serves private and public interests. The private interest consists in being able to enjoy the fruits of one's labor, and the public one is about the provision of current and future public goods. Extensive research and development (R&D) enterprises are made profitable as rights holders can market their products exclusively, securing the existence of new commodities and due to the temporary nature of IP, also the provision of future public goods, as the invention becomes part of the public domain. Nevertheless, criticisms abound.

Firstly, the current IPR regime provides according to many insufficient incentive for providing innovations that will alleviate the problems that predominantly affect the poor and to

make those innovations widely accessible. European states have a long-standing tradition in securing for their citizens the minimum requirements for an adequate living standard. The success of eradicating extreme poverty in Western Europe has not only lead to viewing this harm to human welfare as something that is unacceptable but also as preventable. As the sums needed to alleviate this welfare burden globally are relatively low compared to other expenditures made in developed countries, not helping is seen as an unacceptable moral menace by a growing percentage of the citizens of developed and developing countries.

With the excessive income inequalities all over the world, it is evident that if the economically worse-off people, such as farmers, are not allowed to make use of the technological innovations of developed countries, they will end up even poorer (Korthals 2010). Furthermore, objects predominantly needed in resource-scarce markets will not be developed, as R&D expenses cannot be recovered (DNDWG 2001; CIPIH 2006)

The right to adequate food and the right to health (Universal Declaration of Human Rights (UDHR), article 25.1) are not the only two human rights that collide with liberties granted by the use of exclusive rights secured by IP regimes. There is a strong plea for a democratization of science, a demand for openness and inclusion, both in active participation and decision-making, elements that in the human rights discourse are encompassed in the right to share in the advancement of science (UDHR, article 27.1). There is a widespread indignation about the way the current IPR regime restricts freedom to operate and a perception that high-level science is treated as a luxury reserved for the developed world alone.

Secondly, as costs of bringing out a saleable product in the life sciences have constantly risen, a stricter market orientation has become even more mandatory, with the effect that industry mergers were seen as necessary in providing goods in the food and health sector. Patents have actually been key drivers behind the increasing economic concentration (and vertical integration) of the global agrifood industry

(Glenna and Cahoy 2009). Often, goods that were formerly free, like seeds, have now to be paid for by end users due to high product development expenses. The current system has the unintended consequence that increasingly larger-scale players dominate the markets, with a foreseeable adverse effect on the rate and quality of inventions and the survival of small and medium-size enterprises. Here, particularly newcomers from the developing world face a difficult start.

Thirdly, there are up to this moment unresolved issues like how indigenous knowledge should be treated and in what way biodiversity should be maintained, as well as questions concerning the regulation of biosafety dossiers. It has to be assessed to what extent those issues should be addressed by IP regimes themselves, or in how far the existence of these regimes has created a situation that demands those issues to be dealt with. The first two subject matters are often brought under one umbrella as interests of the developing world. Biodiversity is often seen as something that is vital, but there are insufficient empirical studies that provide clear evidence that industry needs biodiversity as much as commonly stated. Success in conserving (or even enhancing) biodiversity depends very much of the outcomes of such studies, as such evidence is a huge leverage for bargaining deals for its protection and the establishment of proper incentives therefore. Something similar holds for traditional knowledge. Stating its importance as cultural heritage of mankind might not be enough to find sufficient infrastructural support – studies showing how industry has benefited from traditional knowledge will help to gather a much wider involvement in initiatives that seek to conserve and recognize indigenous scientific practices and knowledge.

Fourthly, evidence on the possible negative effects of the current IP regime and on the potentialities is difficult to acquire. One of those negative effects is that the system of protecting intellectual property has become extremely expensive, in its demand of researcher's time and resources. A wide contingent of legal experts has to be financed by reallocating funds originally

destined for research and development. Another regards the one-size-fits-all approach propagated with the TRIPS agreement, which might be less suitable for innovations in the life sciences than for promoting research and development in the electronic, chemical, or mechanical industry. Inventing around is in many cases not possible due to the very nature of life organisms. As inventions in this area could help to secure the human rights to adequate food and health, optimizing the incentive system is imperative. Here, one cannot just trade off business opportunities lost in one area against other ones; a detailed assessment on the unused potential to secure human rights has to be made. Many important stakeholders feel that their interests and voices are not being taken into sufficient consideration in negotiation rounds and the drafting of IP laws. Justice demands more than a fairer distribution of objects of innovation and the availability of biotechnological solutions for the problems that the poorest people in the world are predominantly confronted with. Being able to participate at all levels of the innovation process and having a say on research agendas are something completely out of reach for most of the world's population. For some human rights advocates and scientists, wider participation cannot be even sacrificed for higher efficiency in making technologies available to more people, this coming in line with what is known as the right to share and participate in advancement and benefits of science in the human rights discourse.

Patenting and the Global Spread of GM Crops

Transgenic crop varieties were first commercialized in 1996. Since then, a suite of different GM crops have spread to different parts of the world in a rather uneven pattern, determined by varying socioeconomic and agroecological conditions but also by different regulatory frameworks and intellectual property arrangements. The area planted with biotech crops has increased 94-fold from 1.7 million hectares in 1996 to 160 million hectares in 2011 (ISAAA 2011). The two traits

that have most often been inserted into GM varieties are herbicide tolerance and insect resistance. The main agricultural crops involved are soybean, canola, maize, and cotton. Transgenic crops are mostly grown in North and South America and in Asia (especially China and India), while Europe and Africa are the continents with a very low adoption rate in terms of the number of approved varieties as well as of planted area (Wallace 2010). Adoption may be influenced by the vicissitudes of intellectual property protection and biosafety regulation, as is illustrated by the case of GM soybeans in South America. At an early stage, Argentina eagerly adopted the so-called Roundup Ready soybean, which had been developed by the US company Monsanto as a GM variety resistant to its proprietary herbicide glyphosate (trade name "Roundup"). The variety was actually without legal protection in Argentina and therefore formally in the public domain, as Argentine law did not allow patents on plants, and Monsanto had failed to apply for a plant breeder's right (Correa 2006). This did not prevent Monsanto to claim royalties from Argentina for the use of its "proprietary technology." The US company even went so far as to seize shiploads of Argentine soy meal in European ports and sue for patent infringement there (in the end, European courts rejected Monsanto's claims). Through illegal smuggling from Argentina, glyphosate-resistant soybeans also reached farmers in Paraguay and Brazil, where the new GM variety had not yet been approved by the regulatory authorities. Widespread adoption by farmers in those countries created a *fait accompli*, which was subsequently legalized by a formal approval not based on a careful biosafety assessment. Something similar happened in India with insect-resistant Bt cotton (containing a gene from *Bacillus thuringiensis* that produces a toxin against insects). This variety had been developed by Monsanto and its Indian subsidiary Mahyco. These companies proved unable to retain their intellectual property control over the new variety, after Gujarat farmers had somehow appropriated the transgenic seeds (possibly from testing fields), crossed it out with indigenous varieties,

and in the process created a huge market for "stealth seeds" (Herring 2007).

Tangible Property and Intellectual Property

Biotech companies attach great importance to *respect for intellectual property*. For them, patents and plant breeder's rights are a just reward for their inventive efforts and allow them to recoup the costs and expenses incurred in creating new GM varieties. Hence, they very much lament any unauthorized use of "their" technologies, for example, by farmers who grow "pirated" GM crops without paying them any royalties. Although patents, plant breeder's rights and other intellectual property rights are territorially based, it is striking that companies tend to see their inventions as proprietary also in those countries in which no patents or breeder's rights have been filed. Thus, Monsanto claims royalties on the use of GM soybeans in Argentina even though their invention is not legally protected in that country. It is also not unusual for biotech companies to magnanimously "donate" their technologies to humanitarian initiatives for use in countries where they have no markets (as with the WIPO Global Responsibility Licensing Initiative), but what exactly do they give away if they have no patents in such countries in the first place? For farmers, property rights are also at stake, but their concern is rather that modern *intellectual* property threatens to erode their *tangible* property. In the old days, when a farmer bought seed from the seed merchant, it truly became his property, that is, he could do with it whatever he liked. He could use it to grow his crop and save seed from the harvest for replanting in the next season (or he could exchange it with his neighbor or even sell it on the market). New interpretations of patent law, followed by a drastic revision of plant breeder's rights (UPOV 1991), no longer allow on-farm seed saving. When a farmer buys GM seed from a biotech seed company, it no longer becomes his full property because he no longer acquires the right to make use of an inherent biological

characteristic of the seed, i.e., its natural capacity to reproduce itself. In fact, it would be more appropriate to say that the farmer “rents” the GM technology incorporated in the seed for the duration of only one growing season.

While biotech companies demand respect for intellectual property, others fear that the *autonomy* and *independence* of farmers will be increasingly undermined by more stringent IP restrictions on saving seed. The famous report on the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) expresses “concern about present IPR instruments eventually inhibiting seed-savings and exchanges” (IAASTD 2008, p. 42), thereby restricting the capability of farmer communities to develop locally adapted varieties and to maintain gene pools through in situ conservation – essential to local practices that enhance food security and sustainability.

Patents, the Herbicide Treadmill, and the Shrinking of the Public Domain

There is a further reason to be cautious about claimed and expected public domain benefits of patenting GM crops. That reason may be summed up in the slogan: *Nature fights back*. One of the first things biotech companies did was to develop crops that would be resistant to their proprietary herbicides, a strategy that makes economic sense given the patentability of both GM crops and herbicides (Harhoff et al. 2001). Thus, Monsanto created GM “Roundup Ready” varieties of canola, maize, and soybean that tolerate its registered herbicide “Roundup” (glyphosate), a strategy that was quickly followed by its competitors Syngenta, DuPont, Bayer, and BASF. Continued and widespread use of certain herbicides, however, acts as a selection pressure favoring the spread of resistant weeds. What is currently happening in US soybean and maize cultivation is a case in point. Monsanto’s “Roundup Ready” (glyphosate tolerant) crops have been immensely successful in the USA, where they currently cover 90 % of the soybean area and 80 % of the maize

area. In comparison with some older and more aggressive herbicides, glyphosate is relatively benign in its effects on wildlife. Many successive years of glyphosate use, however, have now resulted in at least 9 nasty weed species that have gained immunity to this herbicide. The expectation is that by 2015, some 40 % of the cultivation area will harbor resistant weeds. Farmers have to resort to older and less ecologically benign herbicides such as 2,4-D and dicamba, in addition to using Roundup, to kill the new invaders. Agrochemical and biotech companies are meanwhile developing new herbicide-tolerant varieties of soybean and maize with “stacked” transgenes that will not only tolerate glyphosate but also other herbicides. This ongoing “arms race” between biotech and nature may not be too bad for some of the biotech companies involved, but illustrates that environmental benefits of agricultural biotechnology are sometimes only temporary rather than durable or truly “sustainable.” A cynic might even argue that the evolution of weed resistance makes highly successful herbicide-tolerant cultivars obsolete over time, thus clearing the way for new cultivars to enter the market and decreasing the chance that an effective invention reaches the public domain as a generic cultivar after the end of the patent term. For a company like Monsanto, of course, the emergence of glyphosate-resistant weeds when its patents on glyphosate-tolerant crops are about to expire is not something to be deplored (although company scientists had earlier dismissed this possibility as highly improbable). This process of creative destruction favors private “innovation” (for a similar view that antibiotic resistance favors pharmaceutical innovation, see Outtersson 2009). Industry scientists claim that the use of new transgenic crops with stacked tolerance traits for glyphosate and other herbicides like 2,4-D and dicamba is not likely to accelerate the evolution of multiply resistant weeds, but other researchers argue that sooner or later the emergence and spread of such superweeds are precisely an outcome that is to be expected (Mortensen et al. 2012). The whole agricultural system seems to be set on “accelerating the transgene-facilitated herbicide

treadmill” (*ibid.*, 83). Unfortunately, the knowledge infrastructure needed to practice Integrated Weed Management, which would enable farmers to escape from this treadmill, is simultaneously atrophying because the relevant type of knowledge does not lend itself to being packaged in patentable and saleable products (*ibid.*, 81–82).

The emergence of resistant weeds as a “natural” response to the widespread use of herbicides on herbicide-tolerant GM crops and the concurrent atrophy of Integrated Weed Management thus call the rationale of the patent system into question. The obsolescence of transgenic crops at the end of the patent term due to the evolution of weed resistance also vitiates a key justification for the protection of intellectual property. The underlying idea of the so-called patent bargain is that in applying for a patent, the inventor receives a *temporary* monopoly on exploitation in return for disclosing his invention and that after the expiration of the patent term his invention will fall into the public domain. It now transpires that once it becomes available for free public use, the invention may have almost entirely lost not only its economic value but also its technical efficacy. Even more, a patent may induce its owner to socially *waste* a finite resource, to wit, the depletable effectiveness of means for crop protection.

Patents and Climate-Ready Crops

A special case, because of its urgency, is the role of patents regarding the innovation process of crops that can accommodate or even reduce climate change. As is well known, most poor countries are more vulnerable to climate change than the rich ones, due to their location but also due to the fact that they are more dependent on agricultural production in earning their livelihood. Developing new technologies for pro poor innovation requires focusing on crops that are important in the poorest parts of the world, such as sorghum, millet, chickpeas, and groundnut; however, research agendas of industrial companies have neglected these almost entirely for

understandable economic reasons. The current IPR regimes determine research agendas that are not conducive in reducing poverty and accommodating to climate change in the poorer areas.

Alternatives for the Current IPR Regime and Unfair Trade: Open Source, Open Access, and Food Impact Fund

There are at least three alternatives (or complements) to the current IPR regimes covering production, participation, and consumption of knowledge. “Open innovation” does not mean for free, but free in the sense of being transparent and unrestricted – business models are compatible with open innovation. The question if more openness leads in itself to fairer distribution is something that remains unresolved until further research. Many emphasize the role of commons for the future production of knowledge and their potential to rebalance uneven power relations (Jefferson 2006).

The second, “Open Access” (Krikorian and Kapczynski 2010), covers two currents in the access to knowledge movement, one that aims to build an information society where knowledge is openly available without restriction at all and the second that seeks a general expansion of the public domain. These currents are in particular relevant for initiatives for protecting traditional knowledge through exclusive rights. The attempt to protect traditional knowledge by exclusive rights is at odds with approaches based on sharing rather than appropriating knowledge. The compatibility of predominantly western conceptions of intangible property with customary laws and the extent to which they adequately consider the static and dynamic nature of traditional knowledge are rather unclear.

The third approach aims at an “Impact Fund” (Pogge 2008). Linking profits to positive impact on alleviating an urgent problem is of particular interest for targeted products not covered sufficiently by market incentives, such as medicines for so-called neglected diseases or improvements in seed varieties especially targeted for the needs

of the poor. The idea behind the fund is to offer a reward to companies that aim at maximizing quality-adjusted life years (QALY) of people suffering a disease or disorder. While retaining its IP rights, the company has to commit itself to sell the medicine at cost price in order to be rewarded monies proportional to the impact in increasing QALY its medicine has. The main criticism of the impact fund idea questioned the prerequisite of patents for fund rewards and its maintaining of current power relations.

Summary

The patenting of biological inventions thus raises special ethical issues. The main issues are:

- (a) What can be the socially desirable balance between types of exclusivities innovative enterprises require and the inclusive public goods protection it is said to serve? How is this proper balance to be achieved?
- (b) What old and new ideas (such as Open Source and the Access to Knowledge movement) about exclusivities such as protection and property and their optimal integration with the public good of human welfare, fair trade, and fair invention are interesting and worthwhile for debate and experimentation? What pilot studies should be pursued?
- (c) In what way can an intellectual property rights system become inclusive, not only listening to the voices of patent holders but also to those stakeholders that are affected by the patent system?
- (d) How can inventions be stimulated that are specifically designed to alleviate urgent problems and to reach global targets, such as the millennium development goals and caps in climate change gases emissions?
- (e) Why are the flexibilities of TRIPS agreement regarding human welfare (TRIPS, art. 6) not often used in national regimes, and why does the full potential of TRIPS seem to be under-used? Which steps can be taken to ensure better use of those flexibilities?
- (f) How can ethical principles and values of a nation or a group of nations be protected,

and what does this mean with respect to a broad interpretation of *ordre public* and public policy exemptions to patentability (TRIPS, art. 27.2 and 27.3)?

Cross-References

- [Fair Trade in Food and Agricultural Products](#)
- [Saving Seeds](#)
- [Trade and Development in the Food and Agricultural Sectors](#)

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International Food Quality Standards

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Synonyms

Codex alimentarius; Food safety; WTO

Introduction: Why and Who?

Various aspects of food quality can be controlled, coordinated, certified, and communicated by government agencies, third parties, supply chain contracts, and voluntary standards. Such quality standards can increase the value, volume, and nature of agricultural and food trade across international borders. Indeed, certain ingredient supply chains or stages of processing may span multiple countries. Imports and exports might be inspected and acknowledged to meet a particular standard, highlighting a product quality attribute or a process step. Any such coordination of national-level food quality standards can be called *rapprochement* (Hooker 1999). Regulatory *rapprochement* is the process of attempting to establish harmonious intergovernment relationships. The goal is, at best, freer trade without sacrificing consumer protection or, at least, the prevention of food quality standards from becoming a serious point of contention and conflict in international trade.

The World Trade Organization (WTO) uses two key trade agreements (Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT)) to facilitate such regulatory *rapprochement*. These agreements recommend the increased use of guidelines adopted by international food quality standards organizations such as Codex Alimentarius (Codex), the International Plant Protection Convention (IPPC) and its regional affiliates (e.g., the North American Plant Protection Organization (NAPPO)), and the International Office of Epizootics (OIE). Countries then have the ability to set stricter food quality standards if they have sufficient scientific evidence that such measures are justified and notification is provided to other countries. This places the burden of proof on the importing country. Conversely, in proving the equivalency (in terms of the resultant food quality target) of differing national-level regulatory regimes, the burden of proof is placed on the exporting country.

The SPS Agreement of the WTO captures this in an important statement of principle:

Reaffirming that no Member should be prevented from adopting or enforcing measures necessary to protect human, animal or plant life or health, subject to the requirement that they are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between Members where the same conditions prevail or a disguised restriction on international trade. (GATT-SPS 1994, p. 1)

The issue of dynamics in international food quality standards is critical. The ultimate goal is to adjust each food quality standard as more scientific evidence, production or processing innovations, and customer and consumer acceptance allows. Discussions of standard levels, the manner that standards are updated, and comparisons of national standards should be done in light of an increasing knowledge of the food quality assurance and management capabilities and the scale of international trade impacted. Demand for higher-quality food products expands as national income rises, leading to calls for stricter standards, suggesting one dynamic that must be accommodated. However, “luxuries” of high-income countries may be at the expense of

lower-income countries. For example, trade between developed countries could be well in excess of a minimal (e.g., Codex-based) standard but at the Codex level for goods traded between lower-income countries. Thus agri-food products crossing international borders may still be of very different quality with little more than a “harmonized” minimal standard for a limited volume of trades. This affects each nation’s welfare differently. Higher-income countries rarely accept imports of a lower standard than currently found domestically or from other imports, whereas lower-income countries may see their domestic food quality standards dramatically rise to maintain export income from food trade. Alternatively, a segmented market may see high-quality products exported with lower-quality foods remaining for the domestic market. This may be at the expense of many local inhabitants, incurring high compliance costs. Therefore, an adjusted international food quality standard though of little or no significance to developed nations could dramatically affect developing countries (Otsuki et al. 2001).

Food Quality Targets: What and Where?

Food quality is multidimensional, made up of a bundle of characteristics or attributes that determine the product’s performance relative to its price. There is no definitive list of food attributes; important product and process characteristics vary across food categories, consumers, and nations due to risk and preferences. Several important subsets can be identified: Safety attributes include foodborne pathogens, heavy metal and pesticide residues, food additives, naturally occurring toxins, and veterinary drug residues. The second set of attributes relates to the nutritional profile of the product and includes aspects such as fat content, calories, fiber, sodium, vitamins, and minerals. A third subset is value attributes. This is a diverse list that includes characteristics of the product itself that are of value to the consumer but are not food safety or nutrition attributes. Examples are purity (lack of nonhazardous contaminants), compositional

integrity (i.e., lack of economic adulteration – replacing cheaper ingredients without notification), size, appearance, taste, and convenience of preparation. The fourth subset is package attributes, which includes package materials, labeling, and other information provided. A fifth subset groups quality attributes that arise from the manner of production and processing of the food or agricultural ingredients. Frequently controversial, these attributes include biotechnology, organic, sustainable, nanotechnology, and irradiation.

As noted, this classification is neither definitive nor exhaustive but is intended to be useful in discussing food quality issues. Particular international food quality standards may embody characteristics from more than one attribute subset. For example, organic food may be appealing to some consumers for its real or perceived safety, nutritional, value, and process attributes. These foods can be identified via package information disclosures supported by traceability regulations (whether mandatory or voluntary) throughout the supply chain. Third-party certification organizations in the source or destination nations may be public or private entities. Important institutional and supply chain differences exist in the nature of international food quality standards targeting raw agricultural ingredients and consumer-ready food products and traceability (Souza Monteiro and Caswell 2010). Generally, as a product moves from bulk to packaged form, more international food quality standards likely play a role. This attribute language highlights the interaction and interdependency of the various aspects of international food quality standards.

Many recent developments in the adoption of food quality management systems represent a switch toward the application of joint or holistic metasystems and meta-standards where one certificate assures compliance with a set of food quality standards (Caswell et al. 1998). This follows similar trends in other nonfood industries, with efforts focused on reducing product waste, complying with contractual requirements, responding to consumer demands, managing risk, and demonstrating that technical product and process standards are being met. A common

though not exclusive incentive for adoption of these systems in the food industry is the management of food safety attributes particularly when traded internationally. Such food quality metasystems include those mandated by governments through regulatory requirements, those adopted voluntarily by companies, and a third type of system – quasi-voluntary. The latter systems are those that are required by such a large proportion of the market as to become *de facto* required standard operating procedure. These systems are quasi-voluntary in that a supplier can choose not to comply and simply not do business with the buyer. However, if they are widely used or are used by important buyers, suppliers may have little choice in whether to produce or process to the specifications.

When considering the role of international food quality standards, it is important to recognize the role of information asymmetry. Product quality can be usefully categorized as search, experience, and credence in nature. Search attributes (product size, ripeness, price) can be fully determined prior to purchase or use and therefore easily controlled, certified, and described via value attributes such as standards of identity, ingredient minimum standards, or labeling. In an international trade context, the role of food quality standards addressing search attributes is to assure that the claimed food quality is correctly presented prior to purchase or progression through the supply chain. The true presence and extent of experience attributes, alternatively, can only be determined after consumption or use, whether by a downstream customer such as a food processor or the final consumer. Examples include taste, shelf life, and the presence of large physical contaminants and certain forms of economic adulteration. Elements of international food quality standards that attempt to minimize the role of experience quality uncertainty across national borders include audits of the production/processing environment by government or third-party agents and random compliance checks to “test” product quality (if this can be used to determine a valid representative sample of the batch or shipment). Whereas search quality uncertainty suggests the primary role of

international food quality standards is to ensure all salient information is complete and accurate and made available prior to purchase, for experience uncertainty the goal is to strengthen trust and credibility through guarantees of quality assurance, consistency, and remediation in times of poor quality. Finally, credence quality uncertainty cannot even be resolved after use or consumption. Common examples lie within food safety and nutrition characteristics. Microbial pathogen or pesticide residue content cannot be determined without complete product destruction. International food quality standards attempting to mitigate credence uncertainty are traditionally in the domain of mandatory, public, and direct regulation (Caswell 2012).

Types of Food Quality Standards: How?

In the context of international food trade as well as the domestic level, a clear delineation of the goal of a regulatory regime, third-party certification system, or voluntary standard greatly facilitates discussion and analysis. Here, too, there is no definitive list or approach. The most common food quality regulatory regimes are those that focus on process and product performance standards. Further distinctions include input or ingredient standards and information requirements (see Van Camp et al. 2010, for an example of the US National Organic Program). A range of quasi-voluntary approaches have emerged from incentive or market-based, co-regulation, information/education, and industry self-regulation (Caswell 2012). Following the product through to the consumer, food quality standards may also target conditions of distribution and sale (e.g., temperature of refrigerated display cabinets) or services at the point of sale and conditions of use (e.g., nutrition disclosure at point of sale for food service operations). As requirements are implemented closer to the consumer, the potential for multiple international food quality standards to play a role greatly increases. For example, European grocers were concerned about the production environment for fruit and vegetables which are often imported. Efforts to

document food safety, value, and production attributes throughout supply chains led to the development of traceability and certification systems based on Good Agricultural Practices.

Focusing on the international context of the management or regulatory rapprochement of differences between national-level mandatory controls leads to two major questions. The first is the legitimacy. In other words, does the national government have a valid reason to regulate a particular food quality attribute, and if so, is the regulatory regime it has chosen appropriate for achieving this goal? Under several trade agreements, the food quality standards set by international bodies (e.g., Codex) are the benchmarks (Hooker 1999; Hooker and Caswell 1999). The second question is how differences in regulation are managed to facilitate trade:

Harmonization: standardization of regulations in identical form

Mutual recognition: acceptance of regulatory diversity as meeting common goals (sometimes called reciprocity or equivalency)

Coordination: gradual narrowing of relevant differences between regulatory systems, often based on voluntary international codes of practice (sometimes called alignment)

The continuum begins with no regulatory rapprochement and moves to coordination, which is a broad range of weak forms of cooperation; then to mutual recognition; and finally to the strongest level of rapprochement, harmonization. Harmonization has most often been applied via minimum input, process, or product performance standards for particular sets of food quality attributes. It can be applied across the full attribute space for these products. Mutual recognition involves agreement among a group of countries that a good legally produced within the bloc will be legal for sale throughout the bloc regardless of whether it meets the host country's domestic standards. It has most often been applied to value attributes because countries frequently do not like to give up control over food safety attributes in particular, although it may be applied across the attribute space. Coordination covers a wide variety of efforts to align policy through interagency consultations, adoption of voluntary standards, the

provision of information through supply chains in traceability systems, and other means. It too may be applied across the attribute space. A total lack of rapprochement is possible, but increasingly rare as international food quality standards take on growing importance for all countries.

Quasi-voluntary standards include those managed by government agencies (such as the National Organic Program in the USA), supranational groups (such as ISO), NGOs, or businesses. They are characterized as necessary conditions to be a member of a particular supply chain, often involve experience or credence quality uncertainty and information asymmetry, but are more structured than voluntary international food quality standards.

Private certification programs, such as the Global Food Safety Initiative (GFSI), add another layer to the picture of international food quality standards worldwide. Such systems can be voluntarily adopted as a source of viable third-party certification that may back up or even replace government regulation of some quality attributes, most frequently value and production attributes. Increasingly, food safety attributes are being integrated within broader meta-standards (see, for example, Souza Monteiro and Hooker 2012, for an introduction to the role of third-party audits in the *Food Safety Modernization Act* in the USA). They are also playing an increasingly important role in contractual agreements, with many food processors and retailers requiring certification for all of their input suppliers. If these trends continue, they will soon evolve into quasi-voluntary international food quality standards.

Summary: So What?

International food quality standards play a critical role in facilitating agricultural and food trade. Standards can be narrow or broad; are designed and managed by government agencies, third-party certification organizations, or business; are intended to minimize or mitigate search, experience, or credence information asymmetry and uncertainty; and focus on product or process attributes and/or information. Ideally standards continue to evolve in response to

a diverse and dynamic set of stakeholder beliefs and needs. Concerns remain that despite efforts to enhance regulatory rapprochement, certain international food quality standards are used to impede trade and provide protection to domestic industry. This blocks the benefits of freer agricultural and food trade, creating ethical dilemmas.

Cross-References

- [Fair Trade in Food and Agricultural Products](#)
- [Food and Agricultural Trade and National Sovereignty](#)
- [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)
- [Food Risks](#)
- [Food Standards](#)
- [Free Trade and Protectionism in Food and Agriculture](#)
- [Multilateral Trade Organizations, Food, and Agriculture](#)

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Islam and Food

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Synonyms

Islamic landscapes for food practice; Muslim identity through food practice

Introduction

An exploration of food and Islam must begin with food's role in the Qur'ān, Islam's holy book. For Muslims, this book is the record of divine revelations made to the Prophet Muhammad, intended to guide humanity. The Qur'ān describes how food originates, what it signifies, and what foods are allowable or prohibited, which inform Muslim identities and Islamic theology, law, ethics, and aesthetics. In addition, Muslim food practices follow from traditional stories (*ḥadīth*) about the Prophet Muhammad and his companions. Islamic legal prescriptions not only identify what foods are religiously sanctioned for Muslims but also the manner of their preparation. After discussing what Muslims are prescribed to do with respect to food, this entry examines practices observed around the world, which show the importance and incorporation of food for ritual occasions, holy festivities, and commemorations. Finally, the entry briefly considers animal rights and vegetarianism, agricultural sustainability and the issues brought about

by food industrialization and globalization, and the scriptural connection of food with paradise.

Food as Blessing and Reward

Let people consider their food: We [God] pour down water abundantly and cause the soil to split open. We cause grain to grow out of it, and vines, edible plants, olive trees, date palms, gardens dense with foliage, fruits and herbage, all for you and for your livestock to enjoy. (Qur'ān 80:25–32)

Drawn from the Qur'ān, the epigraph above depicts food as a divine blessing for humans and livestock to enjoy. The provisions that God has set on earth are an indication of God's wisdom, reminding adherents that God is without equal, incomparably wise, and generous (Q. 2:22). Food makes its appearance in paradise (*al-jannat*), in which the original couple, Adam and his wife, are directed to enjoy food from the plenteous garden wherever they find it, but not to approach a certain tree, lest they become tyrannical or wrongdoers (*ẓālimīn*) (Q. 2:35). They partake of it nonetheless and are thus banished from the garden, after being forgiven and counseled to follow God's guidance (Q. 2:38). Sometimes human beings are tested by hunger, loss, or meager harvest, but those who respond with patience and assert that they are from God, to whom they will return, are divinely blessed (Q. 2:155–157). God provides succor when asked, as when Moses prayed for water for his people and was directed to strike a stone with his staff, at which instant 12 springs appeared (Q. 2:60), as a reminder to live a life of righteousness. Believers who do righteous deeds will secure a place in paradise, where waters flow and gardens grow and where they will be offered fruit (Q. 2:25).

Lawful and Prohibited Foods

The theme of not approaching, that is, not partaking of the fruit from a certain tree, continues in the Qur'ān in Chap. 5, appropriately titled “The Table Spread” (*al-mā'idah*). This entry identifies foods (*ṭa'ām*) that are prohibited (*ḥarām*) and

foods that are permitted (*ḥalāl*). The list of *ḥalāl* or “lawful” foods includes grazing livestock (Q. 5:1) and animals hunted while not in a state of *iḥrām* (the state observed during the time of pilgrimage (*ḥajj*)), whether minor (*umrah*) or major (*ḥajj*), during which a pilgrim performs rituals of purification and wears prescribed clothing) (Q. 5:2 and 22:29). In addition, “the food of those who were given the Scripture” (Q. 5:5) is permitted, as is the food of the Muslim permitted to other scripturists, usually interpreted as Christians and Jews. Prohibited or *ḥarām* foods include blood, dead animals (*maytah*), the flesh of swine, animals offered in sacrifice to other than God, or animals that have been gored and killed through strangulation or a violent blow or remnants from what wild animals have eaten. However, God gives mercy and forgiveness to a person who partakes of any of these without the intention to sin due to severe hunger (Q. 5:3; see also 2:173, 6:145, and 16:115). Consequently, due to the emphasis on the manner of an animal's killing, Islamic law requires that animals be killed in a prescribed way, such that its blood drains out. Q. 6:118–121 further specifies, “And eat of that [meat or food] over which the name of God has been mentioned. . . and do not eat from that over which the name of God has not been mentioned, for indeed, it is grave disobedience.” Wine (or more accurately, intoxicants, *al-khamr*) is also forbidden (Q. 5:90). Although specific interpretations may vary (below), most scholars agree that alcohol, pork, blood, and carrion meat are prohibited.

Islamic Legal Prescriptions

The Qur'ān provides compelling passages about food, and Islamic legal scholars engage with food and eating with attention to *sharī'ah*, the term for Islamic legislation, which literally means the path to the watering hole. Thus, jurists present Islamic law as a means for quenching the thirst for divine order and justice. Daily activities, such as prayer and charitable acts, show piety and submission to God's laws, as does the food one partakes of daily. Islamic law concentrates considerable

attention on food, particularly defining what is lawful (*ḥalāl*) and prohibited (*ḥarām*). The term *tayyib* is useful for describing good and wholesome food. In addition, the Prophet Muhammad is considered the exemplar of correct behavior in accordance with the belief that as God's Prophet, he was divinely guided. The Prophet's words and actions are paradigmatic, as are those of his closest companions. Such exemplars are recorded in a body of literature known as the *ḥadīth* or traditions. When scholars describe Muhammad's fasting or his meals, these *ḥadīth* stories offer prime examples for Muslims to emulate. For example, the Prophet was known to wash his hands before a meal and to break his fast with dates. Food is among the characteristics defining a Muslim in a *ḥadīth* ascribed to Muḥammad, in which he said, "Whoever recites our prayers and worships in the direction of our *qiblah* [facing the Ka'ba, the sanctuary in Makkah (Mecca)] and eats the meat of our slaughtered animals, that person is a Muslim who has the protection of God and the protection of His Messenger" (*Ṣaḥīḥ al-Bukhārī*, 1:82–83, cited in Freidenreich, 144).

The Arabic term *ḥalāl* is broader in scope than simply describing food restrictions. *Ḥalāl* refers to what is lawful or permissible, more generally, in contrast to *ḥarām*, the unlawful. In Islam, any action may be placed within one of five legal-ethical categories: *ḥarām* (forbidden), *makrūh* (reprehensible), *mubāḥ* (neutral or indifferent), *mandūb* or *mustaḥabb* (recommended or commendable), and *wājib* or *fard* (required). Islamic law regulates meat more carefully than other foods. These laws deal with the raising and slaughter of food animals, and many authors highlight the humane treatment of animals exhibited in the Qur'ān on account of creatures constituting communities, as do humans (Q. 6:38). Q. 5:3's reference to "a proper act of slaughter" entails that God must be invoked and, to avoid prolonged suffering, a carotid artery and the trachea must be cut with a sharp knife. There is a specific way of naming God for animal slaughter, first stating intent (*niyyah*) to begin the ritual act of slaughter, followed by invoking God according to this formula: "In the Name of

God, God is most Great," in Arabic "*Bismillah, Allahu akbar*." Meat prepared from an animal thus slaughtered is known as *dhabīḥah*. Both the Torah and the New Testament prohibit eating blood, a prohibition that is also found in the Qur'ān and links the Muslim community to the shared divine covenant with the peoples of the Book (commonly understood to be Jews and Christians). The blood of the slaughtered animal is allowed to drain before the meat is prepared for consumption.

Halāl and *ḥarām* foods are elaborated in multiple schools of Islamic law, which are based on the Qur'ān but also draw heavily on the *sunnah*, both oral and written record of the practice of the Prophet Muḥammad and his close companions. Thus, al-Ṭabarī (d. 923) permits the meat of slaughtered animals prepared by the peoples of the Book (Jews and Christians), but not that prepared by polytheists and worshippers of images and statues. The Sunni and the Shi'i jurists, both of whom commonly appeal to the Qur'ān but otherwise appeal to different sources of authority, differ in their views on whose meat is permissible to Muslims. Sunni jurists such as Ya'qūb Abū Yūsuf (d. 798) also forbid eating the meat, but not other foods, of Zoroastrians (Magians), even though they are otherwise in all respects to be treated as peoples of the Book, as it entails the act of ritual slaughter in which the animal is offered to many deities. Ibrāhīm al-Nakhā'ī held that eating meat over which a Christian butcher had invoked Christ was reprehensible. However, even though ostensibly Christians invoke Christ, rather than God, when slaughtering animals for food, Sunni jurists such as Abū Bakr Muḥammad Ibn al-'Arabī (d. 1148; not to be confused with Muḥyi al-Dīn, the famous Sūfī) calls upon God's making permissible meat prepared by the peoples of the Book sufficient divine generosity to justify eating their meat, despite their Qur'ānically unacceptable elision of Christ with God. Ibn Hazm in his chapter on animal slaughter ruled that Zoroastrians were to be treated as peoples of the Book, implying that all foods prepared by them were allowable. In contrast, Shi'i jurists such as Muḥammad b. al-Ḥasan al-Ṭūsī (d. 1066/7) allowed for grain and other foodstuffs prepared

by non-Muslims, but not meat slaughtered by them. This prohibition occurred despite the concession granted to peoples of the Book by Q. 5:5 and despite the permission, provided the name of God had been recited over the animal slaughter, granted by Zayd b. 'Alī (d. 740), whose lineage traced directly back to 'Alī, the first Imām of the Shi'ah (and hence considered by the Shi'ah to have inherited the Prophet's spiritual and temporal authority). Interestingly, the authority of the sixth Imām (sixth for Ithnā 'Asharī or Imāmī Shi'ites; the fifth for Fāṭimid Shi'ites), Ja'far, is invoked to argue opposing positions. On the one hand, his authority is invoked to suggest that only the name of God invoked by monotheists, understood by those who interpret the text restrictively as Muslims, can be trusted. On the other hand, his authority is cited to suggest that meat prepared by any butcher who invokes God's name properly, irrespective of faith, is permissible to eat, invoked by Fāṭimid Shi'ites also. Thus, for some Muslims, all foodstuffs with the exception of grains and the like (i.e., unprocessed foods) are rendered impure (*najis*) for consumption when prepared by non-Muslims. The goal here is to distinguish Imāmī Shi'is from Sunnis in the latter's acceptance of foods from scripturalists. Such food restrictions are deployed as a strategy to draw a line in the sand separating Imāmī Shi'is from all other faith communities. Dietary restrictions established by religious groups as a mode of distinguishing self from other are visible in non-Muslim religious settings, as well. Clearly, such distinctions both within the Qur'ān and outside it have much to do with setting the terms on relations with other religious communities as a mode of self-identification. Among Muslims, these prohibitions extend from the idea that unbelief and impurity – exemplified through the holding of false beliefs – can be communicated through touch.

Feasting and Fasting: Food and Ritual Occasions

Feasting and fasting are both religious prescriptions that mark ritual commemorative occasions,

which remind adherents about their sacred history. Feasts and fasts are junctures at which one may reflect upon and strengthen one's faith. While designated times of feasting are usually joyous occasions, they sometimes follow periods of privation, often expressed through fasting, that allow for introspection, prayer, heightened moral reflection, and charity and goodwill toward others.

Ramadan

One of the *arkān* or pillars of Islam is fasting (*ṣawm*) during the Islamic month of Ramadan, prescribed in Q. 2:183–185. In the lunar calendar, Ramadan is a month when Muslims practice fasting from dawn (*fajr*) to dusk (*maghrib*) to strengthen their religious commitments. Due to the difference between the lunar and solar calendars, the month of Ramadan shifts each solar year, slowly transitioning from one season to another. The fast consists of refraining from food, drink, and intercourse during daylight hours, breaking the fast (*ifṭār*) each evening after dusk and beginning the day before dawn with a small meal (*suhūr*). The predawn morning meal is generally lighter, since some believe a heavy meal will inspire more thirst during the day's fast. Just as the pilgrimage to Mecca (*hajj*) is both an outer and inner journey to God's abode, the fast at Ramadan serves inner and outer functions. The Ramadan fast involves the physical discomfort of hunger and thirst, which encourages self-restraint, compassion toward those who live with daily hunger or want, and gratitude for having sustenance. It also entails cultivation and control of the mind, beginning with expressing the *niyyah* or intention to fast, restraining oneself from coarse speech and quarrelsomeness, avoiding lustful and avaricious thoughts, and encouraging an attitude of benevolence toward others, often through acts or gifts of charity. Remaining steadfast in God's requirements despite discomfort may be purifying to the mind and body. This is also a time for each fasting Muslim to spend in prayer and meditation, renewing faith, increasing moral self-awareness, and considering his or her life purpose. When people are unable to complete their fast during

Ramadan due to temporary illness or travel, the fast may be completed later. If fasting presents extreme difficulty, a Muslim may compensate by feeding someone in need (Qur'ān 2:184). Pregnant women and young children are exempt from fasting. Also Muslims tend to visit their place of worship more frequently.

During the month of Ramadan, fasting Muslims eat after darkness falls before performing the sunset prayer (*ṣalāt al-maghrib*). The daily fast closes after sunset with dates or fresh fruit, followed by *iftār*, the evening meal after the day of fasting. Eating dates is associated with the Prophet Muhammad, who reportedly loved dates and broke his fast with dates and water. Because Ramadan is the most significant time of year in Islam, the Prophet's practices become more important for expressing religious commitment. Camel meat is another food associated with the Prophet and his family and thus eaten more frequently in Ramadan evening meals. Many *iftār* dishes vary regionally, depending on local food preferences and lore regarding which foods and drinks are best for delighting the palate, strengthening the body, and quenching thirst. *Rooh Afza*, for instance, is a nonalcoholic drink concocted by Hakeem Hafiz Abdul Majeed in 1906 in India, consisting of a medley of herbs, fruits, vegetables, flowers, and roots, that is now sold as a syrup to be added to water, ice cubes, sugar, milk, and cinnamon and prepared in India and Pakistan as a drink to be served during *iftār*. Indonesians prepare desserts such as *kolak*, made with palm sugar, coconut milk, pandanus leaf, mung beans, and fruit, to which optionally tapioca or cassava may be added, cooked, cooled, and served during the month of Ramadan. *Lāghmān* noodles, derived from *lamian*, a type of Chinese noodle, are favored as *iftār* dishes in Central Asia and Chitral, while in places such as Trinidad and Tobago, local fare such as roti with curried chicken, goat, duck, and chickpeas is served at the masjid or mosque as part of a communal *iftār* meal. Russian Muslims drink *kvass*, whose low alcohol content classifies it as a nonalcoholic beverage. *Kvass* is made from fermented rye bread and mixed with fruits and/or mint as it is thought to staunch thirst.

The month of fasting ends with a celebration held on the first of the following month, Shawwāl, the 'Īd al-Fiṭr (festival of breaking the fast), in a show of gratitude. Fasting is not permitted on this day, which begins with a small breakfast that often includes dates before the performance of special prayers, sermons exhorting good deeds, new clothing, and family meal gatherings. Countries such as Egypt declare the occasion fit for a 3-day holiday to allow families restorative time to gather, share meals, and celebrate.

'Īd al-'Aḍḥā

This feast day or 'īd (Eid), occurring on the 10th of the Muslim lunar month Dhū al-Ḥijja, commemorates the Prophet 'Ibrāhīm's (Abraham) willingness to sacrifice his son Ismā'īl (Ishmael) and marks the end of the annual *ḥajj* or pilgrimage to Makkah (Mecca). It is a time when special Eid prayers are recited, new clothes are worn, and gifts are given, especially to children. Families and friends gather for a meal usually consisting of an animal that has met certain age and quality standards, who has been ritually slaughtered for the occasion, to mark the replacement of Ismā'īl with a ram as he was about to be sacrificed. Pilgrims participating in the pilgrimage make this sacrifice in the valley of Mina. At least two-thirds of the animal is to be shared with the community, one-third is retained by the family, one-third given to extended family and friends, and one-third given in charity so that no one is left without the means to commemorate this occasion.

The Saudi Project for Utilization of Hajj Meat (www.adahi.org) reports close to a million heads of sheep, and 3,000 heads of camels and cows were utilized during the 2011 *ḥajj* season. The Kingdom of Saudi Arabia established this organization, which now employs close to 40,000 people, approximately 20 years ago to serve several functions: to distribute meat to the poor in Makkah, as well as to needy Muslims around the world; to ensure the fulfillment of religious and health regulations for animals; to ensure environmental protection around the holy sites of pilgrimage; and to distribute the proceeds from the sale of offal to the poor in Makkah. A map shows

recipients of meat ranging from places in West Africa to the Sudan, Mozambique, and Tanzania to regions further east in Azerbaijan, Pakistan, and Bangladesh. The organization's stated objectives reflect some awareness of the environmental costs of the ritual practice of slaughtering animals for Eid in asserting that no such meat should be wasted. However, animal rights organizations such as Animals Australia (www.animalsaustralia.org) protest the exportation of live animals to Muslim-majority countries such as Turkey, Indonesia, Kuwait, Egypt, and Pakistan on the grounds that the animals are treated cruelly and as part of their larger campaign to stop animal exportation and to encourage people to adopt vegetarianism to reduce the water and other resources needed to raise livestock. Increasingly, Muslims themselves are asking whether the custom of commemorating the Eid continues to justify the scope and scale of the practice, on moral and environmental grounds; however, serious debate and reflection have yet to be undertaken. The Saudi Project for the Utilization of Meat announces the message of the project on its website thus:

"Exhort all men to make pilgrimage. They will come to you on foot and the backs of swift camels from every distant quarter (Q. 22:27); they will come to avail themselves of many benefits to pronounce on the appointed days the name of Allah over the cattle, which He has given them for food." "Eat of their flesh, and feed the poor and the unfortunate." (Q. 22:28, 36) "Their flesh and blood does not reach Allah; it is your piety that reaches him." (Q. 22:37)

Is it possible to theologize constructively about animal sacrifice at the time of pilgrimage bearing in mind the tremendous moral and environmental costs of observing a ritual whose scale has gone far beyond that at the time the Qur'an was revealed? While these verses proclaim that pilgrims are to offer animals in sacrifice, they do not require that Muslims not on pilgrimage do so as well, while the final verse invoked here opens up the possibility that the animal sacrifice could be offered symbolically, since God is the recipient of piety and not the flesh and the blood of the animal.

Muḥarram Rites

The first month of the lunar year is Muḥarram, considered by early Muslims to be one of the sacred months during which no blood could be shed, including the hunting of animals. The 10th of Muḥarram is called 'Āshūrā', and the traditions (*ḥadīth*) relate that upon being told that the Jews fast on this day to commemorate the day when God parted the Red Sea to let Moses and his people pass in order to rescue them from the Pharaoh, the Prophet told his people to fast for 2 days, on either the 9th and 10th of Muḥarram or the 10th and 11th. This fast is considered recommended, not obligatory, by Sunni Muslims, having been replaced by Ramadan as the obligatory period of fasting. Fasting Muslims in Egypt will prepare a pudding called Ashura made from wheat, nuts, raisins, and rosewater to be had after dinner on that day.

For Shi'ah Muslims, the month of Muḥarram is a time of intense sadness and mourning. On October 10, 680 CE (10th of Muḥarram, 61 AH; anno hijri (AH) marks the commencement of the Muslim lunar calendar dating from the flight or *hijra* of Muslims from Makkah to Madinah in 622 CE), the Prophet's grandson, Ḥusayn b. 'Alī, was massacred on the battlefield near Karbala (in present-day Iraq) by Ibn Ziyād, governor of Kufa, whose forces were allied with Yazīd I, the Umayyad caliph. Significant in this narrative is that Ḥusayn's small band of followers and family was cut off from access to water from the nearby Euphrates River. Ḥusayn's grave became a pilgrimage site. Shi'ite tradition holds that Ḥusayn's sister Zaynab began a period of mourning for her brother, which Shi'ites observe to this day in 'āzā dārī (mourning) rituals and gatherings (*majālis*) at which sermons are made recounting the events leading up to the massacre, elegies recited, prayers offered, and lamentations expressed, alongside processions during which participants, mostly men, will express their grief through *matam*, consisting of rhythmically striking their chests or their backs with chains or with small sharp blades. The Shi'ite period of mourning, commencing with the sighting of the crescent moon announcing the first of Muḥarram (the Islamic calendar counts its days from sunset

rather than sunrise), lasts to the fortieth day (*Chehellum*) after the 10th of Muḥarram, and during this period of mourning, joyous occasions such as weddings and birthdays are not observed.

In Karbala-related mourning rituals in South Asia, meat is avoided during the Muḥarram month because of its association with times of celebration and joy; most Shi'is observe the tenth of Muḥarram not as a fast, a *roza*, connoting auspiciousness, but as a day of *faqā*, poverty and hunger, in emulation of and solidarity with Ḥusayn and his retinue's hunger and thirst in the 3 days preceding their martyrdom. Tradition also holds the occasion of the massacre was utilized by Ibn Ziyād and his troops to denote a time of auspiciousness. Hyder writes: "The meal on the tenth of Muḥarram consists of *khichrī* (rice cooked with lentils), *khaffa* (tamarind soup), and *butti* (yoghurt rice); butti, though a staple in many South Indian households, is eaten in most Shii Hyderabad households (sic) only during this Muharram meal." (Hyder 2006) Majlis attendees are given *tabarruk*, consecrated food, which varies from region to region depending on local cuisines. An ethnographic account from Karachi, Pakistan, notes that the distribution of food such as *halīm*, made of wheat, barley, lentils, and spices, with or without meat such as beef, mutton, or chicken, and water is held by many Shi'is to recompense for the oppressed who died while hungry and thirsty. *Sabils* (or stalls for the distribution of water by children to passersby) acknowledge the thirst of those on the battlefield who were cut off from water. Here, the breaking of the day of hunger and thirst, the 10th of Muḥarram, was observed with *halīm*, *roti* (a kind of round flatbread made with wheat flour), milk, and water (Schubel 1993).

Navrūz

The festival of Navrūz, "New Day," occurs at the spring or vernal equinox and marks the beginning of the Persian New Year. It has been celebrated from ancient times to the present in Persian civilization and is observed by Shi'ite communities influenced by Iranian culture as well as other faith communities in the Persianate world. The Achaemenid (559–330 BCE) and Sassanian

(226–652 CE) kings celebrated the festival with public feasts and the giving of gifts, while the populace built fires and sprinkled water on each other. Among the customs observed by these pre-Islamic dynasties, the number seven figured prominently, and this ancient memory is still preserved in contemporary Shi'ite celebrations of Navrūz in the *haft-sin* laid out on the table. The *haft-sin*, "seven [items beginning with the letter] 's'," are *sabzeh*, wheat, barley, mung bean, or lentil sprouts specially sprouted for Navrūz, symbolizing rebirth; *samanū*, a wheat germ pudding symbolizing prosperity; *senjed*, dried silver berry or oleaster, symbolizing love; *sīr*, garlic, symbolizing medicine; *sīb*, apples, symbolizing health; *sumāq*, sumac, symbolizing sunrise; and *serkeh*, vinegar, symbolizing maturity and patience.

Navrūz marks new beginnings for both natural and spiritual worlds, just as springtime is essential for new growth, and divine revelation is essential for spiritual growth. This theme of renewal is expressed through growing sprouts from grains or lentils in small containers, and the resulting *sabzeh* is placed on the Navrūz table. Other offerings include decorated eggs, fresh fruit, baked goods, a mirror, a copy of the scripture observed by the household (in the case of Muslims, the Qur'ān), a bowl of water in which leaves and flowers are set afloat, and sweets. The Navrūz "season" lasts 12 days, and on the thirteenth day, the *sabzeh* is cast into a river to symbolize the flowing away of the previous year's troubles. Among some Shi'ite communities such as the Ismā'īlis, small packets of grain are handed out on Navrūz to denote blessings for the year (Kassam 2006).

Animal Rights and Muslim Vegetarians

The Qur'ān affords rights to animals, including livestock. Livestock have rights to water, pasture, and fair treatment (Foltz et al. 2003). Animals are recognized to live in communities, thus using an otherwise human category to show the value and respect animals deserve, including recognition of their relationships to each other (Foltz et al. 2003) (Q. 6:38). However, vegetarianism has remained

unpopular, even receiving negative attention from major theological leaders. Nonetheless, certain poets and mystic-Sufi historical figures ate vegan or vegetarian diets. A tenth-century poet named al-Ma'arri who avoided eating meat was accused of "trying to be more compassionate than God" (Foltz 2006). This serious accusation is called *shirk*, or sharing God's identity, comparing oneself or anything less than God with the unmatched, unique divinity of the one God. For contemporary Muslims in diaspora, the choice to eat vegetarian becomes important when faced with meat raised in an inhumane manner or with growing concerns about the environmental costs of raising livestock, in addition to traditional concerns discussed above regarding *halāl* and *dhabīhah* slaughtering methods.

Modernity, Western Cultures, Industrial Agriculture, and Globalized Food

In many Muslim societies, traditional techniques valuing flavor and quality have given way to some extent to the industrialized techniques found in Western nations emphasizing quantity and economic value. Like other modernizing influences, food transformations have included both enthusiastic emulation of a transnational, industrial cuisine, as well as return to and revival of perceived traditions and rejection of outside influence. Both sentiments underlie cultural commitments and elements between fantasies of modernizing improvements and nostalgic hopes for cultural continuity, as modernity itself can give rise to nostalgia. However, New World foods such as the tomato and contemporary techniques such as frying largely have been indigenized. Some scholars of Middle Eastern foodways argue that such transformations are inevitably political. For example, "food nationalism" uses foods and narratives of food origins in constructing national identity (Zubaida and Tapfer 2011).

Since the 1970s, international fast food can be found in Muslim-majority regions, though these establishments ride the political tide of US popularity. Anti-Western and anti-American

sentiment can be targeted at these chains; thus, branches may close when the United States or pro-American political groups ebb in political favor (Heine 2004). McDonald's fast food is exotic, more costly than local food, and tends to appeal to youth interested in modernity via Westernization (Heine 2004). On the other hand, *halāl* consumption has been on the rise among young Muslims in France as a means of expressing identity (Bergeaud-Blackler 2006).

Meanwhile, the global *halāl* market is burgeoning, becoming further mobilized and professionalized within international commodity trading and industrial business models. The international *halāl* food market is sizable, but entrepreneurs have an eye to expanding its reach, rendering more of the world's approximately one billion Muslims into globally traded *halāl* food consumers. *Halāl* advertisements and educational materials appear on the Internet, some emphasizing social media connectivity, reflecting a highly technologized setting to market products in a global trade environment.

In global food production, genetically modified organisms (GMOs) are recent developments, thus without Qur'ānic precedent, but subject to contemporary legal interpretation or lack thereof. Some Muslims consider GMOs to be dubious, falling into either questionable or not permissible categories. Others have considered and approved use of GMOs, allowing anything not named *ḥarām* in the Qur'ān. The Islamic Jurisprudence Council decided that GMOs can be considered *halāl*. Some scholars propose that if a GM animal or plant food derives from pork or other *ḥarām* (impermissible) foods, then the GMO will also be *ḥarām*. If not, then the GMO is acceptable. Ali Maarabouni reports that religious leaders considering GMOs emphasize human responsibility for nature's health (Maarabouni 2003). Reflecting appreciation for nature as God's gift, these leaders asserted that if GMOs damage nature, then they should be prohibited, thus rendering GMO food labeling relevant.

Against the background of GMOs and international trade in *halāl* products, Muslim organizations have arisen to promote eating locally and humanely raised *halāl* meat from farms with fair

labor practices. In the United States, for example, the agricultural models utilized by Taqwa Eco-Food Cooperative (now Whole Earth Meats) in Chicago, Illinois, and Norwich Meadows Farm in Norwich, New York, provide an alternative to industrial agriculture, which is pesticide and technology intensive. Taqwa leaders envisioned their more traditional agricultural model to resemble that found in the Prophet Muhammad's era, a contrast to the serious ethical challenges to animal welfare found in factory farms and the large-scale, commercial meat industry.

Ending in Paradise: "Perpetual Gardens Graced with Flowing Streams" (16:31)

In Islam, paradise is literally "the garden," a lush land gushing with streams of milk and honey. In this blissful garden, food and drink are rewards for good works and right living (Q. 16:30–32, 52:19). Food represents not only practical physical nourishment but also spiritual fulfillment. Not only food, but drink is plentiful in the forms of water, milk, honey, and wine, listed as gifts from God in addition to forgiveness (Q. 47:15). Wine is the only *ḥarām* item that appears in blessed abundance in paradise, though other passages name paradisiacal drink as nonintoxicating (Q. 52:23, 56:18–19). Interestingly, the well-watered paradise appears comparable to a well-managed garden subject to a sustainable land ethic, perpetually abundant.

In al-Bukhari's *Al-Adab Al-Mufrad*, a tradition (*ḥadīth*) of the Prophet Muhammad instructs people as they face the Final Day, "If the last day comes and you have a sprouting palm in your hand, plant it." Thus, agriculture remains religiously relevant even to the end of time.

Summary

Islamic food practices derive from the Qur'ān and *ḥadīth* traditions depicting the Prophet Muhammad and his close companions, who offered the best examples of how to live a morally righteous life with specific directions relating to food and

animals. Multiple Qur'ān passages show the importance of food practices, delineating foods that are lawful (*ḥalāl*) or unlawful (*ḥarām*). Islamic legal scholars have interpreted specific text passages, which then influence food traditions in various Muslim communities. These communities can differ in legal interpretation, though alcohol, pork, blood, and carrion are commonly understood as unlawful. Feasts and fasts are central occasions for expressing and reinforcing Muslim piety, particularly Ramadan, 'Īd al-Fiṭr, 'Īd al-'Aḍḥā, Muḥarram, and Navrūz. Though Muslim vegetarianism is uncommon, land and animal protection is encoded in Islamic scripture and law, if underutilized. Contemporarily, food's industrialization and globalization influence (1) the global *ḥalāl* food market, (2) fast food's social role in Muslim-majority regions, (3) the current Islamic legal conversation on genetically modified organisms (GMOs), and (4) religiously motivated movements in Western cityscapes that embrace sustainable, *ḥalāl* agriculture. Finally, the Qur'ān depicts paradise as a garden flowing with streams and abundant with fruit. This paradisiacal vision resembles the resplendent results of a well-managed land ethic, yet represents spiritual fulfillment and the rewards for moral living.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)
- [Fasting](#)
- [GMO Food Labeling](#)

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Islam and Food and Agricultural Ethics

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Synonyms

Allah/God; Hadiths; Quran; Sunna; The Prophetic Sunna; Umma/community

Introduction

The Islamic religious tradition was founded in western central Arabia by the Prophet Muhammad in the seventh century CE, based on oral recitations that he received which he and his followers believed to be from Allah/God. Islam is an Arabic word meaning “submission,” in this context to Allah, whose recitations to Muhammad by means of the archangel Gabriel continued for some 22 years and were known as the “Qur’an,” meaning divine “recitation.” Although the Prophet Muhammad was himself not literate

(“able to read”), his followers eventually gathered the recitation chapters, known as Suras, into a canonical (“official, sacred”) text which has descended since the founding period as the principal resource for Muslims (those who have “submitted” to Allah) to understand and obey their branch of ethical monotheism preceded by Judaism and Christianity with all three tracing their lineages back to the Patriarch Abraham (see the biblical book of Genesis, beginning with Chap. 11, concerning his life and influence).

Although the Qur’an is the most authoritative source for Islamic doctrine, worship, and law, a second authoritative source was produced based on the Prophet Muhammad’s life and teachings as the tradition’s founding father. This source is known as the prophet’s Sunna, meaning the “custom,” “way of acting” of a person, particularly of the Prophet Muhammad in this context throughout his years of leadership of the early Muslim community in the Holy City of Mecca and later in the base of the developing Islamic government in the northern city of Medina, where Muhammad and his companions settled following their *hijra*, “emigration,” in 622 CE. The Sunna of the Prophet Muhammad contains many individual “reports,” “events,” and “quotations,” known in their original Arabic language as *hadiths*. While these reports do not have the status of divine revelation, which the Qur’an is believed by Muslims to be, they are nevertheless of central importance when they address subjects, situations, and detailed information about practicing Islam correctly but not contained in the Qur’anic text. And since the Qur’an does declare Muhammad to be Allah’s “Messenger” (*rasūl*, e.g., in Sura 48:29), that means a great deal in how the developing Muslim community regarded him as a vital source of guidance.

In this entry on food and agricultural ethics in Muslim life and practice, it is important to understand that many of Islam’s teachings and standards are based on the Qur’an, Islam’s holy scripture, and the Prophet’s Sunna as found in many *hadith* reports from several influential collections that were shared and published over the first two centuries of Islam’s development into a major tradition among the world’s religions.

Food and Drinks Addressed in the Qur'an

Food and potable liquids (lawful and unlawful) and their consumption and use are treated in the Qur'an to some extent. In Sura 2:172–173 Allah declares: "O ye who believe! Eat of the good things that We have provided for you and be grateful to Allah, if it is Him ye worship. He hath only forbidden you dead meat, and blood, and the flesh of swine, and that on which any other name hath been invoked besides that of Allah" (all Qur'an translations by A. Yusuf 'Ali). There is some flexibility for persons who need nourishment in an emergency situation, as the second verse advises, "provided there is no willful disobedience, nor transgressing due limits – then he is guiltless. For Allah is Oft-Forgiving Most Merciful." The Qur'an requires Muslims to eat only meat that has been consecrated to Allah. There are also stipulations about how meat has been slaughtered, obtained, treated, and prepared. Generally, the Qur'an permits Muslims to eat food of the People of the Book – Jews and Christians – which "is lawful unto you and yours is lawful unto them" (5:5).

Pork is of course not permitted for either Muslims or Jews. In addition to the forbidden foods already mentioned, "Forbidden to you (for food) are . . . that which hath been killed by strangling, or by a violent blow, or by a headlong fall, or by being gored to death; that which hath been (partly) eaten by a wild animal. . . ." (5:3). And wine or any kinds of intoxicants are not permitted for Muslims at all. The Qur'an states that intoxicants and gambling are part of Satan's plan to "excite enmity and hatred between you [i.e. Muslims] . . . and hinder you from the remembrance of Allah and from prayer: Will ye not then abstain?" (5:91).

There is a sense of the diets of Arabs in the dawn years of Islam's development by mention of specific foods in the Qur'an. In 2:61 the followers of Moses wandering in the wilderness with him and eating manna and quails saying: "O Moses! we cannot endure one kind of food (always); so beseech thy Lord for us to produce for us of what the earth groweth – its pot-herbs,

and cucumbers, its garlic, lentils, and onions." The Qur'an mentions several fruits (e.g., pomegranates, dates, figs, grapes, and olives), not in a manner that might remind one of a cookbook but in symbolic ways bearing on the many wonderful "favours" provided by Allah for humans and whether they will be ungrateful, deny, or misuse them. Cow's milk and honey are mentioned (16:66–68) as valuable foods, but not to the extent of fruits. Land game is permitted generally for hunting and eating, but not for Muslims in sacred precincts such as Mecca and while wearing pilgrim garb (5:96). Catching "water game" (fish, water fowl, etc.) is permitted for Muslims whether at home or while traveling. In 6:141 there is a statement about wonderful foods that Allah has provided for humankind as well as for other living beings (by implication) ending with: "But waste not by excess: for Allah loveth not the wasters." (A generously detailed, sophisticated article by David Waines, about what has been discussed here, is cited in the Reference List following this essay.)

The Hadith on Food and Drinks

There is a considerable amount about foods and drinks and how they should be obtained and managed in the Hadith literature (the Prophetic Sunna) that reflects what is found in the Qur'an, except that in the Hadith literature it is found in considerably greater detail, extending to social etiquette. The following are some examples of this last category (all quoted from *A Manual of Hadith* 1988):

'Umar [a leading Companion] said, The Messenger of Allah (peace and blessings of Allah be on him) said: 'Eat together and do not eat separately, for the blessing is with the company.' (p. 356, no. 25)

'Umar ibn Abu Salamah said, 'I was a boy being brought up in the care of the Messenger of Allah (peace and blessings of Allah be on him) and my hand was active in the bowl, taking from every side.' So the Messenger of Allah (peace and blessings of Allah be on him), said to me, 'Boy! Say *Bismillāh* [In the Name of Allah.] and eat with thy right hand and eat from the side nearest to thee.' So this was my manner of eating afterwards. (p. 352, no. 16)

Hudhaifah said, I heard the Prophet (peace and blessings of Allah be on him) say: ‘Do not wear silk or silk brocade, and do not drink in vessels of gold and silver, and do not eat in bowls made of them; for they are for them in this life and for us in the next. (p. 355, no. 22)

There are examples of Hadith literature elements of a social ethic that are found both in the Qur’an and the Prophetic Sunna traditions. As for Muslim teachings concerning agricultural ethics, there is a considerable concern for how Muslims should respect and cooperate for the general well-being of the Umma – the worldwide Muslim community – as well as for other peoples with whom they may be neighbors sharing lands, resources, markets, and social as well as political and legal situations and institutions.

Agriculture in the Muslim World

Ibn Khaldūn (1332–1406 CE) was a great Arab historian who traveled far and wide through the Muslim world of his era. He wrote a very influential three-volume work, the *Muqaddimah* (“Preface”), on how he viewed history, science, literature, and much else within the Muslim context. He had studied ancient agricultural texts extensively down to his era and considered *filāha* (agriculture) to be a branch of physics and needing to attend closely both to practical matters such as planting of crops and their treatment, as well as “their preservation from things that might harm them or affect their growth, and all things connected with that.” He wrote that sufficient books “are available” to meet the peoples’ needs in this critically important dimension of life. So, some sort of agricultural ethical discourse was clearly known to be essential in Ibn Khaldun’s time and over many previous centuries in the Muslim world and beyond to ancient times.

Muslims profoundly revere their global faith community, known as the Umma, an Arabic term, and their worship practices reveal this by their relatively uniform character, which is set forth in the Qur’an. But the Qur’an has more to say concerning what can constitute an *umma*: “There is not an animal (that lives) on the earth, nor a being that flies on its wings, but (forms part

of) communities [*umam*, i.e. “ummas”] like you. Nothing have We omitted from the Book, and they (all) shall be gathered together to their Lord in the end” (Sura 6:38). Passages such as this open up the boundaries of what environmental ethics should consider, particularly when humans desire to accept Allah’s invitation to be His vicegerents, “caliphs” (*khalīfa*) on earth. To be a caliph who applies Allah’s environmental teachings in their stewardship on earth is a major commitment, indeed.

In the present era, there is ever-increasing attention being paid to agricultural and environment ethics by Muslims across the global Umma/community. Numerous websites address this in various ways with essays, reports, invitations to participate, descriptions of specific practices in widely diverse regions of the Muslim world, and much more. While Muslim websites show advanced awareness of and absolute need for contemporary scientific and technological developments and opportunities directed at protecting and conserving agricultural and indeed other important natural environments, as well, they often clearly state the Islamic religious and theological principles and practices that they are committed to as the most important factors in agricultural and environmental ethics. Central to an Islamic agricultural/environmental ethic is a strong commitment to *stewardship* as the means by which Muslims obey and live by Allah’s commandments with respect to caring for the magnificent and life-sustaining natural world He created for us and all living creatures.

One website carries a perceptive article by Hanane Karimi that seeks to lead Muslims toward a “sustainable world” by means of an “ethical perspective concerning the environment.” This is seen to be a “challenge initiated by eco-theology” based in thorough studies of religious and ethical “resources that make sense for the Believers.” Although this website is directed principally toward Muslims, there is a strong sense of welcoming cooperation from dedicated “Believers” of neighboring faith traditions, as well. The author draws equally upon traditional Islamic ethics concerning stewardship of the environment but joins it with modern

environmental ethics, particularly as developed by the American environmental activist Aldo Leopold (1887–1948) whose pioneering ecological advocacy and writings, as Karimi remarks: “...put bio-centric ethics into practice, with the conviction that each organism is a teleological center of life of which the value is intrinsic” (Karimi, p. 1).

Another website provides a list of four “Islamic Agricultural Techniques,” by Taylor Echols, that clearly belong in any discourse on agricultural ethics in Muslim contexts. The four techniques (all listed on the single page of the report) are as follows:

“The Islamic Agricultural Revolution.” This is the range of processes that enabled the early developing Islamic civilization in the arid and high-temperature regions of the North African to Nile-to-Oxus regions of the world to develop such techniques as advanced irrigation systems, water storage, crop rotations, fertilizers, and related things. The traditional techniques are still of great value alongside modern techniques.

“Water and Irrigation.” Continuing need and development, as always, in arid, high-temperature regions.

“Advances in Islamic Agriculture.” Advanced tools and processes for cultivation and care of plants and animals. Factory farms are parallel to such increasingly influential developments in the rest of the world, as well. Increased populations generate growing demands for foods of many kinds and in large quantities. Genetically modified food crops are increasingly accepted by Muslim growers and their clients (more on this below).

“Organic Islamic Agriculture.” Muslim nations are embracing organic agricultural techniques as is much of the rest of the world. Many Muslims do express concerns about possible violations of legally required *halal* purification practices, because of the potential threat in some organic technical processes in newly invented food product developments which may incorporate *haram* (“forbidden”) elements (such as a chemical derived from a pork source).

GMOs: Genetically Modified Organisms in Muslim Contexts

Muslim populations across the Umma tend to permit the development and use of genetically modified organisms (GMOs) for the production of food. Ebrahim Moosa, in a well-researched survey article under the title “Genetically Modified Foods and Muslim Ethics,” remarks that “What GMOs present are a whole series of challenges about which Muslim ethics is as ambivalent and undecided as other religious traditions. At best, Muslim ethics on a range of bioethical and scientific challenges can be described as a work in progress. Most surprising is the dearth of Muslim ethical deliberations on this topic” (Moosa 2009, p. 140).

Moosa discusses GMOs as “manageable risk,” based on guidelines that the Saudi-based Council for Islamic Jurisprudence (CIJ), which has addressed GMOs since ca. 1998, has set forth. In the guidelines, CIJ declares: “It is permissible to employ genetic engineering and its attendant products in the sphere of agriculture and animal husbandry. This is allowed on condition that all necessary precautions be adopted in order to prevent any kind of harm – even on a long-term basis – to humans, animals and the environment” (Moosa 2009, p. 142). The CIJ insists that all products in the human food and medical chains that have been affected by “genetically engineered substances” should be clearly disclosed to consumers.

Moosa concludes his technically sophisticated article in an open-minded way: “Religious authorities take a very pragmatic approach in evaluating biotechnology associated with GMOs. Since there is no compelling evidence that GMOs can harm the body, coupled with the fact that it is rare that prohibited transgenes are used in food, Muslim religious authorities are willing to give GMO-producing bio-technology the green light. Whether the long-term environmental impact of frontier biotechnology will be subject to serious ethical and moral scrutiny within Muslim quarters is not always evident. However, there is some hope that those who adopt a precautionary approach might be

instrumental in expanding the parameters of the debate and thereby bring a larger set of issues and concerns into ethical and discursive purview” (Moosa 2009, p. 155).

Summary

This entry addresses in brief fashion how food and agriculture are understood, produced, and used within the spiritual, legal, social, economic, ethical, and cultural contexts of Islam, the monotheistic world religion whose name means “submission” to Allah (“God”), by the religion’s followers, who are known as Muslims, meaning “those who have submitted.” Islam has two principal textual sources for its teachings and practices. The scriptural book known as the Qur’an, which means “recitation,” is the most authoritative source for Muslims who believe it descended from Allah to the human being Muhammad, who through this process became a prophet who spread Allah’s divine message for His human creatures to follow and share. The second most authoritative sources are the reports of words and actions of Muhammad that were collected over time by the Prophet Muhammad’s early companions and the steadily growing community of Muslims after the Prophet’s passing. They were eventually compiled into a major collection known as the Sunna. This essay contains quotations on the subject from both the divine Qur’anic scripture and the deeply influential human words and deeds found in the Prophet Muhammad’s Sunna. The essay then proceeds to describe and explain in general how Muslims over many generations have practiced agriculture and cared for the natural environment, which is believed by them to be a commitment to stewardship, caring for God’s created world as His trusted agents.

The essay concludes by addressing a revolutionary scientific development for agriculture in today’s world, not only among Muslims but in the earth’s diverse human communities across the global landscape. This area of interest and importance is the increasing use of genetically modified organisms (GMOs) for the production of food.

Cross-References

- ▶ [Environmental Justice and Food](#)
- ▶ [Islam and Food](#)
- ▶ [Law and Regulatory Mechanisms for Food and Agriculture Research](#)
- ▶ [Water, Food, and Agriculture](#)

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Jainism and Food

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Introduction

One of the most remarkable sights in the Indian Subcontinent (a land of many marvels) is a lightly clad man or woman walking along the roadside sweeping the path ahead with a straw broom. The sweeper is a Jain monk or nun, and the reason for this action is to clear the path of any insects he or she might accidentally step on and kill.

So great is the Jains' reverence for all forms of life that monks will not kill insects that bite them, till the soil which may harbor small forms of life, or eat after sunset lest they accidentally ingest a bug. It goes without saying that the Jains do not eat meat. As one scholar wrote, "To say that Jains are strictly vegetarian hardly begins to convey either the rigour and severity of the rules which some Jains put themselves under or the centrality of such practices to Jain religious life" (Laidlaw 2003, p. 153).

The 2001 Indian Census reported 4.2 million Jains in India, 0.4 % of the total population. They are concentrated in Western and Southern India, especially the states of Maharashtra, Gujarat, Rajasthan, and Karnataka. There are also Jain communities in the United States (estimated at between 50,000 and 100,000), the United

Kingdom, and East Africa. However, their significance cannot be underestimated. Vegetarianism and the concept of ahimsa (noninjury), which are central to Hinduism, had their origins in Jain beliefs and practices, while Mahatma Gandhi, although born a Hindu, was greatly influenced by Jainism.

The Emergence of Movements Opposed to Vedic Sacrifice

Both Jainism and Buddhism appeared in the Gangetic Basin (a region extending from modern Pakistan to the state of Bihar) in the sixth century BCE. The movements represented a revolt against what is sometimes called the Vedic religion or Vedism (after the *Vedas*, a collection of prayers, magical incantations, hymns, and poems compiled orally around 1500 BCE). A feature of Vedic society was the development of a caste system, with the Brahmins (priests) at the top. They were all powerful, since only they knew the sacred rituals and could perform the animal sacrifices needed to propitiate the gods – forces of nature with parallels in Greek and Roman mythology.

Somewhat later alternative philosophical and metaphysical ideas were emerging in the forests. One was reincarnation, the idea that there is an endless cycle of births, deaths, and rebirths that is determined by our actions in this world. Under the law of karma, every action has its effects on the future; the sum of our past karma determines

our present existence and our future lives. The goal of existence is not worldly comforts or wealth but to realize this basic truth and attain release from the endless suffering of rebirths by asceticism, meditation, and yoga.

Mahavira Organizes His Followers

The most important figure in Jainism is Vardhaman (believed to have lived 599–527 BCE), whom his followers called Mahavira (great hero). Like Gautama Buddha, he was the son of the ruler of a small kingdom in northeast India. (There is no evidence that the two ever met.) The word Jain means a follower of *jina* (conqueror), *jina* being another name bestowed upon Mahavira because of his self-control. Vardhaman married and had children, but at the age of thirty left home to become a naked ascetic in search of enlightenment.

For 12 years, he wandered around northeast India experiencing many deprivations and hardships. In the thirteenth year, he attained enlightenment (*kevala*). To Jains, this does not mean union with the Absolute, as in Hinduism, or nothingness, as in Buddhism, but rather pure consciousness and absolute omniscience.

Mahavira was not the founder of a new religion, but is considered the last of 24 *jinas*, called *tirthankaras*, or ford-makers – omniscient teachers who attained enlightenment and then “made a ford”, showing others the path. Like Gautama Buddha, he appears to have been an excellent organizer who attracted disciples, converted many people, and founded monastic orders for both men and women. He organized his followers into a fourfold order consisting of *sadhus* (wandering male ascetics, sometimes called monks or renouncers), *sadhvis* (female ascetics/nuns), *shravaks* (laymen), and *shravikas* (laywomen). While all take the same four basic vows, the renouncers follow them much more strictly and take additional vows. It is they who embody the ultimate ideal of Jainism. They give up their homes, money, and possessions; wander around the countryside in single-sex groups; and depend entirely on laypeople for their food and shelter.

The Basic Beliefs of Jainism

Jainism is essentially an atheistic religion: The universe has existed from all eternity and its changes are due to the inherent powers of nature, not the intervention of a god. All knowledge is relative and temporary; absolute truth comes only to those enlightened people who appear at certain times in history, the *tirthankaras*. Although some Jain temples display their statues, they are not worshipped but are rather regarded as perfect beings to venerate and emulate.

A basic premise of Jainism is that life in the world is essentially bad and painful and that the evil done by humans leads to endless rebirths. The goal of human existence is to break this cycle and end the cycle of rebirths. This can only be accomplished when people can free ourselves from attachment and aversion and attain a state of perfect omniscience. What prevents them from doing this is karma, the effects of bad deeds and thoughts.

The Nature of Karma

Unlike Hindus or Buddhists, Jains view karma not as a spiritual or intangible element, but as a physical substance – a superfine matter that clings to our souls and conforms to mechanical laws of cause and effect. People attract karma particles when they do or say something wrong, such as telling a lie, stealing, or killing a living being. These bad actions cause souls to attract more karma, creating a vicious circle.

Jains believe that a person can avoid the accumulation of karma and remove karma that has already accumulated by behaving and thinking correctly and by having the correct mental state, so that even if an action attracts karma, it does not stick to the soul. This is done by following three ethical principles, called the Three Jewels – right faith, right perception, and right knowledge – and taking five great vows (*mahavratas*): *ahimsa*, non-violence or noninjury; *satya*, truthfulness; *asteya*, not stealing; *aparagriha*, non-acquisitiveness; and *brahmacharya*, chaste living. All five vows are observed by monks; laypeople only follow the first four.

Ahimsa or Noninjury: The Central Principle of Jainism

The heart of Jain ethics is *ahimsa*, a word sometimes translated nonviolence but more correctly as “not harming.” It is summed up in the statement “Do not injure, abuse, oppress, enslave, insult, torment, torture or kill any creature or living being.” Harm is not only physical but mental and verbal. Related to *ahimsa* is the notion of *daya*, a spirit of compassion towards all living beings.

Properties of Jivas

These concepts are rooted in Jains’ views of the universe, which is seen as consisting of both lifeless things and an infinite number of *jivas*, or living entities, sometimes translated as souls. *Jivas* are made of energy and do not have physical form until they are incorporated into a body. Embodied *jivas* are classified according to their number of senses:

- One sense (touch): clay, sand, rain, ice, fire, wind, trees, bacteria, yeast, flowers, vegetables
- Two senses (touch and taste) worms, leeches, termites
- Three senses (touch, taste, smell): ants, lice, beetles, moths
- Four senses (touch, taste, smell, sight): flies, bees, scorpions
- Five senses (touch, taste, smell, sight, hearing): infernal beings, animals, birds, human beings, and heavenly beings

A further distinction is made between vegetables with only one *jiva* and those that contain a multitude of living organisms, such as underground roots, bulbs, buds, and shoots as well as figs and fruits and vegetables with many seeds.

While in practice it is impossible to survive without killing or injuring some form of being, Jains strive to avoid doing any intentional harm. Thus, they are not supposed to be farmers, because tilling the soil would kill life; perform jobs involving fermentation, digging, and selling

weapons or pesticides; or trade in meat products, honey, eggs, silk, or leather.

Wandering monks wear masks to avoid breathing in small *jivas* and sweep the ground in front of them with a broom as they walk. During the monsoon season, they stay in indoors as much as possible, because the world is teeming with life at this time. A worshipper cannot enter a Jain temple wearing animal products. Renouncers are enjoined against traveling except on foot.

Jains establish animal sanctuaries and hospitals for cows, birds, and other animals. They free the birds when they recover, since they do not believe in confining them; for the same reason, contemporary Jains generally do not keep household pets.

Permitted and Banned Foods

Nowhere do Jain concerns about *ahimsa* manifest themselves more vigorously than with regard to food. While *all* observant Jains avoid certain foods that are absolutely forbidden, including meat, fish, and eggs, there are variations in what they otherwise eat, depending on family customs, sect, age, sex, time of year, personal circumstances, etc. In general, the old follow more restrictions than the young and women more than men; often people allow themselves greater latitude outside their homes. The practice of *ahimsa* and vegetarianism are on a continuum: As a Jain progresses on his or her spiritual journey, he limits the kind and number of foods he consumes.

From the eleventh century onward, Jain texts contain detailed lists of what can and cannot be eaten. Five things are absolutely forbidden for all Jains: meat (including meat products, such as gelatin), fish, eggs, alcohol, and honey. Eating meat is absolutely unthinkable; one renouncer is quoted as saying, “Meat-eaters have the shape of humans but they are not really human” (Laidlaw, p. 67). In India, many Jains will not frequent stores where meat, fish, or eggs are sold and will pay the owners of slaughter houses not to kill animals on certain holidays.

Alcohol is reviled because the process of fermentation and distillation multiplies and destroys living organisms and because it clouds one's thinking and can lead to violence. Honey is banned because it contains the bodily secretions of bees; if the bees are smoked out ahead of time, it destroys other insects that took their place.

In India, most Jain and Hindu vegetarians are not vegans, perhaps because the need for the nutrients in milk products was so important and because cows are (at least in theory) treated kindly. However, some North American Jains do avoid milk and dairy products because of the violence involved in producing milk by machines and the fact that cows are killed when they stop producing (Jain et al. 2005, p. 20).

Other food items are off-limits to renouncers at all times and to laypersons during certain fasts. These items include:

- Fruits and vegetables with many seeds, including figs, pomegranate, guava, and tomatoes
- "Empty fruits," that is, fruits with little nutritional value
- Vegetables that grow underground, including potatoes, turnips, squashes, carrots, radishes, and mushrooms
- Onions and garlic
- Fresh ginger and turmeric
- Foods containing yeast
- Nonvegetarian cheese
- Cauliflower and cabbage
- Buds and sprouts, including sprouted lentils
- Rotting and stale food

Fruits with many seeds are banned because each seed encloses the germ of life. Pulling up root vegetables kills millions of *jivas* in the soil, and the plants themselves contain an infinite number of *jivas* so that even a tiny part will grow if planted. Insects live within the leaves of cauliflowers and cabbages. Turmeric and ginger are not eaten fresh but may be eaten as dried powdered spices since in this form they cannot grow again.

Ayurvedic theories of medicine and folk beliefs reinforce these selections. Throughout India, onions and garlic are believed to inflame the passions and destroy mental equilibrium and thus are avoided by many orthodox Hindus.

The orthodox of any religion are suspicious of what is new and foreign, which may account for the ban on such New World products as tomatoes, potatoes, and guavas.

Traditionally, Jains avoid eating after sunset, since they may inadvertently destroy unseen live forms and drink only boiled and filtered water in order to minimize the consumption of minute water-borne organisms. Jain writings contain detailed rules about how long foods can be kept before eating. For example, milk must be filtered and boiled within 48 min of milking the cow; yogurt should not be more than one day unless it is mixed with raisins or other sweetening agents; flour is to be kept for only 3 days in the rainy season and 7 days in the winter; and sweets must be consumed within 24 h (Mahais 1985, p. 105). Although these rules may no longer be relevant because of modern refrigeration, they reflect a sophisticated knowledge of hygienic and health issues at an early date.

The Jain Diet

There is no Jain cuisine as such. Until recently, most Indian food was produced locally and was highly seasonal. Jain food is also largely regional. Its dietary staples are grains and legumes. In Western India, the traditional grains were millet and sorghum, in North India wheat, grounded into flour and made into unleavened breads. Grains may also be coarsely ground and boiled to produce *daliya*, a kind of porridge. In Eastern India, boiled rice is the standard staple.

Legumes are boiled and spiced to make the soupy dish called *dal*. Hing, or asafetida, is a common replacement for garlic. There is no restriction on the myriad of spices that are the distinctive feature of Indian cuisine and impart flavor and aroma to the simplest of vegetarian dishes. Tropical fruits such as mango, coconut, and green vegetables are part of Jains' daily fare. In Rajasthan, much of which is a barren desert, substitutes for vegetables in stews and curries are made from ground grain or lentils boiled and dried in the sun.

Because Jains are not vegans, dairy products are an important part of their diet that provide needed nutrients. They include yogurt, buttermilk, and ghee – clarified butter. In India, ghee was traditionally associated with opulence and good health and affluent Jains are known for the amount they use in their cooking. Indians in general love sweets, made of sugar, dairy products, nuts, and spices, and Jains are no exception, although they give them up during fasts.

Jains abroad adapt to local conditions. A young Jain professional reports he does his best to avoid harming life “to the extent possible and practicable.” He never consumes meat, fish, or eggs but will eat onions, garlic, and root vegetables. When dining with friends, he frequents Italian, Thai, and Japanese restaurants which serve vegetarian fare. He eats a lot of cheese, but does not insist on vegetarian cheese (i.e., cheese made without using whey, casein, rennet, or other animal products as coagulating agents). In Thai restaurants he requests that the vegetarian dishes be prepared without fish sauce. In Japanese restaurants, he eats vegetarian sushi.

Fasting

An important way of removing negative karma is by fasting, which Jains have elevated to an art form. (Jain fasting served as an inspiration for Mahatma Gandhi, who used it as a political tactic.) The Hindi word for fast, *tapas*, means “heat” in Sanskrit: A common metaphor is that just as the sun dries up a polluted lake, so fasting purifies the soul by removing negative karma. Fasts are considered essential for spiritual growth.

A fast is always preceded by a vow, which means that it is a religious act and done with a predefined intention. There are no hard and fast rules when or how long one should fast or what form this fasting should take, but it is never obligatory, always a matter of free will. It is not enough just to stop eating; one should also lose the desire to eat and not relish food when one does eat. Fasting is not done in isolation but with one’s family or as a community event.

Fasts are both an extension and intensification of Jains’ regular dietary restrictions. Jain texts classify fasts into many categories and lay down complex rules about what can and cannot be eaten. For example, fasting may mean giving up all food and water for 1 day, 3 days, or 8 days; every alternative day of the year; twice a year; etc. It can entail drinking only water or the water used to rinse out a pot. Fasters may eat only one meal a day at a set time; limit the number of items eaten; give up favorite foods, such as sweets (sometimes on a permanent basis); or eliminate salt or spices from their diet. A common form of fasting requires giving up green vegetables, milk, yogurt, oil, fruits, salt, spices, and sugar and eating only dal and rice.

Like some Hindus, Jains fast on certain days of the lunar cycle when the moon changes, especially the 8th and 14th day of each fortnight. They fast when the seasons change and during the monsoon, when fasting is thought to also offer protection against illness. Most Jains fast during festivals, especially *Paryushan Maha Pava* which lasts 8–10 days during the rainy season (usually in August–September). Some fast for the entire period, others for shorter times, but fasting on the final day is considered obligatory. In this case, fasting means complete abstinence from any sort of food or drink, but some people take boiled water during the daytime. During this festival people ask forgiveness of those they have offended, visit the temple, and celebrate with a community feast.

However, Jains may fast at any time, especially if they believe have committed a sin and need to repent. Women generally fast more than men and the old more than the young; after retirement, some people start to fast on a regular basis.

The ultimate fast, called *smadhi maran* or *sallekhna*, involves giving up all food and water and starving oneself to death. This practice is undertaken by someone who is in the final stages of a fatal illness or is very old and feels they have fulfilled their duties in this life. They must have permission from a senior renouncer, which is granted only if death is imminent. The practice has been challenged in the Indian courts.

Impact of Jainism

The basic concepts of Jainism were ultimately absorbed by the religion that came to be known as Hinduism, especially vegetarianism and the concept of ahimsa, which became the centerpiece of the teaching of Mahatma Gandhi. Although born a Hindu, Gandhi grew up in a community in Gujarat where there were many Jains and as a young man had a Jain spiritual adviser. He is quoted as saying:

No religion of the World has explained the principle of Ahimsa [nonviolence] so deeply and systematically as discussed, with its applicability in life, in Jainism. As and when this benevolent principle of Ahimsa will be sought for practice by the people of the world to achieve their ends of life in this world and beyond, Jainism is sure to have the uppermost status and Bhagwan [a term of respect] Mahavira is sure to be respected as the greatest authority on Ahimsa (Jain Centre 2002).

Summary

The only religion in the world that is unconditionally vegetarian is Jainism, which has around four million adherents, mainly in Western India. Jainism developed in India in the sixth century BCE; its leading figure, Mahavira, was a contemporary of the Buddha. Both religions opposed the increasing power of the Brahmins and animal sacrifice. The Hindu practice of vegetarianism may have originated with the Jains.

The cardinal principle of Jainism is *ahimsa*, translated as noninjury or nonviolence. Jains believe that every organism, from single cell amoebas to human beings, has an eternal soul, or *jiva*. Thus, any injury to any creature, however lowly, must be avoided. Jains are not allowed to follow farming as a profession because of the harm to creatures in the soil.

Jains not only do not eat meat, fish, or eggs, but they avoid a myriad of other foods, including any whose production kills the plant, harms microscopic organisms, or destroys the germs of future life. Thus, Jains avoid honey, fruits and

vegetables with little seeds (eggplant, figs), underground roots (potatoes, carrots, onions, etc.), and mushrooms. Milk and milk products are allowed but alcohol is forbidden. Jain monks and nuns follow every more stringent dietary restrictions, than lay persons. This essay will describe the history of Jainism and its main philosophical tenets, with a focus on its dietary restrictions and prescriptions.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Alcohol Abstinence and Sobriety](#)
- ▶ [Fasting](#)
- ▶ [Jainism and Food](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Vegetarianism](#)

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Jefferson's Moral Agrarianism

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Synonyms

Agrarianism; Liberal eudaimonism; Morality;
Progress

Introduction

Thomas Jefferson wore numerous hats: that of statesman, meteorologist, inventor, religionist, historian, architect, ethicist, philologist, humanitarian, paleontologist, botanist, and farmer, inter alia. In none of those disciplines could he claim expertise – he never did – but in none of those disciplines was he a mere dilettante. In that regard, he stood head and shoulders above all other US presidents and head and shoulders above all others of his day, except for a select few.

Among his numerous passions, Jefferson expressed especial affection for farming. Upon retirement from politics, he writes to John Adams, “I return to farming with an ardor which I scarcely knew in my youth, and which has got the better entirely of my love of study” (25 Apr. 1794). “If you visit me as a farmer,” he states to W. B. Giles 1 year later (27 Apr. 1795), “it must be as a co-disciple. . . . I am as much delighted and occupied with it, as if I was the greatest adept. I shall talk with you about it from morning till night, and put you on very short allowance as to political aliment.” Sixteen years later, he writes C. W. Peale (20 Aug. 1811) of being an “old man,” but a “young gardener.” “No occupation is so delightful to me as the culture of the earth, and no culture comparable to that of the garden,” he adds. “Such a variety of subjects, some one always coming to perfection, the failure of one thing

repaired by the success of another, and instead of one harvest a continued one through the year.”

“Liberal Eudaimonism”

Jefferson's passion for agrarianism is a consequence of his broad-scale ethical views – what may be dubbed his “liberal eudaimonism” and which comprises liberalism, eudaimonism, meritocracy, and progressivism.

Jefferson's liberalism comprises purchases of “freedom from” (negative liberty) and “freedom to” (positive liberty). Jefferson's conception of liberty is a code of restraint on sovereignty, exercised by a few or many – i.e., negative liberty. Freed from potential abuse through political intervention in their affairs, citizens are at liberty to manage their own affairs as they see fit to do so. Yet recognizing that liberty was no end in itself, Jefferson recognizes the need of some government intervention in citizens' affairs to promote human flourishing – i.e., freedom to. For instance, he proposed a constitutional amendment in 1806 to allow for improvements toward the general welfare – viz., the opening of roads, clearing of rivers, and building of canals.

“Eudaimonism,” drawn from Aristotle's and the Greek and Roman Stoics' view of *eudaimonia* (commonly translated as “happiness”), is the view that the best manner of living is to live well or to flourish. Jefferson is a eudaimonist of some persuasion. His addresses and correspondence – e.g., to John Adams, 28 Feb. 1796, and to Pierre Samuel Dupont de Nemours, 24 Apr. 1816 – especially show that he has a very definite notion of the good life, which critically involves virtuous activity through exercise of the moral sense as well as some stock of bodily and external goods. As is the case with the eudaimonism of Aristotle and the Greek and Roman Stoics, human happiness for Jefferson involves no separation of public and private dimensions.

Meritocracy, for Jefferson, involves four tiers of government – wards, counties, states, and the nation – in place so that everyone has some

participatory role in governing. Key, however, he writes to John Adams (28 Oct. 1813), is that the talented and morally superior – i.e., the natural aristocracy (*aristoi*) – will most likely be encouraged to govern at the higher levels. The way to ensure that the naturally best and not the artificially best rule is to leave the election of governors in the hands of the people, suitably educated. Jefferson even claims that having the best rule is the best test of a good government.

Jefferson's writings – e.g., to Joseph Priestley, 27 Jan. 1800; to Count de Moustier, 17 May 1788; to Elbridge Gerry, 26 Jan. 1799; and to William Green Munford, 18 June 1799 – also show that he consistently clung to the belief that humans as a whole were progressive beings. In keeping with the general trend of Enlightenment thinking, Jefferson believed that the human mind and the moral sense were massively underdeveloped and, thus, capable of substantial improvement. There were Bacon in philosophy; Boyle, Brahe, Galileo, Kepler, Rittenhouse, and Newton in science; Locke and Sidney in political theory apropos of human intelligence; and Kames, Priestley, Sterne, and Hutcheson in moral theory. Following the lead of such progressivists, Jefferson's republican ideals were directed toward maximizing intellectual, political, and especially moral improvement to promote human flourishing.

Agrarianism as Moral Nonesuch

Agrarianism had an especial place in Jefferson's notion of the good life. The life of a farmer, he thought, was suited ideally to promote large-scale human flourishing by enhancing independence of all citizens, allowing both for some measure of political participation through the leisure provided by scientific farming and for cultivating virtue through honest and valuable labor. "Corruption of morals in the mass of cultivators is a phenomenon of which no age nor nation has furnished an example," he writes in Query XIX of his *Notes on Virginia*. "It is the mark set on those, who, not looking up to heaven, to their own soil and industry, as does the husbandman, for their

subsistence, depend for it on casualties and caprice of customers." "The pursuits of agriculture . . . are the best preservative of morals," he writes to John Blair (13 Aug. 1787). "Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals and happiness," he tells George Washington (14 Aug. 1787).

Agrarianism for Jefferson is, thus, a moral ideal. He states famously in Query XIX of *Notes on Virginia*, "Those who labor the earth are the chosen people of God, if ever he had a chosen people, whose breasts he has made his peculiar deposit for substantial and genuine virtue." He iterates that sentiment in Query XXII, where he says no age of history has ever recorded corruption in the "mass of cultivators." To James Madison (20 Dec. 1788), he writes, "I think our government will remain virtuous for many centuries; as long as they [*sic*] are chiefly agricultural; and this will be as long as there shall be vacant lands in any part of America. When they get piled upon one another in large cities, as in Europe, they will become corrupt as in Europe." To Jean-Nicolas D  meunier (29 Apr. 1795), Jefferson writes that husbandry yields "the most happiness & contentment to one of . . . philosophic turn."

Query XIX of his *Notes on Virginia* gives Jefferson's fullest expatiation of agrarianism as a moral ideal. In Europe, people are forced into manufacture, as the surplus of people and want of land make agriculture difficult. The costs on human happiness are great. In America, there is a surplus of land and a want of people to improve it. Americans, as farmers, are self-sufficient and dedicated to their land, state, and country.

Farmers, not manufacturers, are self-sufficient, for manufacturers are dependent on the "casualties and caprice of customers" and dependence leads to subservience, venality, ambition, and suffocates virtue. Americans lack many of the goods of Europe, he concedes, but they are better for that, as such "goods," mere bagatelles, lead to loss of independence and unhappiness. "Generally speaking," he writes, "the proportion which the aggregate of the other classes of citizens bears in any state to that of its

husbandmen, is the proportion of its unsound to its healthy parts, and is a good-enough barometer whereby to measure its degree of corruption."

The consistent message in *Notes on Virginia* – that agrarianism is the most virtuous life – is spelled out in several letters. Jefferson writes to Caspar Wistar (21 June 1807), "I am not a friend to placing growing men in populous cities, because they acquire there habits & partialities which do not contribute to the happiness of their after life." Elsewhere (e.g., to John Jay, 23 Aug. 1785; to James Madison, 20 Dec. 1787; to Jean-Nicolas D meunier, 29 Apr. 1795; and to Jean-Baptiste Say, 1 Feb. 1804), he says much the same.

The tone in all such letters is that agrarianism is a moral, not economic ideal. Jefferson's commitment to agriculturalism was a commitment to freedom, virtue, and equality, not a commitment to an economic system. He writes to Thomas Cooper (10 Sept. 1814), "And with the laborers of England generally, does not the moral coercion of want subject their will as despotically to that of their employer, as the physical constraint does the soldier, the seaman or the slave?" To Thomas Diggs (19 June 1788), Jefferson says that a manufacturer, transplanted from Europe, would be irresistibly tempted by the independence and well-being of the American farmer and would choose an agrarian lifestyle to his prior life of manufacture. That, of course, is not to say that Jefferson did not have some economic and political motives behind his agrarianism. As Query XIX shows, he did. It is merely to emphasize that Jefferson's agrarianism was chiefly moral and that the arguments on behalf of agrarianism as a way of life were principally evaluative and only secondarily economic or political.

Agrarianism as a Universal Standard

Jefferson appeals to nature to ground moral agrarianism. Agrarianism was for him a moral ideal, because it was closest to nature and nature for Jefferson had a normative slant as it did for his beloved ancients (e.g., the Stoics). By nature, husbandry is cornucopian, while manufacture is

fruitless. To Benjamin Austin (9 Jan. 1816), he writes, "Agriculture is productive, manufacturing is sterile, and it is nature that makes this so." He adds, "To the labor of the husbandman, a vast addition is made by the spontaneous energies of the earth on which it is employed: for one grain of wheat committed to the earth, she renders twenty, thirty, and even fifty fold, whereas to the labor of the manufacturer nothing is added." The implicit conclusion is that persons ought not to waste time and effort in activities that are by nature sterile.

It might be supposed that Jefferson's moral agrarianism was a normative ideal applicable to Americans, only because they have surfeit of land and the land is underpopulated, but not to non-Americans (e.g., the British or French), because they have want of land and the land is overpopulated. If so, then moral agrarianism is to be taken as a relative or parochial ideal, applicable to Americans and others, situated similarly. For countries with large populations and little land, a different standard of happiness is applicable. That I shall show is not the case. Jefferson was consistently clear that agrarianism was a standard uniquely idoneous to human nature. For the most part, only people that worked the land could be virtuous and happy.

Jefferson is clear that the life of manufacture that predominates in parts of Europe comes at the expense of human happiness (letter to James Madison, 20 Dec. 1787). He writes John Jay (23 Aug. 1785): "I consider the class of artificers as the panders of vice & the instruments by which the liberties of a country are generally overturned." He adds: "Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, & they are tied to their country & wedded to it's [*sic*] liberty & interests by the most lasting bonds." When there is no longer arable land for farming, those citizens unable to farms should become mariners before manufacturers. His judgments in such letters are not circumstance-dependent, but absolute.

Jefferson's letter to Jay shows agrarianism ties one to the land and that suggests a sort of bondage, not independence. For Jefferson, there can

be no notion of independence without some form of yoke. The only liberty worth having is that of a farmer, who is tied to his land and thus to his state and who has work that frees him from the drudgery of manufacture. Manufacturers, following self-interest alone, are yoked to the caprice of consumers. Farmers, following a more patriotic course, are yoked to self-interest as well as the interests of their state.

For Jefferson, husbandmen have a link to the land that manufacturers, tradesmen, and merchants do not. In times of economic distress or war, the latter can liquidate their assets and abandon the state; husbandmen can do no such thing. Husbandmen have an investment in the land and, thus, an investment in their state that others do not have. That investment is not just political; husbandry is character enriching. It is a universally applicable moral ideal.

The Scientific Farmer

Jefferson's *Literary Commonplace Book* (§788) – a compilation of notes taken by Jefferson in his early years that is 123 pages in length and comprises sections on prose, poetry, and dramatic verse – provides additional confirmation. Here Jefferson jots down three ideas from Montesquieu's *The Spirit of the Laws*: “The cultivation of the earth is the greatest work of man. The more climate brings man to flee work, the more religion and the laws ought to excite them to it. ch. 6. [sic] In order to conquer the laziness of climate, it would be necessary that they look to avoid all ways of life without work. ch. 17 [sic]” (Jefferson 1989).

In short, agrarianism ties men to their land and country as well as their country's liberties and interests. It is a Ciceronian moral ideal – one in which what is morally beneficial and what is politically beneficial are not dissociable.

There are also Jefferson's observations of the French and British.

In France, conjugal love or domestic happiness does not exist. The French “nourish and invigorate all [their] bad passions.” That affords them “moments of ecstasy,” he writes to Charles

Bellini (30 Sept. 1785), at the price of “days and months of restlessness and torment.” To Anne Willing Bingham (7 Feb. 1787), he adds that every person is preoccupied with finding pleasure in the present. Consequently, they are consumed with an ennui, unknown to Americans. “In America, on the other hand, the society of your husband, the fond cares for the children, the arrangements of the house, the improvements of the grounds, fill every moment with a healthy and an useful activity,” he writes. “Every exertion is encouraging, because to present amusement, it joins the promise of some future good. The intervals of leisure are filled by the society of real friends, whose affections are not thinned to cob-web, by being spread over a thousand objects.”

In England, he writes John Bannister (15 Oct. 1785), things are less deplorable, but also depraved. Britain is a manufacturing society; English education amounts to drinking, horse racing, and boxing. As a manufacturing society, however, they produce splendid goods, yet their splendor is at bottom extravagance, evidence of depravity, and dissipation. “The mechanical arts in London are carried to a wonderful perfection,” he writes to boyhood friend John Page (4 May 1786). “But of these I need not speak, because of them my countrymen have unfortunately too many samples before their eyes. I consider the extravagance which has seized them as a more baneful evil than toryism was during the war.”

Jefferson's moral agrarianism – a picture of the good life for all humans everywhere – must not be apprehended as a backward-looking, filio-pietistic pastoralism in the manner of Hesiod in *Works and Days* or Virgil in *Georgics*. Instead moral agrarianism is a bucolic ideal that is, in the spirit of the progressivist element of his liberal eudaimonism, quintessentially scientific, progressive, and forward looking. Thus, agrarianism for Jefferson, in keeping with the progressivism of the Enlightenment, is a melioristic ideal that preaches the self-sufficiency and autonomy of an agrarian lifestyle, while it advocates science and technology sufficient to make that lifestyle efficient enough both for domestic leisure and for

some measure of local political participation – each an essential component of successful republicanism (Holowchak 2011).

The Problem of Manufacture

Jefferson was not oblivious to the growth of manufacture in the newly formed United States in his lifetime. In a letter to George Washington (15 Mar. 1784), Jefferson acknowledges the influence of commerce and its manufacture. “All the world is becoming commercial. Was [*sic*] it practicable to keep ourselves separated from them we might indulge ourselves in speculating whether commerce contributes to the happiness of mankind.” He writes to David Humphreys (23 June 1791) that he endorses America’s gradual move toward manufacture. A letter to Jean-Baptiste Say (1 Feb. 1804) 13 years later states, “the best distribution of labor is supposed to be that which places the manufacturing hands alongside the agricultural; so that the one part shall feed both, and the other part furnish both with clothes and other comforts.” To Thomas Leiper (21 Jan. 1809), he acknowledges that political autonomy depends on manufacture as well as agriculture. To Governor James Jay months later (7 Apr. 1809), he says that “equilibrium of agriculture, manufactures, and commerce” is needed for American independence. To Benjamin Austin (9 Jan. 1816), he writes that some amount of manufacture is needed to secure independence: “[Whoever] is against domestic manufacture must be for reducing us either to dependence on that foreign nation or to be clothed in skins, and to live, like wild beasts, in dens. . . . I am not one of these; experience has taught me that manufacturers are now as necessary to our independence as to our comfort.”

Such passages might seem to suggest some amount of whiffle waffling on moral agrarianism or perhaps, at some point, a change of mind. It is clear Jefferson saw the rise of manufacture in America occurring before his own eyes. It is also clear he recognized in time that political independence required both manufacture and agriculture.

Jefferson’s praise of the virtues of farmers never excluded manufacture. Early letters show that. His letter to Jay (23 Aug. 1785) – in which he calls farmers the “most valuable,” “most vigorous,” “most independent,” and “most virtuous” citizens – merely bids citizens to pursue an agrarian lifestyle, so long as there is arable land, in preference to other occupations. “I think our government will remain virtuous for many centuries,” he writes Madison (20 Dec. 1787), “as long as they are chiefly agricultural; and this will be as long as there shall be vacant lands in any part of America.” If there was any change of mind for Jefferson, it concerned the extent to which the agrarian ideal could be instantiated.

Awareness of the need of manufacture and need of commercial exchange for political independence do not show that Jefferson ever abandoned agrarianism as a moral ideal. They show merely that Jefferson was committed only to some amount of manufacture and commercial exchange, sufficient to secure independence, not so much to unseat agriculture as an ethical ideal.

Summary

Thomas Jefferson had an Arcadian vision for his fledgling country. That vision comprised simple, idyllic, and campestrial living. Farms would stretch out from coast to coast and Americans would engage in only that amount of manufacture to keep them independent of the political bickering of European nations.

Close scrutiny of his writings shows that the motivation for Jefferson’s political and economic agrarian alternative to European living is a moral vision of human flourishing that aims to be a universal standard for humans. Agrarianism for Jefferson is a moral ideal.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Ecotopia](#)
- ▶ [Geographical Indications, Food, and Culture](#)
- ▶ [Virtue theory, Food, and Agriculture](#)

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Judaism and Food

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Synonyms

Halakhah; Kashrut; Kosher; Ritual; *Sheḥiṭah*; Slaughter; Torah

Introduction

Many of the laws and commandments that lie at the root of Judaism set out rules for how the community of Israel is required to relate to the production, distribution, and consumption of food. The commandments of the Torah (the five books of Moses that stand at the core of the Jewish scriptures) are defined and supplemented by an elaborate oral tradition embodied in the Talmuds and other works by the rabbis over the ages. The present entry deals primarily with the Jewish dietary laws (“kosher” food) with

special reference to the diverse interplay between ritual aspects (aimed at instilling holiness in the lives of Jews) and ethical issues that arise in the production of food, notably matters involving the humane treatment of animals. The advent of modernity has given rise to an intensifying of ethical questions sparked by the industrial mass production of food (especially of meat) and by increased sensitivity to ethical concerns.

Relevant Ethical Principles

In Rabbinic Judaism, ethical questions are often framed in terms of law, though the relationship between law and ethics is not always easy to define. In particular, there exists a flexibly defined realm of “within the line of the law” (analogous to the English “beyond the letter of the law”) which comprises moral behavior that is not enforceable by the judiciary and yet is regarded as part of the structure of religious law.

The Prohibition Against Causing Suffering to Animals

Jewish religious law – “*halakhah*” – forbids the inflicting of unnecessary suffering on animals [*ša‘ar ba‘alei ḥayyim*]. Most authorities understand that this is implicit in Exodus 23:5 which commands to ease the burden of an animal even if it belongs to a personal enemy. Differing views have been expressed as to when the suffering should be classified as “unnecessary”; some of these views, as they relate to agricultural activities and food preparation, will be discussed below. The imperative of humane treatment of animals became an important issue, for example, in modern Israeli farming when dealing with the talmudic prohibition of milking cows on the Sabbath. Concern for the pain that would otherwise be caused to the cows motivated rabbis to devise permissible ways of milking, whether by means of ingenious legal constructions or with the help of technological solutions (automatically timed milking machines) (Steinberg 1979; Schwartz 1997).

The Prohibition Against Destroying Food

Deuteronomy 20:19 states “When thou shalt besiege a city a long time, in making war against it to take it, thou shalt not destroy the trees thereof by wielding an axe against them; for thou mayest eat of them, and thou shalt not cut them down; for is the tree of the field human, that it should be besieged of thee?” Talmudic law understood this as an interdiction against wanton destruction of any fruit-bearing trees. Protection was extended to the fruit itself, and the law forbids any other kind of wasteful spoiling by direct or indirect means, such as hunting for sport or diversion of water sources. This principle has come to serve as a central foundation for recent attempts to incorporate ecological and environmental criteria into religious law, including the dietary regulations (see below) (Zevin 1969). Earlier treatments of the topic were often limited by their acceptance of the doctrine ascribed to Aristotle that divine providence prevents the extinction of entire species (e.g., Maimonides, *Guide* 3:17).

Torah and Vegetarianism

The biblical narrative depicts the earliest stage of humanity as essentially vegetarian. The first man and woman were instructed to eat only from the fruits of the trees in the garden of Eden, and it was only after the flood in the days of Noah (Genesis 9:3) that God told the survivors “Every moving thing that lives shall be food for you, and as I gave you the green plants, I give you everything.” While this suggests that ► [vegetarianism](#) is an ideal state reflective of humanity’s original vocation, biblical law and practice make it amply clear that the slaughter of animals and consumption of meat are not merely a concession to human weakness, but a central requirement of sacrificial worship and other aspects of Israel’s religious life. At any rate, notwithstanding the diversity that usually characterizes Jewish theology and exegesis, no one has challenged the basic premise that humans occupy a higher plane of the spiritual hierarchy than other living creatures.

The Jerusalem and Babylonian Talmuds (j.*Kilaim* 9:4 [32b]; b.*Bava Meṣia*’ 85a) tell

a remarkable legend about Rabbi Judah the Patriarch being approached by a young calf that was pleading to be saved from the slaughterer’s knife, but Rabbi Judah dismissed him saying “This was what you were created for.” As punishment for his indifference, Rabbi Judah was subjected to a severe and prolonged toothache that did not cease until he redeemed himself by showing compassion to a nest of rodents. There is no suggestion that the author of this story was calling for avoidance of meat on ethical grounds – but nevertheless, feelings of compassion toward animals are nonetheless to be expected from decent and pious people, in emulation of the divine quality expressed in Psalms 145:9: “The Lord is good to all, and his tender mercies are over all his works.” Even an influential thinker such as Rabbi Abraham Isaac Kook (1865–1935) who promoted the ideal of vegetarianism as part of his eschatological vision (and is often described incorrectly as being himself a vegetarian), was opposed to its practice as long as the world remains unredeemed (Rosenak 2007, pp. 358–364).

Distribution of Produce

The Torah and much of talmudic literature were composed against a background of peasant life. The Israelites to whom they were addressed lived off the land for the most part, sustaining themselves through farming or husbandry. Biblical law contains elaborate instructions for setting aside certain portions of produce that must be distributed to various recipients, such as the poor, or (what sometimes amounted to the same thing) the Levites and priests who possessed no land of their own and would therefore rely on those portions for their subsistence and to enable them to pursue their spiritual tasks. A “poor tithe” was to be paid on the third and sixth year of every seven-year cycle. Similarly, during the harvests of the respective crops, the Torah designated portions of the produce that must be left for the poor. These include the “border of the field,” the forgotten sheaves and olives, and the gleanings of the vineyard (Leviticus 19:9–10; 23:22; Deuteronomy 24:19–20). All of these practices

were defined with precision in rabbinic law, especially in the tractates *Pe'ah* of the Mishnah and Jerusalem Talmud which include descriptions of sophisticated municipal social welfare structures for the collection and distribution of food for the local and indigent poor. The Torah regards these portions as belonging to the poor by moral and legal right and not subject to the vagaries of the donors' generosity.

Underlying the scriptural institutions of sabbatical and jubilee years (see Exodus 23:10–11; Leviticus 25; Deuteronomy 15:1–10) was an ambitious agenda that combined theological, social, and environmental dimensions. Whereas the command to leave the fields fallow every seventh year might serve a pragmatic purpose in restoring nutrients to the soil, the Torah also incorporates that command into far-reaching social legislation such as leaving produce for the poor and beasts of the field, cancellation of debts, emancipation of slaves, the restoration of ancestral properties to their original owners (who had likely sold them out of economic duress), and other measures that convey the profound ideal that “the land is mine [God’s], for ye are strangers and sojourners with me” (Leviticus 25:23). Evidence indicates that sabbatical years (at least, their agricultural aspects) were observed quite rigorously in Second Temple and talmudic times; though in modern times, the dominant tendency among religiously observant Jews has been to circumvent the more burdensome prohibitions by means of legal fictions or by relying on imported produce (the restrictions are understood to apply only in the land of Israel).

Seeking Reasons for Dietary Laws

A characteristic feature of biblical writing is its tendency to refrain from supplying explicit reasons for the commandments. In many cases, the reasons may be self-evident, while in some instances (particularly in ritual and cultic matters), religious virtue may well lie in the simple readiness to obey a divine commandment *qua* commandment, without seeking a more specific rationale. There are cases in which the tradition is

altogether ambivalent about whether a given law was commanded as an ethical precept or as a sacramental or disciplinary ritual.

This ambivalence is very evident in some of the dietary laws, which include several components that lend themselves to ethical interpretations, though those interpretations are not spelled out explicitly in the official texts and are not necessarily authoritative. Indeed, rabbinic discourse often prefers to deal with the mechanics of religious laws independently of their theological or moral foundations. Although the ethical and the theological aspects are both essential components of Torah law, the conceptual terminology of rabbinic discourse distinguishes between the social and the ritual realms – those commandments that involve the relationship “between a person and one’s neighbor” as distinct from those that are “between a person and the Almighty” (*bein adam leḥavero*, *bein adam lammaḳom*).

For example, Leviticus 11 and Deuteronomy 14 set guidelines for distinguishing between permissible and forbidden species of land animals, birds, aquatic creatures, and insects. The rules are justified in terms of purity and holiness, not morals or ethics. Edible quadrupeds are identified only by physical criteria: they must chew their cuds and have cloven hooves. However, some commentators, such as Don Isaac Abravanel (1437–1508) noted that all the animal species that are permitted under that definition are peaceful herbivores; they do not possess the sharp teeth or claws that would equip them to be predators. The forbidden birds enumerated by the Torah are also predatory by nature, and to some extent, the same principle can be extended to sea creatures as well.

This kind of exegetical ambivalence pertains to some other scriptural dietary laws that are more likely to be rooted in ethical concerns, such as not seething a kid in its mother’s milk (Exodus 34:26; 23:19; Deuteronomy 14:21), which rabbinic law expanded into the complete separation of dairy and meat. The same ethical interpretation might apply to the precepts “a cow or a ewe, you shall not kill both her and her young in one day” (Leviticus 22:28) and “if a bird’s nest

chance to be before thee in the way in any tree, or on the ground, whether they be young ones, or eggs, and the dam sitting upon the young, or upon the eggs, thou shalt not take the dam with the young: but thou shalt in any wise let the dam go, and take the young to thee” (Deuteronomy 22:6–7). All these precepts can be interpreted as intended to avoid acts of real or symbolic cruelty in recognition of the maternal instincts common to all living creatures (thus Rashbam, S. D. Luzzatto, and others); however, several Jewish commentators (including Nahmanides, Bahya, and others) explained the latter two precepts on ecological grounds, as being motivated by pragmatic concerns for possible depletion of the fowl supply. As regards the “bird’s nest” precept, the issue was especially confused by a passage in the Mishnah (*Berakhot* 5:3, *Megillah* 4:9) that forbids the liturgical formula “your mercies extend unto a bird’s nest” (a formula that has in fact survived in a Palestinian Aramaic *Targum*). An authoritative opinion in the Talmud (b.*Berakhot* 33b; b.*Megillah* 25a) explains the reason for this liturgical prohibition as “because one is thereby treating the qualities of the Holy One as if they were based on mercy, whereas they are really absolute decrees.” The severe difficulty that this text placed in the way of Jewish ethical thinkers is particularly apparent in the writings of the great codifier and philosopher Moses Maimonides (1135–1204). In his earlier works (his Arabic commentary to the Mishnah and his Mishneh Torah code of Jewish law), he copied the talmudic ruling, adding that “if the precept were really motivated by compassion, then God would have altogether forbidden slaughter.” However, in his more mature philosophical treatise, the *Guide of the Perplexed*, he dismissed that approach as reflecting nothing more than a marginal minority opinion among the talmudic sages, whereas a proper understanding of the Torah does indeed require that all its commandments be placed on a rational or ethical basis (Segal 1991).

The Torah prohibits hybridization of mixed species of fauna and flora, or even ploughing with mixed species or wearing fabrics of mixed wool and linen. Some commentators, such as

Rabbi S. R. Hirsch [*Horeb* Ch. 57] ascribe this to a fundamental obligation to “respect the Divine order in God’s creation” in the sense that “You should not interfere with the natural order which you find fixed by God in His world for its ultimate good” (Hirsch 1962, pp. 282–289). If applied consistently, this approach could lead to a complete rejection of genetic modifications of food, though that has generally not been the policy followed by Jewish law. The ban on mixed fabrics has in fact been classified as a “*hok*,” a humanly incomprehensible ritual precept; whereas that on ploughing with an ox and an ass is usually explained as motivated by concern for the animals’ discomfort when they work together at different paces.

Medieval Jewish rationalists like Bahya Ibn Pakuda and Maimonides insisted that the specific commandments and laws must be understood within a broader spiritual context and that observant Jews should never lose sight of their higher religious purposes. However, their worldviews were usually directed toward a goal of intellectual perfection, and they regarded ethical and moral improvements as means toward that end rather than as ultimate objectives in their own right. Followers of the Lithuanian “Mussar” (moral discipline) movement led by Rabbi Israel Lipkind Salanter (1810–1883) stressed the primacy of ethical concerns.

The required method of killing animals for both sacrificial and private use, known in Hebrew as *shehitah*, was not set out explicitly in the Torah, but was defined in very precise terms in the rabbinic oral tradition. It involved the slashing of the animal’s trachea and esophagus with a very sharp and smooth knife in a single movement. The rabbis supervised the slaughterers very carefully to make sure that there were no nicks in the knife and that the act itself was performed without pauses or inconsistent pressure that could cause pain to the animal. Violators would have their meat declared ritually forbidden for consumption, and the butchers might be disqualified from practicing their profession (Berman 1941, pp. 83–134). It was Maimonides who made the most influential case advocating an ethical or humane rationale for the Jewish procedures of

slaughtering animals and fowl for food. In the *Guide* 3:26, in the context of his general argument for the rational basis of the Torah's laws, Maimonides confronted a problematic passage from the Talmud in which a rabbi stated that it makes no difference to God exactly how an animal is put to death and that the required procedure for slaughter was instituted only to "refine" people and test their obedience. Against this position, Maimonides argued that the Jewish procedure for slaughter embodies the optimal method for achieving a number of desirable ethical objectives. Given that the consumption of meat is essential to the physical well-being of human beings (on this point Maimonides invoked his considerable credentials as a physician), it follows that animals must be killed for food. The sacred law therefore provided a set of rules that would ensure an easy, painless death for the victim. While there might be other ways of achieving this objective, *sheḥitah* has the advantage of being comparatively easy to perform without the need for expensive specialized instruments. It thus provides a reasonable balance between considerations of humaneness and of practicality. If Jewish law had insisted on more elaborate or costly methods, it is unlikely that they would have been widely observed, and this would have defeated their original purpose (Berman 1941, pp. 432–433).

Medieval rabbinic documents indicate a number of ethical issues that were encountered frequently in connection with the slaughter and sale of meat. For the most part, the issues that arose involved fraud (passing off non-kosher meat as kosher) or the general ethical and moral standards that should be demanded of a butcher, such as whether they could be allowed to follow their trade after being found guilty of a sin or crime. The primary impact of such questions was on the trustworthiness of the butcher's declaration that his meat was kosher. The humane treatment of the animals, albeit a value well established in traditional Jewish ethics (see above), was not considered a central issue in the observance of the dietary rules. The spread of Kabbalah, especially since the sixteenth century, tended to emphasize symbolic and theurgic

interpretations of the commandments rather than their social or ethical dimensions. Nevertheless, the kabbalistic doctrine of reincarnation (*gilgul*) promoted the belief, especially in the eastern European Hasidic movement, that proper slaughter might be necessary to allow the errant soul that was reincarnated into the animal's body to be elevated to a higher state of being in its next life (Shmeruk 1965).

Modern Developments

In modern times, Jewish religious authorities began to take a more serious interest in the humane treatment of animals used for food. This was often in response to government initiatives to introduce regulations in that area, beginning in Switzerland in the 1860s, and notwithstanding the fact that such initiatives were frequently motivated by anti-Jewish or anti-semitic agendas (animal rights enactments were among the earliest legislation to be introduced by the German Nazi party). Jewish law also had to confront new realities created by the industrialization of meat processing, as the economic desire for massive output promoted practices that cause severe discomfort and pain to the animals, such as "hoisting and shackling," force-feeding and restrictive confinement of calves or geese to produce veal or *pâté de foie gras*. For example, Canada's "Humane Slaughter of Food Animals Act" of 1959 impelled the local rabbis to investigate humane alternatives to hoisting and shackling, and this led to early adoption of pneumatic restraining mechanisms that were far less traumatic to the animals, but could nonetheless be run at an economically acceptable pace (Klein 1979, p. 93).

As the locus of food processing and distribution shifted away from individual homes and villages and was delegated to impersonal corporations, consumers were increasingly unaware of inadequacies in the standards of humane treatment of the animals. Furthermore, the Jewish insistence on performing the slaughter while the animals are conscious conflicted at times with secular standards that preferred that they be

stunned first. The traditional Jewish position has usually been that the procedures for stunning, which might involve a blow to the head or electric shock, cause greater pain than the instantaneous slashing of vital organs required by Jewish law; at any rate, the injuries that are inflicted on the skulls and brains during the stunning can render the animals ritually forbidden. In some cases, attempts were sought to devise halakhically acceptable alternatives for rendering the animals unconscious before the slaughtering.

An instructive example of ethical rethinking in Jewish law is the question of veal. The twentieth century's foremost Orthodox authority on Jewish religious law, Rabbi Moses Feinstein (1895–1986) devoted a responsum to the subject (*Iggerot Moshe E.H.* #92) in which he concluded that the standard methods for producing veal are objectionable for a number of reasons. For one thing, as a consequence of the unnatural conditions in which the calves are bred, the great majority of them are too weak and damaged, especially in their lungs and intestines, to satisfy the health requirements for kosher meat. Ultimately, Rabbi Feinstein declared that the Jewish ethical principle of humane treatment of animals – *ša'ar ba'alei ḥayyim* – will not tolerate the practice. Even after conceding that legitimate human needs, such as the elimination of hunger or disease or harnessing them for labor, may sometimes override concern for the animals' comfort, the cruelty associated with raising veal calves for financial profit can hardly be classified as a real "need." In the present instance, where the calves are fed nutritionally inappropriate foods in order to whiten the red meat and (as Rabbi Feinstein understood it) to create a misleading impression that it is more healthy, the process is essentially fraudulent and ought to be forbidden for that reason alone. While Rabbi Feinstein's responsum confined itself to very specific issues and did not distinguish clearly between the raising of veal calves and the post facto permissibility of veal, other rabbinic authorities (including those from more liberal Jewish streams such as the Conservative Judaism's Committee on Law and Standards) have extended his principles to warrant the

disqualification of other meats whose methods of production cause undue suffering to the animals (Bleich 2007; Golinkin 1993).

The Impact of Postville

An important milestone in the relationship between Jewish dietary laws and ethics occurred in 2004–2008 with the public disclosure that the Agriprocessors abattoir in Postville, Iowa, the largest kosher meat-packaging plant in America, was guilty of numerous infractions involving mistreatment of the animals, environmental violations, and abusing their workers many of whom were illegal immigrants or children. Jewish religious authorities who might otherwise have maintained a theoretical aloofness from the ethical aspects of kosher food production and marketing were now placed under strong pressure to respond to the moral challenges implicit in the scandal. Previously, avowals of the ethical imperative in food production had been made only by individuals and small groups such as the Jewish Renewal movement (which was advocating the inclusion of ecological criteria for kosher certification in the 1970s), but had minimal impact on the institutional mainstream, especially among the Orthodox communities who were most consistently involved in the observance and enforcement of kosher standards (Waskow 1995; Zamore 2011). Apart from condemnations of the immoral and illegal practices, which were of course shared by Jewish leaders and organizations across the theological spectrum in North America and in Israel, there has been a call for more consistent institutional policing of ethical standards as dictated by Jewish religious law. Some groups announced plans to issue certificates to any kind of business that satisfied ethical standards for the treatment of their employees (as mandated by Leviticus 19:13, Deuteronomy 24:14, etc. and in the Talmud *Bava Mešia'* Chapters 6–7, etc.); however, most such programs focused more narrowly on food-related enterprises, taking their cue from the extensive network of agencies that were already in place to certify compliance with the ritual dietary laws.

Heretofore, rabbinic bodies usually maintained the traditional distinction between the human-divine and the interpersonal realms, so that a declaration that an item is “kosher” related to such criteria as the ingredients and the vessels in which the food was prepared. Consideration of more indirect factors, such as Sabbath violations or sabbatical year restrictions, has sometimes proven controversial, but has generally been accepted as a legitimate criterion. Now the question is accordingly being posed as to whether kosher certification can also include assurances that labor conditions, humane treatment of animals, honesty, organic standards, and ecological sustainability conform to acceptable halakhic requirements. The type of investigation that is necessary to ascertain compliance in those categories would be much more difficult to monitor and verify than the already complex inspections that are conducted in order to establish the animals’ physiological soundness, the chemical and biological components of the food, etc. (Fishkoff 2010). The research would likely need to be expanded to include financial audits, labor contracts or union policies, information about disposal of waste products, energy consumption, and much more. Such specialized investigations might prove financially prohibitive, and perhaps the most that can be expected is some sort of conditional certification that would be removed in the event of a proven violation.

The flurry of noble intentions and projects that were announced in the immediate wake of the Postville disclosures have been quite slow to translate into concrete actions, but it appears that there can be no turning back at this stage and that Judaism stands at a momentous turning point in its confrontations with the ethics of food.

Summary

The authoritative sources of Jewish religious tradition contain extensive guidelines for the production and distribution of food within a nonvegetarian ethic. Although there are a number of ethical principles that are implicitly bound with the preparation of food – such as the requirement to set aside portions of the produce

for the needy and the prohibitions against causing suffering to animals and against wastefulness – the classification of food as “kosher” has been perceived overwhelmingly as a matter of ritual practice intended to promote discipline and spiritual holiness. Nevertheless, individual Jewish commentators pointed out ethical themes in the dietary laws, such as the implicit exclusion of predatory species, and the fact that the prescribed method of slaughter brings about instantaneous and painless death. Until recently, there were relatively few instances in which rabbis were called upon to invoke ethical factors in connection with food production, such as the problem of milking cows on the Sabbath or the raising of veal calves under conditions of unnatural confinement and unhealthy diet. The scandal of the Agriprocessors kosher abattoir in 2004–2008, with its numerous abuses of animals, workers, and the environment, is leading to a renewed awareness of the ethical factors involved in meat production and how these might be incorporated into the definitions of kosher food.

Cross-References

- [Food Rituals](#)
- [Food Preparation, Cooking, and Ritual in Judaism](#)
- [Hazon](#)
- [Industrial Food Animal Production Ethics](#)
- [Industrialized Slaughter and Animal Welfare](#)
- [Judaism and Food](#)
- [Meat: Ethical Considerations](#)
- [Vegetarianism](#)

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Kristeva and Food

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Synonyms

Abject and food; Abjection and food; Animality; Consumption; Monstrous; Psychoanalysis and food; Revulsion and food

Introduction

In *Powers of Horror*, Julia Kristeva discusses food prohibitions in the context of developing a general theory of abjection. There, she defines the abject as what defies categorization and thereby inspires both horror and fascination. As she describes it, abjection is an essential part of psychic development and necessary for weaning a child from its dependence on its mother's body. She also argues that abjection is part of the process of becoming a human being. If on the level of the individual abjection is necessary for separating from the maternal body, on the level of the social, abjection is necessary for separating from the animal. Both of these separations involve eating and prohibitions against eating. In terms of the maternal body, the infant is weaned off of breast milk. In terms of the social, the infant learns that it is not an animal and therefore must

abstain from incestuous, cannibalistic, or murderous urges. In an important sense, one becomes human by eating other animals rather than one's kin. This distinction between kin and food is elemental in how an individual conceives of herself in relation to others and the world, particularly the world of nonhuman animals.

The Notion of Abjection

Kristeva's *Powers of Horror* analyzes powerful fantasies of eating and devouring associated with both animals and women, particularly mothers. The first half of *Powers of Horror*, which sets out the theory of abjection, could be read as an account of the essential link between animal and mother in the constitution of the human psyche. As Kristeva describes it, abjection is the result of the return of repressed ambiguity or ambivalence inherent in the "fragile" boundaries between maternal body and infant on the personal level and animals and human on the social level. The abject, so to speak, is neither fish nor fowl; but rather, it is the in-between that resists categorization. This is why it provokes both fear and fascination.

The Oral Stage in Psychic Development

On the level of the infant, these fears revolve around the oral phase with biting, eating, and devouring. Kristeva argues that fear, especially

in children who have animal phobias, hides an aggression, which at the earliest stages is an oral aggression related to both food and speech (1980, p. 39). The child feels aggression in response to its fear both of the loss of maternal satisfaction and of paternal prohibition against its closeness with the maternal body. She argues that the child responds to both deprivation and prohibition with aggressive impulses, which in the case of the maternal body may literally include the urge to bite or devour to incorporate the maternal body in order to hold on to it (cf. 1980, p. 39). In the case of animal phobia, the child's own aggressive instincts are projected onto something outside of itself, an animal, as a shield not only against the deprivation and prohibition exercised toward it by its parents but also against its own violent impulses, most particularly the urges to bite and eat. At this stage, these impulses revolve around incorporation as an attempt to devour and thereby possess the parental (not yet) love object.

The Good and the Bad Breast

For Kristeva, there is an inherent connection between eating and other forms of assimilation, including the assimilation of love and of language. In the beginning, all of these forms of assimilation come through the mouth. For the infant, the mouth is the first center of bodily cathexis associated with pleasure, deprivation, and language acquisition. Words, like breast milk and its food, pass through its mouth. Kristeva interprets the phobic's fantasies of being bitten, eaten, or devoured by a scary animal as a projection of its own aggressive drives, particularly the urge to bite, eat, or devour the maternal body. Following Melanie Klein, Kristeva identifies the infant's earliest desires to bite, eat, or devour in relation to the mother rather than the father; originally, the infant's ambivalence is directed toward her. In Kleinian terminology, the mother's breast is split into the good and the bad breast. The bad breast threatens to turn on the infant and bite or devour him: the maternal breast bites back. Kristeva extends this Kleinian thesis

with her theory of the abject mother, who appears as both fascinating and threatening to her child.

Phobia, then, represents the failure of introjection of what is incorporated through the mouth, both maternal breast and paternal words (1980, p. 40). The precocious child does not yet have the linguistic or symbolic competence to properly displace the thing by substituting words, so it displaces by inverting its own impulses to bite and eat onto a telegraphic symbol like the phobic animal. This child may have a facility with, and fascination for, words, but its logorrhea does not effectively stop up the empty mouth deprived of the maternal breast.

Abjection and the Maternal Body

For Kristeva, fear of animals is correlative to fear of maternity. On the level of the social, this power is the mother's generative power (1980, p. 77); on the level of the individual, this power is the mother's authority over the infant's body and its satisfaction. Both collectively and individually, infants depend upon the maternal body (and animals) for continued life, especially nourishment; and this dependence is repressed through a process of abjection in order for the group or individual to assert its independence and fortify the boundaries of its identity. Kristeva interprets prohibitions against incest and contact with mothers or women, particularly during menses – symbol of women's fertility and generative powers – as attempts to regulate their power, what she calls “a loathing of defilement as protection against the poorly controlled power of mothers” (1980, p. 77).

Prohibitions Against Cannibalism and Incest

Relying on anthropological literature, Kristeva maintains that in cultures where population growth is needed for survival, prohibitions against contact with the maternal body, namely, incest and cannibalism, are relaxed (1980, p. 78). These anthropological accounts lead her to ask

“Is that parallel [between concerns for over – population and prohibitions] sufficient to suggest that defilement reveals, at the same time as an attempt to throttle matrilineality, an attempt at separating the speaking being from his body in order that the latter accede to the status of clean and proper body, that is to say, non-assimilable, uneatable, abject?” (1980, p. 78). She goes on to suggest that fear of the generative power of the mother not only makes her body abject and uneatable but also makes all bodies abject and uneatable. She says “I give up cannibalism because abjection (of the mother) leads me toward respect for the body of the other, my fellow man, my brother” (1980, p. 79; parentheses in the original).

The body becomes inedible, not literal flesh and blood that like animals’ can be consumed, but rather metaphorical flesh and blood, which is to say, kin – fellow man, brother. In other words, giving up the literal consumption of flesh and blood produces and is produced by the metaphorical notion of flesh and blood as kinship. Humans don’t eat their kin. In terms of animals, the circular logic runs as follows: if humans eat animals, they are not kin; animals aren’t kin, so humans eat them. Because their flesh and blood is literally consumed, they are not metaphorical flesh and blood and vice versa; because they are not metaphorical flesh and blood, they are literal flesh and blood in terms of what humans eat.

Kinship by Marriage or Meals?

Given Kristeva’s analysis of the structural relation between the mother and the animal in the process of abjection and identity formation, it’s important to ask why the taboo against eating the abject maternal body does not also apply to eating the abject animal body. We might ask why the taboo against eating the abject maternal body does not also apply to eating the abject animal body. On Kristeva’s analysis, the social struggle against the abject is a battle of the sexes over whether paternal or maternal power will triumph; it is a battle between patriarchal and matriarchal social formations. Behind these

struggles, however, lay the animals. Even while discussing the power struggle between masculine and feminine or paternal and maternal, Kristeva returns to the animal. She asks whether food loathing or prohibitions against certain foods, particularly animal flesh and animal products, are a matter of marriage or of meals.

Following this line of thought, which comes from the anthropologist Célestin Bouglé, and combining it with the theories of anthropologists Louis Dumont and Mary Douglas, Kristeva argues that loathing or revulsion must be explained in terms of an opposition between pure and impure, which is imposed upon or displaces sexual difference. The opposition between pure and impure allows for the substitution of rituals of purification for sacrifice. Both rituals of sacrifice and rituals of purification, however, revolve around killing and eating animals. Kristeva traces the origins of religion, particularly religious taboos; and she finds the mother and maternal body behind all such taboos. In the transition from rituals of sacrifice to rituals of purification, one thing remains the same, the abjection of the maternal body.

Biblical Food Prohibitions

The role of the maternal body in relation to the animal is particularly poignant in Kristeva’s analysis of what she calls the “semiotics of biblical abomination” or the food prohibitions of the Old Testament (see 1980, Chap. 4). She argues that fear of the maternal body and its generative power and its authority over the bodily functions of children gives rise to food taboos involving mixing her body (or its symbolic equivalents) with the bodies of her children (or their symbolic equivalents). On the symbolic and imaginary levels, she interprets these food prohibitions as again revolving around the abjection of the maternal body. Literally, however, this abjection is played out on the bodies of animals and regulations about what parts of those creatures can and cannot be eaten and how. In this regard, all animal bodies become symbols for the maternal body and its relation to the bodies of children

(which is to say the maternal body of all, since all are born from a maternal body). Animal bodies become symbols for human bodies; and both our rituals of animal sacrifice and of purification involving eating only certain animals or animal parts harken back to the maternal bond.

Food Prohibitions and the Maternal Body

Although Kristeva identifies food prohibitions with border issues that relate humans to nonhuman animals, her analysis continually brings those issues back to the maternal body. She says: “When food appears as a polluting object, it does so as oral object only to the extent that orality signifies a boundary of the self’s clean and proper body. Food becomes abject only if it is a border between two distinct entities or territories. A boundary between nature and culture, between the human and the non-human” (1980, p. 75). This passage suggests that the boundary with nonhuman animals “pollutes” the clean and proper borders of the human. On Kristeva’s analysis, however, this pollution turns out to be just another form of maternal contaminant. Her thesis is that “biblical impurity is permeated with the tradition of defilement; in that sense, it *points to* but does not *signify* an autonomous force that *can* be threatening for divine agency. Such a force is rooted historically (in the history of religions) and subjectively (in the structuration of the subject’s identity), in the cathexis of maternal function – mother, women, reproduction” (1980, p. 91). She argues that dietary prohibitions are aimed at the mother as the first source of nourishment and milk. These taboos are attempts to fortify precarious boundaries between the maternal body and the social and individual subject insofar as they are directed toward “intermixture, erasing of differences, threat to identity” (1980, p. 101). Biblical food prohibitions are aimed at separation and distinctions that avoid the ambiguity and mixing threatened by the maternal body. All food prohibitions, then, according to Kristeva, are symbolic regulations of the power of the maternal body.

Thou Shalt Not Seethe a Kid in His Mother’s Milk

For example, she maintains that the biblical command “Thou shalt not seethe a kid in his mother’s milk” is a metaphorical prohibition against incest between mother and child symbolized by mixing its flesh with her milk (1980, p. 105). She concludes that biblical dietary prohibitions are “based upon the prohibition of incest” (1980, p. 105). All food taboos involving animals, on the symbolic level, are really prohibitions against contact with the maternal body. Kristeva even interprets the Eucharist in terms of the maternal body. Unlike Sigmund Freud who in *Totem and Taboo* describes the Eucharist as another ritualistic repetition of the totemic celebration of eating the father, Kristeva sees it as both a repetition and disavowal of the primal “object” of the urge to devour, the mother. She suggests that cannibalistic urges to eat the body of another are always disguised (or not so disguised) wishes to eat the mother (Freud 1913). On her account, every body recalls the maternal body, the first body encountered by the infant. The Eucharist brings together food and body in a ritualistic way that harkens back to cannibalism, symbolically repeating it as a way of preventing actual eating of bodies – except, as discussed earlier, the bodies of animals. Kristeva maintains that by bringing together body and bread, the Eucharist tames cannibalism: “By surreptitiously mingling the theme of ‘devouring’ with that of ‘satiating’, that narrative [the Eucharist] is a way of taming cannibalism. It invites a removal of guilt from the archaic relation to the first pre-object (ab-ject) of need: the mother” (1980, p. 118). It is noteworthy that in this passage, Kristeva talks of “taming” cannibalism as if it is an animal instinct that must be domesticated. Furthermore, she identifies both the urge to devour and satiation with the maternal body by insisting that the Eucharist is a purification ritual aimed at curbing and regulating incestuous and cannibalistic desires for the mother and the maternal body.

The Substitution of Mother for Animal

In her analysis of biblical dietary restrictions, she discusses at length taboos on various animals

and animal parts, but continually insists that these animals are stand-ins for the mother, much like Sigmund Freud who insists that the animals in animal phobias are representatives for the father. The process that Kristeva describes, however, is the metonymic slippage from milk and blood to maternal body rather than the metaphorical substitution of horse or wolf for paternal threats. Kristeva is concerned to distinguish the process of substitution or sacrifice identified by Freud in *Totem and Taboo* from the process of ritual purification involving dietary restrictions rather than killing and eating per se. In other words, dietary restrictions prevent the kind of murderous sacrifice of the primal horde whereby the animal becomes the father and vice versa. What Kristeva does not acknowledge is that animals are still killed and eaten even when purification rituals regulate that activity. The difference is one of emphasis. In purification rituals, the killing of animals is no longer a necessary part of the ritual (with some exceptions, e.g., Jewish kosher regulations on the bleeding of animals, which Kristeva interprets as again signaling the threat of blood, a metonym for menstrual blood). In all cases, however, animals are killed; only now their killing is not part of a ritual sacrifice but a regular part of domestic culinary practices, which involve various restrictions focused on how animal flesh is prepared. In other words, the killing of animals becomes domesticated.

Ritualistic Feasts and Dietary Prohibitions Prevent Violence

Kristeva sees the progression from ritual sacrifice to rituals of purification as a move away from violence and toward more sublimatory and therefore more humane forms of regulation; her analysis suggests that ritual sacrifice glorifies the violence of killing, while rituals of purification sublimate it. Yet, contra Kristeva, it could be argued that rituals of purification merely domesticate the killing of animals and allow for a radical disavowal of their slaughter to the point of creating factory farms, where mass

killing is hidden away from view rather than ritualized but extremely limited killing celebrated as animal sacrifice. Animals are no longer sacrificed because neither their lives nor their deaths have the symbolic value they did prior to domestication. Within psychoanalytic theory, their only symbolic value is either as a substitute for the father ala Freud or a stand-in for the mother ala Kristeva.

The Psychoanalytic Sacrifice of Animals for the Sake of Human Kinship

Moreover, the psychoanalytic domestication of animals itself forecloses not only the possibility of their wildness but also the possibility of their kinship with humans. They cannot replace mothers or father or sisters or brothers, but rather they must represent them or stand in for them. They must be either sacrificed instead of them – that is to say killed in their stead. Or, they must be regulated as a means of regulating ourselves. In either case, their value is defined entirely in terms of human relations and human exchange. Whether sacrificed or regulated, animals are killed or exchanged so that human society and human kinship is possible; and all of these accounts are based on, or presuppose, killing and eating animals. In this case, humans are not what they eat, and eating animals proves that they are not like them. Rather, humans become fathers, mothers, sisters, and brothers on the basis of killing and eating animals. Symbolically, they bind individuals together as kin through the flesh and blood of their bodies and, at the same time, reassure that if humans can eat them, then humans are not animals. Literally, their death as animals makes it possible to live as humans.

Eating Separates Humans from God

Kristeva also describes the distinction between man and God as a dietary distinction. Man is not God because, unlike God, he/she is prohibited from eating certain foods. For example, in Genesis, God expels Adam and Eve from the Garden of

Eden for eating from the tree of knowledge, but he does so before they can eat from the tree of life, which would make them immortal (cf. Kristeva 1980, p. 95). Kristeva points out that Adam's temptation is both a feminine and animal temptation – Eve is tempted by the serpent, and Adam is tempted by Eve to eat the forbidden fruit. Kristeva interprets Genesis as reserving dominion over living beings for God and giving man the right to eat animals only after the flood and only then as an acknowledgment of his/her essential evil (1980, p. 96). At this point, temptations of the flesh become associated with both women and food, particularly meat eating. Temptations of the flesh can be interpreted as temptations arising from the flesh, from our so-called animal nature, or as temptations for flesh, as in the temptation to get “a piece of tail” either in the sense of women's flesh or in the sense of a rump roast. Kristeva reads this urge to kill and eat flesh as recognition of the death drive in its most primordial form, as the urge to devour (1980, p. 96). The prohibition against murder is no longer extended to killing and eating animals, but rather becomes displaced onto dietary prohibitions that prohibit eating carnivorous animals; man can eat only herbivorous animals and cannot eat or assimilate-incorporate rapacious animals or predatory animals that kill. This murderous nature is displaced onto the animals that one is not allowed to consume (cf. Kristeva 1980, p. 98).

Violence Toward Women and Toward Animals

Although her analysis of the death drive and the urge to devour in relation to killing and eating animals is an explicit acknowledgment of violence done to animals in order to shore up the boundaries of the notion of the human and of ourselves as nonanimals, again Kristeva presents it as more evidence that animals are stand-ins for the maternal body. Immediately following her discussion of the death drive in relation to devouring animals, she claims that biblical dietary prohibitions are

paralleled and founded in “the abomination provoked by the fertilizable or fertile feminine body (menses, childbirth)” (1980, p. 100). Kristeva's analysis not only makes explicit that abjection of the feminine and maternal body upon which the Western imaginary thrives and upon which man defines himself as clean and proper, but also it points to the inherent connection within this imaginary of animals and women, particularly mothers. What animals and mothers supposedly share is their connection to nature, and, as Kristeva says, “the body must bear no trace of its debt to nature: it must be clean and proper in order to be fully symbolic” (1980, p. 102).

To acknowledge this debt, then, is not only to break the incest taboo by speaking of connectedness to the maternal (animal) body but also to stage the return of the repressed maternal, animal, and body. As many feminists have pointed out, within the Western imaginary, man constitutes himself as properly man against both the feminine and the animal. Kristeva's analysis makes a crucial contribution to psychoanalysis by revealing man's indebtedness and subsequent disavowal of both. She does so in part by complicating the maternal function, which she imbues with speech, law, and authority, attributes traditionally reserved for the paternal function and required for autonomy from the maternal body. Yet, what Kristeva's theory of abjection itself disavows, even while describing, is an indebtedness to animals, who metaphorically and literally nourish an individual's sense of self as human and as kin. The very notions of maternity or paternity, mother or father, that drive psychoanalytic theory are based on the displacement or condensation of these figures and animals. Whether it is Freud's father totem phobia or Kristeva's mother meal abject, the slippage between animals – specifically dead ones – and one's closest and most influential kin is formative of both social identity and individual identity. Moreover, on this account, non-violence toward other human animals is bought at the expense of violence toward nonhuman animals.

Summary

Whether it is Freud's father totem phobia or Kristeva's mother meal abject, the slippage between animals – specifically dead ones – and one's closest and most influential kin is formative of both social identity and individual identity. Moreover, on this account, nonviolence toward other human animals is bought at the expense of violence toward nonhuman animals.

Cross-References

► [You are What You Eat](#)

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Land Acquisitions for Food and Fuel

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Synonyms

Agrofuel; Bioenergy; Biofuel; Foreign investment in agriculture; Land grabbing; Land grabs; Land rush; Large-scale land acquisitions; Off-shore agricultural production

Introduction

Large-scale land acquisitions (LSLAs) for the production of food, animal feed, and, especially, biofuel have become a controversial issue in global affairs, which are laden with massive ethical challenges. LSLAs, commonly referred to as “land grabbing,” are a worldwide phenomena, the incidence of which has risen sharply since the 2008 global food crisis and has been estimated to have surpassed the acquisition of over 150 million hectares of land worldwide. The contemporary global rush by investors and states to acquire high-quality agricultural land is linked to ethical concerns, for example, when land deals lead to the forced displacement of local populations that previously had customarily worked and subsisted on such lands previously or when domestic food

production is displaced by biofuel production for export for foreign markets. Given how recent LSLAs are, the scholarly literature on the ethics of LSLAs is at incipient stage. As such, this entry offers a preliminary discussion of the ethics of LSLAs informed by a global ethics perspective. The first section provides an overview of key definitions, characteristics, and trends of LSLAs. The second section explores the idea of a global ethics as it relates to the study of food and agriculture. The third section applies global ethics to the case of LSLAs by posing and discussing two questions: Is acquiring large quantities of land ethical? And when can LSLAs be considered ethical/unethical?

Large-Scale Land Acquisitions: Definitions, Characteristics, and Trends

LSLAs is only one of several terms scholars have used to describe the proliferation of land deals. Other commonly used terms in the literature and public discourse include cropland expansion, land grabs, land grabbing, and the global land rush, to name a few. For the purposes of the analysis here, LSLAs is used because this term has become the most widely used in contemporary policy discourse. However, it is important to acknowledge that this term is not a neutral one and some commentators have argued the term acquisition is a legitimating discourse to justify the practice of LSLAs. The word “acquire,” it has been argued, makes

reference only to the actions of those acquiring land and evokes market-based transaction between willing buyers and sellers. This particular semantic frame can render invisible the existence of, and consequences for, land users, who may not be the party selling land. By comparison, the term land grab evokes something very different. A grab, like a “power grab,” suggests an unfair appropriation of something and this is a cogent reminder of the normative power of discourse and framing.

Scholars and policymakers have developed several definitions of LSLAs to distinguish it from other forms of land purchases and/or appropriation of natural resources. Some definitions seek to establish criteria in order to distinguish land acquisitions from other forms of appropriation and to provide a basis for an empirical methodology, while others seek to identify and understand the asymmetrical power relationships implicit in land acquisitions. These are considered below.

Geographer Annelies Zoomers (2010) defines LSLAs as recent large-scale, cross-border land acquisitions that involve leases of over 30 years or direct purchases of a size greater than 5,000 ha carried out by private firms or initiated by foreign governments. Although here definition can be applied beyond food and agriculture, this definition is useful because it brings into focus several important features such as acquisitions’ transnational/transborder quality, the modalities of acquiring of land, criteria for distinguishing “large” from “small”, and incorporates the key actors involved into analysis. A recent, influential global study of LSLAs (Anseeuw et al. 2012, p. 18) employed a similar definition based on the following features: transfer of rights to use, control, or own land through sale, lease, or concession; implies a conversion from land used by smallholders, or for important environmental functions, to large-scale commercial use; deals 200 ha or larger; and not concluded before the year 2000.

In a recent article, Borrás et al. (2013) argue that there are severe limits to defining LSLAs according to size and type because doing so can obscure what is unique to contemporary land

deals, most notably, their potential long-term implications for the global agri-food system as a whole and trajectories of agrarian change. Franco et al. (2013) build on more recent scholarship to suggest that definitions of LSLAs should incorporate three key dynamics of social relations: the *assumption of control* over resources by one party over another and how benefits are accrued, the *modalities of acquisitions* and the *source(s) of capital*, and consideration of how the contemporary global political economy context that is *reconfiguring power relations across and between the north and global south* is altering the political dynamics to legitimate/challenge land deals (Franco et al. 2013).

Scholars and policymakers have found it difficult to obtain a precise picture of the scope and depth of LSLAs. The details of most land deals are not made public and there is a general lack of transparency about the nature of these contracts and the actors involved. Because of this lack of information, analysts have responded by developing multiple methodologies to assess the extent of land acquisitions based on the information available. Lorenzo Cotula (2012) summarizes the findings of recent studies noting the total quantity of land acquired is 51–67 million hectares and that this occurred in the period between 2001 and 2010. To put this in perspective, this land total is roughly the size of Ukraine. A much higher figure has been reported by the international nongovernmental organization, Oxfam; its most recent report on land acquisitions estimated that up to as much as 227 million hectares have been acquired globally (Oxfam 2011). The key point relevant for this analysis is that regardless of which figure is closest to the true amount, all these figures laude massive volumes of land being acquired.

Existing data confirms that the proliferation of LSLAs is a *recent* phenomenon. The vast majority of land deals had taken place since 2005 and reached record levels in 2008–2009 (Deininger et al. 2011), which was at the peak of the 2008 global food crisis. Because the proliferation of LSLAs spiked in 2008, most analysts consider the global food crisis a major driver of LSLAs.

LSLAs are also a *global* phenomenon. Whereas media attention has focused disproportionately on sub-Saharan Africa, where rural poverty is significant and which is a major site of land deals, LSLAs are occurring in all regions of the world, including Southeast Asia, Eastern Europe, the Americas, and Australia. The expert consensus is that land acquisitions are expected to increase in the medium term due to high and rising prices of, and growing global demand for, agricultural goods. This suggests that LSLAs are becoming a “normal” feature of the global agri-food system.

There is also considerable heterogeneity that occurs across LSLAs. For the purpose of this article, two key dimensions of heterogeneity are particularly important. The first dimension is the intended production outcomes of LSLAs. In other words, LSLAs for what? The vast majority of land deals are for the production of biofuels and bioenergy (Anseeuw et al. 2012; Deininger et al. 2011). Key feedstocks for the biofuel production process include sugarcane, corn/maize, palm oil, and soybeans. This trend is consistent across all regions of the world although the selection of crops varies by region according to their suitability to local conditions. The increasing shift toward renewable fuels and “green energy” is a major driver of land acquisitions. For example, the European Union’s renewable fuels mandate requires that 10 % of transport fuels be supplied by renewables by 2020 which is estimated to require substantial imports of biodiesel inputs, mainly from palm oil produced in South America and Southeast Asia (see Anseeuw et al. 2012, p. 26).

The second dimension of heterogeneity is the range of actors engaged in the acquiring land. On the acquiring side of the equation, research has shown that transnational corporations (TNCs), including those that specialize in food and agriculture, such as trading houses, supermarket chains, and renewable energy producers, are acquiring land to ensure the supply of agricultural inputs and expand vertical integration strategies right down to the control of the farm. Financial actors are increasingly prominent, ranging from investment banks, equity funds, and pension

funds that engage in acquiring land directly or as partners in new agricultural ventures. The motives of financial actors vary, but in general they are influenced by widely held view that the global agricultural sector will be a major source of future profits as commodity prices continue to rise. Because of these trends land is now a highly desirable asset class. States are also engaged in acquiring land abroad. For example, China, South Korea, and the Gulf states are directly and indirectly involved in LSLAs through the operations of state-owned enterprises and sovereign wealth funds. In addition, these states are providing other forms of inducement, including subsidies, special loans and financing, and tax breaks to domestic firms seeking to acquire land overseas. Similarly, subsidies, loans, and tax breaks to companies engaged in renewable energy in the North also act as a direct driver of land grabbing (Cotula 2012). Local elites and domestic firms are also engaged in acquiring land; however, this is occurring for deals at much smaller scales than international ones (Cotula 2012).

Global Ethics and Land Acquisitions

Global ethics (also known as world ethics or cosmopolitan ethics) is an ethical perspective that is useful to unpack the many ethical challenges posed by LSLAs. This is not to suggest that global ethics is the only, most appropriate or exhaustive ethical approach to the study of LSLAs. Rather because global ethics as an approach considers how globalizing processes and the deepening interconnections among individuals, states, and organizations across space and time can produce socially desirable or undesirable outcomes, and given that LSLA are global-scale phenomena makes global ethics a logical point of departure.

The basic argument for a global ethics is put forward by the philosopher Nigel Dower in the book, *World Ethics: The New Agenda*. Dower (1998, p. 2) defines global ethics as “an ethical theory or approach which puts forward a set of norms and values to guide our relations with the

rest of the world.” A basic premise of global ethics is that an individual’s ethical obligations are not limited to their immediate/local community, be it their family or country. Instead, ethical obligations are posed as extending to the global scale. Thus, the intellectual goal of global ethics is to arrive at theoretical and practical positions of how to behave ethically given individuals are interconnected at the global level. For Dower and many other global ethicists, a few simple principles can be said to form the core of a global ethical perspective: solidarity, pluralism, and peace. As such, global ethics are not a precise, strict ethical code but rather a different way of approaching rights and obligations at the global level that is not trapped by conventions such as the territorial authority of the state. Despite the skepticism that many have regarding the idea of global ethics, there are many examples of actually existing global ethics operating in the conduct of global affairs. Global ethics are visible in the creation and implementation of international human rights, international development assistance, and transnational social justice movements such as the fair trade movement (Dower 1998).

Global ethics can be applied to many areas of social life, including food and agriculture. However, it is important to distinguish global ethics, which are general in scope, from applied food and agricultural ethics, which are designed to guide the conduct of food and agriculture professionals. Today, global ethics are visible in several areas of food and agriculture. To illustrate this point, take, for example, fair trade coffee. Unlike a decade ago, fair trade coffee today has near ubiquitous status. Fair trade coffee is sold at high-end coffee shops in major metropolitan centers but also increasingly in far-flung places, such as gas stations in isolated, rural communities. The relevant point here is not whether people choose to consume fair trade coffee or not, or the extent to which such products are available, but rather that today fair trade coffee (similar to sweatshop labor-free consumer goods and organic foods) reflects greater global awareness of the global-scale social and ecological effects of our consumption choices. This awareness translates

into significant changes in the practices of individuals and groups at the level of consumption and production.

Some Ethical Questions Raised by Land Acquisitions

A global ethics perspective is well suited to the study of LSLAs because so many land deals are transborder transactions consisting of relations between individuals and groups. These relations can result in positive or negative outcomes, broadly defined, in reference to the key principles of global ethics: solidarity, pluralism, and peace. What does global ethics have to say about LSLAs? This ethical discussion is developed below through the consideration of two questions.

Is Acquiring Large Quantities of Land an Ethical Act?

Any discussion of land acquisitions today should be clear that these refer to very specific types of transactions involving significant quantities of land. Thus, it is important not to conflate LSLAs with other types of general, smaller-scale exchanges of land, which present their own unique set of ethical dilemmas (e.g., land inheritance within the family, illegal squatting, etc.).

A useful way to begin to situate the ethics of acquiring large quantities of land is to examine the recent past for a comparable situation. LSLAs were a central feature of colonialism and imperialism. The colonization of the Americas and much of the non-European world, by Spain, Portugal, Holland, France, and England, is an example that should be familiar to most readers. During that period, colonial and imperial powers justified land acquisitions, including the use of violence against indigenous peoples, by invoking their moral and religious beliefs. This included the belief that European peoples were superior to indigenous populations, even believing such peoples to be subhuman. This led to a general situation of massive physical and cultural violence against indigenous populations who were forcibly displaced, sometimes murdered en masse,

from their traditional territories to secure territory and resources. The effects of colonialism and imperialism continue into the present. The legacies of cultural destruction and racism remain a salient policy issue in many former colonies such as Canada and Australia. Today's political geography is the direct result of past land acquisitions; most nation states in existence today were previously former colonial territories. Although certain colonial-like situations continue to exist in the modern world, it is no longer a defining feature of modern life.

Today's LSLAs bear some resemblance to colonial and imperialism in so much as it appears that vast tracts of land are being appropriated in developing countries by powerful actors at the expense of poor, vulnerable groups. Since the practice of acquiring large quantities of land first began attracting media headlines in 2008, land deals have been labeled widely as neocolonialism and imperialism. LSLAs have set off a wave of global concerns about the negative impacts of land deals on poor farmers in the global South; this has resulted in significant transnational advocacy seeking to curb and/or to stop land deals from taking place. The direct comparability between LSLAs today and colonialism/imperialism practices of the past is an important intellectual question (Robertson and Pinstrup-Andersen 2010; Alden Wily 2012).

There are major and important difference between land acquisitions today and past practices. First, land acquisitions today are taking place in the context of a globalized economy. Second, the vast majority of deals occur through market-based transactions such as purchases and leases, instead of appropriation by physical force or other forms of bilateral territorial treaties (i.e., such as the practice of territorial treaties among imperial nations and indigenous peoples that created the reserve system in North America). It can be said that current LSLAs signal the creation of a global land market. Such a development immediately raises difficult questions about whether land should be further subject to enclosure and commodification given that, historically, such processes have tended to increase inequality and privatize public resources, which may

produce social conflict. Furthermore, many of the actors engaged in land acquisitions, such as agri-food corporations and institutional investors, are very powerful actors in today's economy, and because farmland in developing countries is relatively inexpensive and poorly governed in many cases, this leads to situation of asymmetries between buyers and sellers. Many have argued that these types of scenarios likely increase the inequality of land ownership within and across countries. The past has repeatedly shown that situations of highly unequal patterns of land ownership and access to resources lead to social and political conflict. From a global ethics standpoint, the proposition that acquiring large quantities of land may be regarded as unethical in light of historical practices is to be expected.

When Are Large-Scale Land Acquisitions Ethical? When Are They Unethical?

This section considers the question of LSLAs slightly different than the preceding section by drawing on global ethics to establish some general guideposts to determine when acquisitions can be said to be ethical or unethical. Thus, what is offered below is an intellectual exercise of thinking through idealized types.

LSALs are most likely to be consistent with global ethics when communities who may be potentially affected by a land deal have some form of meaningful input into the decision-making process over land deals (this can be direct and indirect), there are net and significant economic and social benefits for the communities, and these deals operate in ways that support sustainable development. Importantly, land deals must support pluralism; that is, that it permits individuals and communities the option to continue living in a manner consistent with their preferred sociocultural norms and mores. In contrast, LSLAs are most likely to be unethical from a world ethics perspective when communities cannot participate in decisions that will affect them, when they lose control and access to the productive resources vital to their livelihoods, and when land deals result in social breakdown and ecological damage.

The term community is employed here instead of other units of social organization, such as the individual or the state, because this concept best contextualizes the on-the-ground realities of LSLAs. Most acquisitions occur in rural areas where agriculture is the primary, or at least a significant, source of livelihood for the community, and also because land plays an important social and cultural function for the community such as when cultural practices are deeply intertwined with working the land. Bringing the community into focus is all the more vital because most of the actors engaged in land acquisitions often think of only the land as commodity and not the social context/meaning of land.

The autonomy of communities and pluralism are linked concepts that are given considerable weight in a global ethics perspective. Autonomy is used here to refer to the capacity of individuals and communities to make decisions over how they will live their lives. Autonomy means different things to different societies across space and time. For example, in Western society, there is a strong association of autonomy with individual liberty and democratic political systems. In other societies, autonomy may be defined vis-à-vis religious beliefs and traditional cultural practices. Global ethics takes autonomy seriously but recognizes that autonomy is fluid and always constrained by sociopolitical structures.

Pluralism is used here to refer to ethical position that accepts and respects that values, morals, and norms differ among communities/societies/nations. Pluralism requires that we acknowledge other, alien ways of living as equally valid as our own. Consider, for example, the case of a LSLA that prevents pastoralists from accessing traditional grazing lands. If this situation results in the outcome that pastoralists must abandon raising cattle and find alternative livelihoods, then this is a case that goes beyond a conflict over access to resources but the unmaking of one groups' way of being. The point here is not whether pastoralists might be better off economically if they pursue alternative forms of employment, this may be one possible outcome, but rather that these individuals are forced by the

actions of others to seek alternative livelihoods that may not be the particular group in question preferred choice.

From a global ethics perspective, it could be argued that net economic and social benefits suggest something much more than the flow of capital into a country and the adequate "compensation" for the purchase or lease of land. Of course, in the best of possible worlds, communities would receive not just a fair price for land but also related employment, new infrastructure, and additional resources to provide vital social services (e.g., health, education, etc.) for the communities. A major benefit would be if LSLA acquisitions could enhance domestic food security, for example, by increasing the production, quality, and availability of basic foodstuffs. The data thus far has been a major cause for alarm for analysis because it suggests the opposite is occurring.

A recent World Bank report found very few deals were resulting in significant employment and services for local communities (Deininger et al. 2011). Instead, many LSLAs are imposing significant costs on communities by reducing the access to communal lands and to water supplies. There is also evidence to suggest that many communities are receiving less-than-fair compensation – that is, if they receive any compensation at all – as there are many cases reported of nonpayment or delayed payment (Anseeuw et al. 2012).

Sustainable development is implicit in, and coherent with, a global ethics perspective. Sustainable development is particularly salient to the discussion of LSLAs because these deals in many instances necessitate a shift toward energy-intensive, industrial agricultural practices in areas where previously farming may have been practiced on a smaller scale and with a lesser ecological footprint. The logic driving many LSLAs is that investors can easily set up capital-intensive, export-oriented new agricultural production with a sufficient land base to ensure economies of scale. A related concern is that most land acquisitions are occurring in states with limited environmental protection toward

agriculture. This raises concerns that LSLAs will diminish soil, air, and water quality and produce negative effects on the health of local communities. There is evidence this is already occurring (Anseeuw et al. 2012). Land acquisitions are creating situations that are “externalizing” the environmental costs and risks of agricultural production in a new way; the risk and costs are not borne by the consuming country but by the local communities where land has been acquired, or acquired from. Thus, from a global ethics perspective, land acquisitions are unethical to the extent that they endanger the ecological and social health of one community in order to meet the consumption demands of the populace of a distant country.

LSLAs for biofuels present a double-layered ethical dilemma. Gamborg et al. (2012) elsewhere identify that the ethical challenges associated with biofuel are (1) changing land use from food to energy production and the competition these creates with food production and (2) leading to deforestation and increasing greenhouse gas emissions. Initially, the ethical debates about biofuels centered around whether states should support the production of biofuels, such as the decision by the US government and European Union (EU) to require that automobile fuels be blended with a fixed percentage of biofuel and the implications of these policies for land use change, farm policy, and farmer income at the national level. LSLAs for biofuel are the result of policy decisions taken by distant governments to support alternative energy, and this is clearly a transnational dimension. Toft (2012) describes this situation as the “food versus fuel” debate and draws on cosmopolitan ethical theories to argue that land acquisitions for biofuels are dubious from a global justice perspective because the benefits are enjoyed by rich consumers (i.e., who own automobiles and purchase biofuel-blended gasoline) whereas the burdens of biofuel production are borne by poor farmers in the global South, who have likely lost access to land and means of livelihood. From a global ethics perspective, the argument for supporting biofuel production because of its purported

capacity to reduce greenhouse gases is not justified if it comes at the expense of one (poor, vulnerable) community for the benefit of the (wealthy consuming) other.

Conclusion

LSLAs for food and biofuel are recent global phenomenon that poses multiple and significant ethical challenges. Whereas many of the specific food and agricultural issues themselves are not entirely new, such as those related to sustainable development, biofuels, and industrial production methods, what is new is the way in which land acquisitions now place these issues squarely as ones of transnational significance instead of only local or national ones. Therefore, global ethics provides an appropriate starting point to consider the ethics of land acquisitions. Global ethics are already informing the development of new, global regulatory instruments, such as the United Nations-sponsored *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* and Group of 20-sponsored *Principles for Responsible Investment in Agriculture*, which seek to promote more socially and ecologically responsible practices by investors and governments involved in land deals. Going forward, a major challenge will be whether such new transnational instruments will have the sufficient moral and legal force to address and prevent the most negative effects of LSLAs.

Summary

The recent global proliferation of large-scale land acquisitions for food, and fuel is a new and significant issue in the study of food and agriculture ethics. This entry examines large-scale land acquisitions for food and fuel from a global ethics perspective. The first section provides an overview of key definitions, characteristics, and trends related to large-scale land acquisitions. The second section explores the idea of a global ethics and situates

it within food and agriculture ethics. The third section poses and discusses two questions related to ethics of large-scale land acquisitions.

Cross-References

- Access to Land and the Right to Food
- Biofuels: Ethical Aspects
- Corporate Farms
- Corporate Social Responsibility and Food
- Extraterritorial Obligations of States and the Right to Food
- Private Food Governance
- Trade and Development in the Food and Agricultural Sectors

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Law and Regulatory Mechanisms for Food and Agriculture Research

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Synonyms

Law and regulatory mechanisms for food and agriculture research; Legal framework(s) for food and agriculture research; Regulatory regimes for agricultural and food research; Regulations and oversight mechanisms for food and agriculture research

Introduction

Nowadays, decisions concerning production, distribution, and consumption of food are not only reviewed from perspectives like *food safety* but in relation to fairness in its distribution, the sustainability of food systems as a whole, or their impact upon cultural diversity or personal identity. The ones to address of all these decisions are those that have involved the establishment of regulatory frameworks with regard to food and agriculture research.

Agro-food sciences and the technological applications in this sector have the potential to

assist all human beings to satisfy their *daily need for food* and not only in terms of survival *stricto sensu*. In terms of scientific-technological development, humans have never been closer to being able to provide each and every inhabitant of the planet with food suited to their specific nutritional needs. These ideas have repeatedly been highlighted in documents issued in the second half of the 1990s by institutions such as the OECD, the FAO, or the institutions of the EU which referred to advances in the field. Thus, for example, in 1998, the 5th European Union Framework Programme of Research and Technological Development underlined the potential of modern biotechnology vis-à-vis the obtaining of safe, *healthy, balanced, and varied* food. However, as it is known, this potential of food and agriculture research does not serve to explain the nature of the sociopolitical and economic tensions surrounding these advances, in particular those in agrobiotechnology. The law regulating this field has been created to mitigate potential conflicts of interests and untoward ethical practices reflected in this scenario of tension.

The laws, regulatory developments, and mechanisms of supervision currently applied to food and agriculture research are part of a fragmented model of global governance, divided into regulatory levels which compete among themselves. All of this gives rise to several questions: who created the different regulatory frameworks for food and agriculture research? What are the concerns they have addressed and where are they leading human societies? To answer these questions from a global and multicultural perspective is not easy. Law is an expression of culture which is intimately related to the geography, history, political sensitivities, and sovereignty of the states which created it. Nevertheless, on a global scale, there are a number of elements which can be critically analyzed. Among them, it is possible to study how foods have been predominantly considered as tradable commodities throughout history.

The Ethics Behind Food and Agriculture Law: Historical Background and Some Warnings Regarding Its Critical Analysis

The law is an instrument, even since the earliest societies, has been employed to resolve social problems. Compared with other mechanisms created with a similar purpose, the law is notable for its high degree of formalization and its coercive character. Nonetheless, there are significant limitations to its potential to resolve conflict. Why? Because in spite of its apparent strength, the task of the law is basically to impose behavioral guidelines (actions or omissions) upon a series of subjects, who are understood to be an important part of the problem. As the philosophy of law explains, the members of societies tend to obey the law either because they agree with the rules or for fear of sanctions, but the mere creation of a legal norm does not guarantee per se that it is going to be obeyed. However, there may well be an incorrect approach to the problem on creation of the law or the selection of behavioral guidelines that contribute nothing towards its resolution.

Contemporary food law systems are very complex systems relating to a multitude of aspects of production, distribution, and consumption of food. Moreover, their creation involves the participation of different entities, which range from local to international and are not immune to the influence of certain private stakeholders. But it is important to underline the fact that, to a certain extent, the complicated regulatory and oversight mechanisms employed share a common root with the food law that was already operational in ancient Rome. In which sense?

Food and Agricultural Law in Ancient Times

The societies of ancient Rome, Greece, or Egypt already had their own legal norms, and it is known that some of these referred to certain specific aspects of the food fact. This was an incipient *food law*, much simpler than today's in its objectives and means, but which in short prohibited or enforced certain behavior and

advocated legal consequences for those who infringed its terms. With regard to the matter at hand, it also contained a provision maintained by current regulatory systems. That is the consideration of food as a tradable commodity.

It has been said that the first few thousands of years of the history of humanity boiled down to the essential chances of survival. Though not exclusively, survival depended, and still depends upon, the response provided to the daily need for food (Teuberg 1989), and this explains why like other living creatures, humans developed different skills and techniques to obtain more and better food and drink. With the first tools, *Homo habilis* embarked on a journey towards what thousands of years later, and thanks to other milestones such as the mastery of fire, would be the food industry. As it is known, the most significant transformation would come with livestock and agriculture, barely 10,000 years ago. The production of food from plant species and domesticated animals is one of the characteristics of the new age: the Neolithic age. Archeological samples also provide evidence that in this era people already possessed technologies which – in the strictest sense – might be described as *food technologies*, in other words, knowledge and practical applications of principles of the science of the preservation, processing, preparation, packaging, storage or transport of food (Curtis 2001). Products of the land, already improved by agricultural or livestock farming, were transformed into more easily consumed and better tasting products. As long as 8,000 years ago, harvests were already being stored in holes dug in the ground and then covered with clay (*Al-Fayyum*, Egypt).

Within the scenario of the first civilizations (Ancient Egypt or particularly the city-states of Greece and Rome) appeared the first juridical rules applied to food. Urbanization in ancient times increased consuming populations incapable of directly producing their own food, and there appeared agents specialized in food production and retailing. Knowledge with regard to processing, storage, or transport of food and drink would be crucial in the appearance of different *stages* between growers and end consumers (Burnett and Oddy 1994). This would be

a potential source of conflict, solution to which would be sought via legislation.

The first public controls of which there is evidence referred not so much to the processes of elaboration, as to the guarantee of contractual *bona fides*. This involved the supervision of prices, of systems of measurement (scales, tape measures) and quality control. In the ensuing centuries, the local administrative or judicial authorities of different countries would apply similar measures, designed to prevent charging exorbitant prices, giving short weight and the adulteration of food products (e.g., the English *Assize of Bread and Ale* dating, 1285). There was never any doubt – as mentioned already – that food was a consumer good.

The Food Law of the Diet Revolution (s. XVIII–XIX)

The eighteenth century saw a consolidation of the bases of what has been called the *diet revolution*, the progress of which accelerated in the nineteenth century. The confluence of industrialization and the processes of urbanization led to a significant increase in food production and in the population groups in a position to accede to this food. Western countries advanced towards an abundance of food which, in time, would be indicated as one of the features of welfare societies.

A key element in this process was scientific-technological evolution. In the preindustrial era, access to food was very limited and existed in conditions of poor hygiene. The modern model of production and distribution would seek formulae for efficient mass production of food with the aid of scientific advances and the development of technologies in agriculture, livestock farming, and food processing. The physiocrats in France, the Royal Economic Societies in Spain, and the English Agricultural Council are some of the institutions in whose documentations are recorded inventions and discoveries that improved food (Fernandez 2009). Creators of new strains and varieties, designers of sewing machines or pumps, proposals for methods of rotation, all of these would contribute towards agriculture and livestock farming gradually acquiring an industrial profile. Relevant too

were the advances regarding efficiency in mass production of food, overcoming the poor hygienic conditions of previous eras.

The *food policies* were aimed fundamentally at guaranteeing adequate food production and distribution in accordance with the health and safety parameters of the time. This was an age of confidence in market self-regulation and reinforcement of the idea of the *tradable* nature of food.

There would be no impact on regulations as a result of those critical reflections upon some aspects of food production and distribution that appeared in this era. One of the criticisms of this movement was the tendency “to put cooking into scientific, rationalized, technical and differentiated categories,” coupled with proposals for a return to “natural cooking” (Teuteberg 1989). Similarly, the Lebensreformbewegung movement at the end of the nineteenth century accused modern agriculture of ruining “pure food” and endangering people’s health in the quest for profit.

The Nutritional Transition of the 1960s

The demographic crises traditionally caused by famine decreased significantly from the mid-nineteenth century onwards, although many of the problems associated with hunger and malnutrition persisted until the second half of the twentieth century (Barona 2012). Political tension, economic crises, protectionist trade barriers, or wars (national, regional, or international) continued to have a major impact upon food supply.

In the first half of the twentieth century, the demands of an emerging civil society led states to reorder some aspects of food systems to avoid famine. There also appeared what is known today as the *human approach* to the food issue, that is, a journey begun at the start of the century with the institution that preceded the FAO, and which would lead to the proclamation of the human right to food within the Universal Declaration of Human Rights of 1948 (art. 25). The legal articulation of this human right, in spite of such important documents as the Declaration of Rome of 1996 or the *Millennium Goals*, has

failed to go far enough. It is not clear where or how every person may claim their right to a food appropriate to their needs. Neither has the question been addressed, certainly, of how societies should act when the need to satisfy that right proves to be incompatible with the legal status of tradable as applicable to food today.

In the second half of the twentieth century, the nutritional transition in Western societies began to become apparent. As a consequence of the industrialization of agriculture and improvements in preservation and delivery systems, the availability of food improved significantly in certain areas of the world. However, two major concerns persist. One is food safety. There is an absence of rules and control mechanisms that assure food quality in light of new production practices and the increasing distances food travels. A second concern is what Levenstein would describe as *Paradox of Plenty*. The so-called Green Revolution (which was more an agrochemical revolution) was based on massive fertilization campaigns and intensive pest control programs. The marked improvement in certain crops appeared to be the solution to an old problem (that of food shortage), but it created other new ones, such as the displacement of traditional crop varieties and undesired effects upon human and animal health, and on the environment.

In response to these concerns there the last decades has developed a food law that is new in terms of its contents. Food law will be new as well with regard to the subjects who create it or participate in its creation and in the territorial scales – from local to international – where it will be applied.

Contemporary Laws and Regulatory Mechanisms on Food and Agriculture Research: Their Main Characteristics

As studies show, human intervention in food production and preparation has not yet totally transcended the organic-biological character of food, although many changes have occurred. Historically, this character has conditioned food consumption and its commercial possibilities, which

have depended on geographic and climatic location and on the existence of adequate systems for its conservation and transport. The contemporary chain connecting those who cultivate raw materials to consumers is now virtually free of limitations imposed by time, climate or distance. Furthermore, commercial networks on a planetary scale coexist with traditional food systems or those of new creation in which producers are very close to the consumer, or consumers themselves participate in the consumption of what they consume.

How has *food law* evolved? It is important to remember that regulatory mechanisms are imposed by those who *de ius* or *de facto* hold political power. Contemporary globalization has blurred states, which have ceded significant areas of power to supranational entities. The loss of the state as a reference has meant that *food law* has ceased to be a coherent whole, created in a constitutional legal framework that adopts as a reference a series of values and principles. This era is characterized by a legal phenomenon that has been described as *multilevel fragmentation*, and on each territorial level, the framework and the values upon which law is based are different.

A very powerful image when explaining food governance is the existence of different levels of governance, dominated by different actors and with different views and who compete among themselves for hegemony over the food system. Regulatory regimes are no longer purely “tools to resolve conflicts”; they are now an instrument which helps those who on one scale or another hold power in the market to maintain their status quo.

Explaining Contemporary Governance and Food Law as Competition Between Regulatory Regimes

Conventional, state-based regulation is no longer equipped to supervise those food supply chains that transcend its borders. Given the particularity of food as consumer good and its deep-rootedness in the traditions and cultures of countries, until a couple of decades ago, state laws had represented an obstacle to the economic integration of food markets. One example is the delicate

task of arbitration performed for decades by the Court of Justice of the (now) European Union in response to allegations of illegal restrictions in this area.

But diverse historical factors obliged a relaxation of this containment in the 1990s. A typical case is that of novel food, in other words, foodstuffs with limited market presence prior to the decade of the 1990s. Some states began the task of creating laws for these, while almost in parallel international regulatory mechanisms – some state based and others market based – would establish regulatory systems for these foods (especially for GM). As these are new products, the degree of entrenchment in the traditions and legal cultures of countries is lost, and it is difficult to counter the strength of laws created at supra-state levels. We are faced with competing regulatory regimes, which vary according to scale, economic base, legality, and to the attention they pay to health, safety, and the environment (Oosterveer 2007).

Regulatory Frameworks on an International Level

Since the aftermath of the Second World War – in some cases since before – some institutions committed to guarantee access to food, personal safety, the environment, or the development of peoples (FAO, WHO, UN, etc.). But in spite of their efforts, international governance of the agri-food sector has hindered by institutions like the WTO, which have exponentially multiplied what is regarded as the tradable character of food.

The WTO SPS agreement permits signatory states to establish sanitary or phytosanitary measures to obstruct international trade in their territory. But it limits these measures to those based upon the scientifically supported existence of risks to human, animal, or vegetable health. In those cases in which scientific backing is deemed insufficient, the WTO organs of appeal only admit provisional measures if these are interpreted as “reasonable.” Another significant agreement is the *TBT Agreement* (Agreement on Technical Barriers to Trade), which limits the possibility of establishing technical trade barriers such as the requirement of labeling, traceability,

or special measures in transport. These types of measures, in order to be legal, must be justifiable according to their necessity or proportionality in relation to quality, food safety, or the prevention of unfair practices.

And What Happens Within States and Regions?

Some state models, particularly in Europe, are reluctant to accept food trade which to some degree fails to take into account concerns such as the environment, ethics, or consumer protection beyond basic food safety. Thus, they implement risk assessment models which not only address *unchallenged scientific evidence*, but which also, for example, adopt different formulations of the precautionary principle. In other words, they employ certain risk management guidelines even when the latter have been scientifically adjudged to be uncertain. There is also the introduction of principles such as that of case by case and step by step, which involve greater controls than those allowing recourse to principles such as familiarity or substantial equivalence.

Another aspect in which state models and those of some regions (like the EU) differ over what prevails in the WTO is the fact that in decision-making with regard to risks they do not restrict themselves to scientifically evaluating the latter. There is a risk management phase in which other criteria are also taken into account. Certainly, the principal criterion is the scientific assessment of risks, but in decision-making, certain other criteria are borne in mind, such as the economic impact of decisions (effects on production, on sales, the consequences of the unwanted spread of some crops) and, among others, consumer rights and interests.

The European Union regulatory model was forged early in the twenty-first century, once member states had accepted as a common reference the scientific criterion of the EFSA (created in 2002). This unique scientific criterion is just one of the steps in a process in which decision-making with regard to GM food and feed or functional foods also reflects criteria of another nature. This is the case, for instance, of (EC)

Regulation 1924/2006 of the European Parliament and of the Council on nutrition and health claims made on foods. This Regulation establishes the creation of a single list of nutrition and health claims legally authorized for its use in the EU. This incorporation depends firstly on a scientific assessment performed by the EFSA but is also directed towards average consumers properly understanding the claims addressed to them and not being disoriented in the appropriate composition of their diet. Note that this far exceeds what the TBT agreement of the WTO considers “necessary” on labeling.

Another case worthy of mention is that of Regulations EC 1829/2003 on genetically modified food and feed and 1830/2003 concerning their traceability and labeling. Without prejudice to the stringent processes for evaluating risk to human health and the environment, the only products authorized are those that are not disadvantageous in relation to their conventional counterparts. Labeling is required to reflect not only if this is GM food but also any other *ethical concern* that consumers may find relevant.

The Way in Which Contemporary Law on Food and Agriculture Research Is Critically Reviewed

None of the current trends in food ethics question the fact that food is much more than just a tradable commodity. And some of their proposals highlight the importance of questioning the model of food governance prevailing at a global level. Under the pretext of harmonizing *common* concerns regarding trading in agro-food products – basically food safety – the tradable character of food has been reinforced, as well as the significant deregulation of the market. Is it possible to reconstruct governance and place limits on such extensive freedom in the market?

It is also interesting to observe how this trend has influenced the evolution of food science and technology. Although in their early stages, small- and medium-sized companies participated in research into and commercialization of agrobiotechnological products, the complex

legislative scenario has practically stripped the major life science corporations of competence. One might ask whether, perhaps for this reason, proposals of support for alternative food systems, compatible with a better distributed socioeconomic development, tend to offer resistance to scientific and technological innovation. Have innovations in food and agriculture led to this global food system, or are those who have misused these innovations the ones to blame?

After all, for centuries food and agricultural innovation have been accepted to confer competitive advantages upon those who control their trade. This does not seem compatible with fairness, sustainability, and all human beings enjoying access to food appropriate to their needs and desires. Yet, redirecting these scientific and technological advances towards respecting contemporary values is not a matter of technology regulation. It is perhaps time for humankind to decide if accepting the tradable character historically given to food is still adequate. The search for alternatives must also consider whether those who control the market should also dominate food governance.

Summary

This entry analyzes the ethics behind historical and contemporary food and agriculture law. Contemporary food law systems are very complex systems relating to a multitude of aspects of the production, distribution, and consumption of food, but to a certain extent, they share a common root with the food law that was already operating in ancient Rome. Humans do need food to survive, but that has not been considered a key issue for the food law. For centuries legal mechanisms have considered food as a tradable commodity, and this trend has also influenced the evolution of food science and technology. The main characteristics of contemporary laws and regulatory mechanisms on food and agriculture research are presented here as well as the way in which they are critically reviewed.

Cross-References

- [Biotechnology and Food Policy, Governance](#)
- [Functional Foods](#)

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Literature, Food, and Gender

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Synonyms

Communication; Consumption; Metaphor; Sex; Sexuality; Symbolism; Writing

Introduction

Food's presence in novels, poems, drama, and literary essays is about more than a realistic depiction of everyday human existence. Literary scholars and anthropologists alike agree that food acts like a language, communicating between cooks and eaters, authors and readers. In literary texts, then, food forms a second layer of signs that

reflect and sometimes complicate the words on the page. “Food is endlessly interpretable,” asserts the literary theorist Terry Eagleton (1998, p. 204), and anthropologist Carol M. Counihan explains why: just like language, “food is a product and mirror of the organization of society on the broadest and most intimate levels” (1999, p. 6). Food, with its ability to reflect social organization and bear endless interpretation, is an ideal tool for literary authors: a language of symbols within a language of words.

All cultures use food as a means to distinguish among categories of people (Counihan 1999). Different foods and food-related practices indicate membership in different classes, castes, races, and gender categories. Yet food has a special relationship to sex. Like sex, food is a biological necessity, but the acts associated with it are loaded with social meanings (Douglas 1999). Moreover, like sex, food brings what is outside the body into the body, and like sex food initiates a physical union with the outside world (Counihan 1999). Thus, food can represent the penetrability and penetrative capabilities of the human body, its ability to absorb and dominate others, and the body’s capacity, as mere matter, to be subsumed and controlled by others. Given the metaphorical as well as social links between food, gender, sex, and language, food becomes a highly effective way for literary authors to depict and explore gender roles in their work. The purpose of this entry is to examine the ways that literary authors use food and the practices related to it to depict both normative and non-normative modes of performing gender. In the texts discussed below, food symbolizes the relationship between characters and their own gendered bodies, and makes visible the social exchanges that occur between characters. This entry will discuss authors’ frequent association of particular foods with male and female genders in English and other literary traditions, as well as the gendered associations of serving, cooking, and eating food for men and women. Finally, it will examine the use of food in some literary texts

to depict characters’ resistance to normative gender roles, concluding that in some texts, to defy normative practices of eating, cooking, and serving is to defy the utility of the gendered codes that determine what it means to be an ethical agent in one’s community.

Reading Food’s Gendered Implications in Literary Texts

A scene from the British comedy *The Country Wife* (1701), by William Wycherley, shows how food can function on multiple levels of meaning to expose social and sexual tensions in a literary text. In Wycherley’s play, the seductive Mr. Horner treats Marjorie Pinchwife to a basket of oranges, an imported and relatively expensive fruit at this time. When Marjorie’s husband, Mr. Pinchwife, finds out what Horner has done, he responds angrily. Mr. Horner protests: “I have only given your [wife] an orange, sir!” (3.2.598), “Only squeezed my orange, sir,” replies Pinchwife, “and given it me again” (3.2.599-600). In this exchange, food means at least two things: the orange is “only” an orange – mere matter to be eaten and expelled – but it also symbolizes the body of Marjorie Pinchwife, “squeezed” by Horner, and therefore rendered sexually useless to her husband.

Although the orange in this scene represents a sexual exchange as well as an edible treat, it is important to emphasize that there is no universal code by which an orange, or indeed any other food, can be interpreted. The orange that symbolizes adventure and sexual transgression in Wycherley’s *The Country Wife*, for example, carries an almost opposite connotation of banality and social conformity in Jeanette Winterson’s novel *Oranges Are Not the Only Fruit* (1985) – a connotation that depends in part on the much lower cost and greater availability of oranges in the mid-twentieth century as compared to the 1700s. An orange might symbolize monstrosity in one text, because citrus fruits were notoriously difficult for early horticultural scientists to

classify (Freedberg 1992), or it might stand in for the fruits of Eden in the biblical book of Genesis as it does in Andrew Marvell's 1653-4 poem, "Bermudas" (Deutsch 2009). Instead of attempting to decipher the universal meanings of foods across all texts, this entry deals almost exclusively with texts in the British and North American literary traditions, recognizing that as a reflection of the cultures in which food is eaten, written, and shared, food's meaning depends heavily on context.

Masculine and Feminine Foods in Literature

Food has no universal code (Douglas 1999). Still, literary critics and anthropologists have ventured a few generalizations regarding the foods more often associated with women or men. Tomoko Aoyama writes that "while meat and offal tend to be categorized as masculine food in many cultures, sweets are usually considered feminine" (Aoyama 2008, p. 172), a division that the activist and author Carol J. Adams analyzes as symbolic of men's social power over both women and other animals (Adams 1990). Indeed, scenes of meat eating are frequently mobilized in literary texts to represent male characters' relationship to the power accorded them through their gender, especially power over women. In her fictional book *Sociable Letters*, the sixteenth-century author Margaret Cavendish describes a fight between a wealthy knight who loves beef and his wife, who thinks beef is a disgusting and unfashionable dish. When the lady C.C. orders a fashionable feast, the family cook, "knowing his Master loved ro[a]st beef," chooses to defer to male authority and serves a joint of beef. The knight and lady throw food and come to blows over the dish, but throughout this scene, beef represents the enduring power of both the "old country fashion" and the Master's power with which it is associated: "all the fine Quelquechose was overthrown in the hurly burly, but the Beef was so Substantial and Solid, as it strongly kept its place" (Cavendish 1997, p. 45). The beef – a type of meat that was already steeped in associations with the power of the British landed

class (Thirsk 2007) – then comes to represent Sir G.C.'s power over both his wife and his household.

In the letters of Margaret Cavendish, men are associated with the strong, substantial qualities of meat. Women in literary texts are also associated with meat; however, they are more frequently identified with the materiality of meat: its deadness, its exchangeability, its submission to the knife and jaw. This idea of women as edible is both old and widespread. Counihan notes a strong relation between women and food in general, across all societies, and she attributes this association primarily to women's reproductive capacities: "Women *are* food to the fetus and infant," notes Counihan, so that across cultures, "although women's feeding activities are undertaken with widely ranging amounts of autonomy, prestige and control, they are nonetheless universally linked to womanhood" (Counihan 1999, p. 63). Thus, foods associated with animal and plant reproduction, notably milk, eggs, and fruit, are often also foods associated with women's bodies and sexuality. In some cases foods represent the female body itself, especially its fertility, power, and physicality: in the novel, *Bailey's Café*, one character symbolically enacts the labor of another by cutting the pit out of a ripe plum (Naylor 1992), and in the 1959 play *A Raisin in the Sun* by Lorraine Hansberry, the character Ruth Younger feeds her husband scrambled eggs that foreshadow Ruth's decision to abort the child she is carrying (Matthews 2008).

In a device that is mimetic of the discharges of child birth and sexual arousal, women in literary works also sometimes drip or leak as a sign of their excessive consumption of food and sex, and these uncontainable liquids reflect the fear that women's sexuality cannot be disciplined to desire only within the boundaries of designated social institutions such as marriage (Kowaleski-Wallace 1997). In Christina Rossetti's poem *Goblin Market* (1862), for example, eating the fruit of "goblin men" (l.49) is a sexual initiation into "joys brides hope to have" (l.314). The young girl Laura trades a lock of hair for the chance to "suck[] their fruit globes fair or red" (l.128), but when she is denied more fruit, she

trudges home, “her pitcher dripping all the way” (1.263). The squeezed orange that is Marjorie Pinchwife and the dripping pitcher that is Laura are both symbolic of these female characters’ unruly flow toward men they haven’t married, and many other texts depict women who are literally overflowing with sexual energy and excess food. Petal Bear, a character in E. Annie Proulx’s novel *The Shipping News* (1993), overflows with both: the novel’s narrator reports that 4 days after giving birth, Petal “hailed a dress that wouldn’t easily show stains over her slack belly and her leaking breasts and went out to see what she could find” (p. 14). In Thomas Middleton’s play *A Chaste Maid in Cheapside* (1613), written almost four hundred years earlier, the out of control women celebrating the birth of Master and Mistress Allwit’s newest child gossip and gorge on sweets and alcohol until their bodies can hold nothing more: Mistress Allwit bears a daughter, while the rest of the women wet their seats (3.ii.220).

Cooking and Serving in Literature

As social exchanges, the practices associated with preparing and serving foods are perhaps even more reflexive of gendered social relations than are foods themselves. In British and North American literary traditions, the most positive representative of femininity and the soundest ethical agent is usually the woman who serves food to others instead of eating it herself. Likewise, a female character’s refusal to prepare and serve food to others is often paralleled by other antisocial and non-gender-normative behaviors such as greed for power, violence, and unbridled sexuality. *The Shipping News* (1993), contains an example of each kind of woman. Set in the late twentieth-century Newfoundland, Canada, the character Beety Buggit’s homemade bread and tea are part of a communal effort to morally and spiritually recuperate the novel’s male main character, Quoye. The narrator notes that Beety’s home contains not one but two tea kettles, each one constantly kept hot (p. 137), and her husband reports that “Beety makes bread every day” (p. 101).

The tea and toast of the Buggit house stand in stark contrast to the “never-used pot” (p. 23) and “sandwich cheese, streaked with green” that the novel associates with Quoye’s depraved ex-wife, Petal (p. 14). For Petal, the failure to nurture her family through food extends to other moral failures. She is a “bitch in high-heels” (p. 24) who cheats on her husband and tries to sell her two daughters into the sex trade. Her failure to nurture through tea and sandwiches in the kitchen parallels her failure to nurture in any other context, while the two raw eggs she gives to her husband one Christmas symbolize the two daughters she bears to Quoye (p. 307). Just as Quoye has to cook the eggs himself, he must raise the two girls on his own.

Scenes of women serving in literary works often acknowledge the power inherent in women’s control of the kitchen. In *Like Water for Chocolate* (1992), a novel by Louise Esquivel, the main character, Tita, cooks for Pedro, the man she loves but is not allowed to marry, and the dishes themselves are experiences of physical intimacy akin to sex. Through them, Tita enters Pedro’s body, so that normative sexual roles are reversed. Eating Tita’s food, “Pedro didn’t offer any resistance. He let Tita penetrate to the farthest corners of his being” (p. 52). Power in the kitchen, however, is tinged with danger: women who introduce the wrong foods into the bodies of their culinary dependants act as agents of incoherence within their family systems. In Tobias Smollett’s novel *The Expedition of Humphrey Clinker* (1771), for example, the dining table is the center of dysfunction in a British upper class house. The food Mrs. Baynard provides is “contrived...without one substantial article adapted to the satisfaction of an English appetite” (p. 295) and is one facet of the “cold, comfortless, and disgusting” habits of conspicuous consumption in her household. Poor eating has “preyed upon” her husband’s health, so that his wife seems to be consuming her husband through the very food she serves him (p. 290).

Men’s cooking in literary texts, like their association with meat, often reflects a cultural expectation of mastery over their bodies and the outside world. Male cooks, notes Aoyama, are the

culinary artists and “celebrated chefs” of the professional cooking world, while “women...are expected to take charge of the much less glamorous, unpaid work of everyday domestic cooking” (2008, p. 172). This distinction often holds in literary texts as well. Aoyama analyzes a series of modern Japanese works where men occupy a position of authority in the kitchen, teaching daughters or mistresses to cook the food they like (2008). Likewise, in *Sorry Fugu* (1989), a short story by the American author T.C. Boyle, a chef afraid of bad reviews from a young female restaurant critic reeducates her taste in an erotically-charged scene where he places buttery squid rings in her mouth with his own fingers (p. 17). For both male and female characters then, scenes of cooking and feeding in literary texts are struggles for power over and access to the body of another person. Women’s cooking is usually positive, but only if it is directed toward the nourishment and service of male bodies. Men’s cooking and serving, on the other hand, in general bears positive associations only when it can be viewed as an expression of mastery, either over the skill of cooking or over women who must be taught to correctly prepare and enjoy food. Quoyale’s response to Petal’s raw eggs is a case in point. He makes an omelet of them and hand-feeds it to his wife “as if she were a nestling bird,” an act that *The Shipping News* depicts not as meaningful nurture but as a symptom of Quoyale’s “pathetic” self-hate (p. 307).

Eating, Food Refusal, and the Gendered Contexts of Self-Control

For both male and female characters in literary texts, self-regulation of one’s appetite is a positive sign of self-control. Especially for female characters, the choice to refuse food, even to the point of starvation, can signify a character’s manipulation or even transcendence of the networks of social and sexual exchange that control them, while for male characters, mastery of the appetite symbolizes the self-mastery necessary for participation in the public sphere.

This entry has addressed the ways in which foods can symbolize sexual penetration because of food’s capacity to traverse the boundaries of the body. This metaphorical parallel makes food refusal an especially symbolic action for characters whose bodily autonomy has been explicitly violated through rape or abduction. In such scenarios, authors sometimes use the refusal to eat as their characters’ last bastion of control. Perhaps the best-known example of this kind is *Clarissa Harlowe*, the heroine of Samuel Richardson’s eighteenth-century epistolary novel *Clarissa* (1747-8). Self-starvation in *Clarissa* leads to transcendence of an unequal and disempowering patriarchal power structure, and self-denial is framed as self-determination (Ellman 1993). After being raped by her former suitor, Robert Lovelace, who has kidnapped and drugged her with a cup of adulterated tea, *Clarissa* symbolically closes the borders of her body, refusing to allow any sustenance to pass across the boundary of her mouth. She starves herself to death in order to gain release from the brutal and tyrannizing power that the men in her life – including her father, brother, and uncles as well as Lovelace – have exercised on her body. In the end she is a “lovely skeleton” (p. 1231), and Richardson implies a correlation between the thinness and lightness of her body and the density and intensity of her spirit and her faith in god.

Masculine Self-Control and Political Participation

Self-control in relation to food is linked to bodily autonomy for male characters as well. In many texts men’s gustatory self-control is a basic requirement for the right to own property and participate in civil discourse. In Henry David Thoreau’s series of biographical essays, *On Walden Pond* (1854), for example, the author associates political autonomy with control over his own food supply when he provides detailed descriptions of the production and processing of a field of beans that he will eventually harvest and trade for other food. As he works, Thoreau hears the sounds of military exercises in the distance

and links “the liberties of Massachusetts and of our fatherland” (p. 205) to his own labor in the field. Though Thoreau doesn’t eat the beans himself, they allow him to master his own food supply, assuring that the basic needs of his body are met. Thoreau links this bodily integrity – his ability to exchange his own labor for his own body-sustaining food – to the quest for intellectual and political autonomy that brought him to Walden Pond in the first place. He views the bodily autonomy he gains through exchanging his own labor for food as more valid than the purely intellectual autonomy pursued by “my contemporaries devoted to the fine arts in Boston or Rome” (p. 207).

For African-American male characters in the novels of Gloria Naylor, food figures the enormous social pressures under which non-white men operate in the public sphere. For Naylor’s men, the right to participate in the almost exclusively white world of business in the twentieth century can only be achieved through the most extreme acts of bodily self-control. In the novel *Linden Hills* (1985), an African-American business executive, Maxwell Smyth, finds that being “always immaculate and controlled” makes his race disappear in the eyes of others (p. 103). He polices his own diet with such minute attention that he no longer needs to defecate, since, “through a careful selection of solids and liquids, he was able to control not only the moment but the exact nature of the matter that had to bring him daily to that blue and white tiled room” (p. 105). In Naylor’s novels, as in Thoreau, controlled consumption is part of the performance of normative masculinity and is a necessary adjunct to participation in civil and professional life. For the men in Naylor’s novels, however, the labor required to force the black male body to appear as normative is a complex and potentially self-destructive undertaking, one that eventually, as in *Clarissa*, makes the body wholly disappear. Again, this self-destruction is symbolized through food: a quickly - warming glass of whiskey on the rocks symbolizes the way in which Maxwell’s apparent mastery of bodily integrity will lead, paradoxically, to the disintegration of his sense of self – rigid ice cubes melt into the

brown whiskey, weakening it, and Naylor writes that, “very soon, there would be nothing but a mouthful of watery bourbon that could be gotten rid of in a single swallow” (p. 111).

Queer Food

Refusing to eat, serve, or cook in gender-designated ways is a sign that a character refuses to abide by the social system in which they are enmeshed. Where the offending man or woman is punished, the literary work might be said to take a conservative approach to the relationship between gender, food, and ethics, as, for example, in the case of Petal Bear, the depraved wife of Quoye in *The Shipping News* (1993), whose gender nonconformity, expressed in part through her refusal to cook for her family, is definitely unethical and is punished accordingly by a violent death (p. 24).

But not all novels punish non-gender-normative relationships to food or associate them with unethical behavior. Refusing to eat according to the rules can be a powerful symbol of bodily self-determination for queer and other non-gender-normative characters. In Alison Lee’s short story *A Lesbian Appetite* (2002), the narrator insists that “healthy food” is the food of sex and pleasure (p. 170), whether that means eggplant or red velvet cake. Although teachers, doctors, and manipulative lovers try to feed the narrator food that they claim is morally and nutritionally superior, the value of food in this story is explicitly in the social relations that it enables. Cooking, eating, and lovemaking are linked in that all require sensuality, respect for the body, and reciprocity in order to be good for you.

Subverting the connection between dietary self-control and political personhood, Sherman Alexie’s short story *What You Pawn I Will Redeem* (2003) critiques the idea that men who eat and drink to nauseous excess are unworthy of self-determination and property ownership. The story follows Jackson Jackson, a homeless Spokane man who describes himself as “an alcoholic Indian with a busted stomach” (p. 178). After finding his grandmother’s powwow regalia in

a Seattle pawnshop, Jackson has between lunch-time and lunchtime to earn the \$999 he needs to buy it back. Instead, Jackson spends his money on liquor and McDonald's hamburgers that he promptly vomits up again. Drinking excessively, getting something for nothing, disrupting traffic, and dancing in a woman's clothes, Alexie's character defies the relationship between controlled consumption of foods, proper performance of gender, and social participation. What should be abjecting, antisocial, punishable behavior, however, results instead in reward: Alexie's character gets his grandmother's rain dance costume returned to him, and the story refuses to represent as natural the symbolic connection between men's gustatory self-control and their personal and political autonomy. The fact that this story relies in part on magical realism – the pawnshop is never in the same place twice – underscores how unusual its depiction is of a world where the good guys can eat and drink until they vomit without giving up their status as ethical agents.

Summary

Literary texts use food to represent and reflect on social practices around gender. While food is highly symbolic, foods are not universal symbols and must be interpreted within the historical and cultural context of the literary work in which they are found. Focusing especially within the British and North American Literary tradition, however, this entry draws some broad conclusions: women, who are associated through food with reproduction and nurture, must cook for and serve food to others in order to read as ethical agents. Conversely, women who refuse to cook are generally depicted as antisocial. Men's relationship to food reflects an expectation that men hold social and sexual power over others. Thus, men's association with meat reflects male power over women and animals. Moreover, men are required to control their own diets and the diets of others in order to qualify as autonomous individuals and participate in public life. This entry also examines the ways in which some texts resist these normative relationships between food and gender. Some works discussed

here expose the unsettling fact that self-starvation may be a female or black male character's only means of gaining bodily autonomy, while others disavow the links between uncontrolled eating and antisocial behavior for people of any gender.

Cross-References

- ▶ [Alcohol as Food and the Good Life](#)
- ▶ [Eating Disorders and Disturbed Eating](#)
- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Fasting](#)
- ▶ [Food and Class](#)
- ▶ [Hospitality and Food](#)
- ▶ [Kristeva and Food](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Pregnancy and Food](#)
- ▶ [Punishment and Food](#)
- ▶ [Race, Racial Identity, and Eating](#)
- ▶ [Taste, Distaste, and Food](#)

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Local and Regional Food Systems

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Synonyms

Civic agriculture; Community food security; Community food systems; Community-based

food systems; Food democracy; Food economies; Local food systems; Regional food systems; Sustainable food systems

Introduction

Local and regional food systems, sometimes referred to as “community food systems,” are collaborative networks that integrate sustainable food production, processing, distribution, consumption, and waste management in order to enhance the environmental, economic, and social health of a particular place. These networks reflect growing public interest in restoring the vital connections between agriculture, food, environment, and health. Local and regional food system networks engage a wide range of community partners in projects to promote more locally based, self-reliant food economies. Particular community projects and strategies vary, but most collaborations seek to increase resident participation to achieve one or more of the following goals (UC SAREP website: <http://www.sarep.ucdavis.edu/sfs/def/>):

- A stable base of family farms that use sustainable production practices and emphasize local inputs
- Marketing and processing practices that create more direct links between farmers and consumers
- Improved access by all community members to an adequate, affordable, nutritious diet
- Food and agriculture-related businesses that create jobs and recirculate financial capital within the community
- Improved living and working conditions for farm and food system labor
- Creation of food and agriculture policies that promote local or sustainable food production, processing, and consumption
- Adoption of dietary behaviors that reflect concern about individual, environmental, and community health

While no local and regional food system can claim to fully embrace or embody all the articulated goals, this framework provides an animating vision that spurs and sustains local action.

Pursuing diverse goals simultaneously creates a host of practical and ethical challenges. These challenges, described more fully below, include (1) finding price points that work for farmers while ensuring low-income consumers have access to healthy food and food system workers have decent wages and benefits; (2) confronting racial and class bias while forging practical solutions; and (3) reconciling the desire to stay true to deeply held values with the need to compromise in order to achieve incremental changes (Campbell et al. 2013). Negotiating trade-offs among various goals and competing values is integral to this public work.

History of the Local and Regional Food System Idea

The attempt to be holistic in conceiving and pursuing local food system work is intentional. It stems both from the effort of local communities to solve interconnected problems (rather than treating them in isolation) and from a desire to consider multiple values in designing food and agricultural systems, rather than elevating a single value – economic efficiency – above all others. Local food system promoters consider agriculture, food, health, and environment as interrelated aspects of a single system whose overall health requires intentional efforts to develop meaningful connections among all sectors. These ideas have deep intellectual roots and can now draw on lessons from decades of on-the-ground experimentation.

The concept of a sustainable, local community food system emerged both from intellectual criticism of the agro-industrial food system and from community-based efforts to promote environmentally enhancing forms of economic development. Early roots can be traced to the 1960s and 1970s, when concerns began to be raised about the environmental damage caused by chemically intensive agriculture. While organic or sustainable production practices were viewed by many as necessary alternatives, by themselves these changes did not deal with a range of serious social and economic issues also associated with

conventional food and agricultural practices. To address these, scholars and activists began to critique not only chemical regimes but also the effects of increasing scale, concentration of power, overreliance on specialized experts, and accounting systems, which allow large firms to internalize profits while externalizing costs to the larger community. These costs included serious problems, such as pollution, waste disposal, added burdens on welfare services, and deterioration of local tax bases. Driven by growth imperatives and by narrow economic conceptions of value and efficiency, conventional agriculture and food systems were viewed as sacrificing other values and priorities: healthy rural communities, a connection to place, the pleasures and nutrition associated with good food, husbandry, good work, decent wages and working conditions, local economies, and appropriate technologies.

More recently, climate change concerns are providing a further rationale for local and regional food systems. These concerns include the environmental costs of shipping food long distances and the vulnerability of centralized production systems to climate shifts. For others, such as those in the food sovereignty movement, the primary driver of re-localization is the desire to maintain democratic control over the local food supply in the face of global commodification.

Increasingly, local and regional food and agricultural systems are being viewed as an important path toward creating a more sustainable future (Feenstra and Wilkins 2009). Beginning in the 1970s and continuing until today, scholar-practitioners from fields as diverse as economics (Schumacher 1973), agriculture (Berry 1977), nutrition (Gussow 1978), and sociology (Lyson 2004), along with many others, have articulated an alternative model for food and agricultural systems. At the core of many of these visions was an emphasis on building local connections between consumers and producers, between producers and communities, and between urban and rural areas. Many began to see the work of building relationships and connections as the path toward greater community control over their economic destiny. For others, the motivation was to

reveal the human dimension underlying economic interactions, the beauty and the wisdom embodied in the natural world, and the possibilities of preserving what is unique within local and regional cultures, including the joy of sharing locally grown and lovingly prepared food.

Examples of Local Food System Strategies

Spurred by the intellectual critiques, and in some cases inspiring them, community-based projects to develop local and regional food systems began to emerge. Many local leaders are promoting local food systems as an economic development strategy that supports local farmers, protects landscapes, and provides consumers with access to healthy and nutritious food. Local projects have taken many forms; just a few are highlighted here to suggest some of the most widely shared activities and emerging institutional connections.

Many of the most well-known and widespread local food system projects have involved developing new markets that more directly link farmers and consumers. These include farmers' markets whose numbers increased nationally from 1,700 to more than 7,800 between 1994 and 2012 ([USDA Agricultural Marketing Service website, nd](#)), public food markets such as the Ferry Building in San Francisco or the Reading Terminal Market in Philadelphia, community-supported agriculture, and direct delivery options for institutions and retailers. Local leaders also created spaces for growing food such as community gardens or rooftop gardens, often in low-income neighborhoods where healthy food distribution was minimal.

In the late 1990s, nonprofits, school food service professionals, farmers, and community members realized that public schools could be another avenue through which to purchase and educate young people about local, sustainable foods (Feenstra and Ohmart 2012). The concept swept the nation as hundreds of schools and communities bought into the concept of healthier foods for their children and more economic security for regional farmers. According to the most

recent statistics, more than 38,629 schools in all 50 states are involved in farm-to-school programs with more than \$354 million in sales to regional farmers estimated ([National Farm to School Network website, nd](#)). The farm-to-school concept has now spread to other institutions such as colleges, universities, hospitals, prisons, and corporate cafeterias.

Noting that local governments have departments for necessities like housing and transportation, but none for food, many communities have begun to develop local or regional food policy councils. These councils are a means to institutionalize and better coordinate the newly emerging local food and agricultural activities and programs (Clancy et al. 2007; Harper et al. 2009). A number of cities, counties, and even states now maintain food policy councils or alliances (Centers for Disease Control [CDC] 2010). The idea is that citizens want to participate more actively in controlling the policies governing their own food systems and help to plan for the future food security for their communities.

The private sector has played a major role also. Restaurants and cafes, inspired by Alice Waters' example at Chez Panisse in Berkeley, California, began searching for top quality, locally grown, sustainable ingredients from regional farmers. "Foragers," restaurant staff whose job it is to find local growers and ranchers, visit nearby farms and ranches and build personal relationships with the restaurant. The "Chefs Collaborative," a nonprofit network of chefs that are "changing the sustainable food landscape using the power of connections, education and responsible buying decisions" ([Chefs Collaborative website, nd](#)), was formed in 1993 to support a growing group of restaurateurs committed to principles of environmental sustainability, seasonality, preserving diversity and traditional practices, and supporting local economies.

As one might expect with a movement that emphasizes locality, there is no single, overarching entity coordinating local food system efforts. However, in many states this work is supported by leading nonprofit organizations or university programs in the area of sustainable agriculture. In addition, local food activists have developed

extensive national and international networks to share ideas and information. National professional associations such as Agriculture and Human Values, the Rural Sociological Society, the Community Development Society, the American Dietetic Association, and the American Planning Association now provide ongoing opportunities for discussing and analyzing local and regional food systems.

Internationally, the Slow Food Movement has emphasized building connections between the plate and the planet to counter the influence of fast food on society. The US affiliate, Slow Food USA, now has over 250,000 supporters, 25,000 members, and 225 chapters nationwide. The organization advocates for food and farming policy that is good for the public, good for the planet, and good for farmers and workers ([Slow Food USA website, nd](#)).

While funding for local and regional food systems remains miniscule in comparison to the resources agribusiness can call upon, the past two decades have witnessed a significant uptick in both public and private foundation support. For example, the USDA has supported these efforts through agencies such as the Agricultural Marketing Service (farmers' markets); the Cooperative State Research, Education, and Extension Service (regional research); the Sustainable Agriculture Research and Education Program (sustainable agriculture and food systems); and the National Institute for Food and Agriculture (research and outreach on sustainable food systems and food security). Foundations such as the W.K. Kellogg Foundation, the Robert Wood Johnson Foundation, the California Endowment, the Jesse Smith Noyes Foundation, and many others have supported the development of local food systems and encouraged communities to work toward making them self-sustaining.

Key Values and Principles in Developing Local and Regional Food Systems

As in other forms of community development work, staying on course requires grounding and

deep commitment to underlying principles and values. Local food system leaders often cite their commitments to social, economic, and environmental justice and health, to democratic participation, to the importance of local wisdom and knowledge, to community spirit, and often to their own spiritual traditions. The challenge is holding true to these commitments to sustain work in tough times while remaining open to those who disagree or need pragmatic accommodations that may involve some compromise or trade-offs. Ultimately, this requires a form of public responsibility that can take many years to mature. While newcomers to communities can bring much to the table, there is no substitute for seasoned leadership with broad community connections, a nuanced understanding of local realities, and practical judgment. At the same time, it is important to continually broaden the circle to include the full range of community voices, taking advantage of previously untapped or underappreciated leadership.

A review of local and regional food system projects in California found that community leaders had to work hard to create new social, political, and economic spaces and connections (Feenstra 2002). In identifying key elements of successful work, local leaders mentioned three themes most frequently: (1) public participation, (2) partnerships, and (3) policy work. At their best, these processes become ways in which core values and principles are embedded in everyday practice.

Public Participation

Local and regional food system projects often create new physical spaces where people can gather, such as farmers' markets or community gardens. But beyond and behind many of these visible spaces, they work by creating multiple opportunities for individuals to come together and talk about food system concerns, visions, and activities. Gradually, participants in these discussions develop mutual awareness and trust, which can be difficult to build given the pull of competing values and priorities. Working through friction or around obstacles is inherent

in most projects, requiring patience, persistence, and skill in group processes and good communication. Some forms of public engagement are more immediately appealing, such as harvest fairs, school garden days, or other community events that create local celebrations. To stay engaged, the public must find the work not only meaningful but also fun and socially enriching. In all these ways, local food system leaders attempt to enact commitments to the value of democracy, sociability, and local culture.

Partnerships

Because food system work encompasses a wide range of goals, core groups frequently need to reach out to other individuals and organizations with complementary expertise or objectives. This can include a broad range of community activists interested in sustainability or social justice, but also many mainstream institutions, including traditional agricultural organizations like the Farm Bureau or Cooperative Extension. Universities often are important partners, providing research, access to grants, technical skills, or facilitation. Universities can also provide a broader vision that helps locate local projects in a bigger picture, helping participant see their work as part of something larger. Partnership development is the way key values such as community are expressed, based on the importance given to expanding connections and relationships beyond typical boundaries.

Policy Work

For values to have lasting impact, they must become embedded in policy and institutions. Local and regional food system projects address policy issues at multiple levels – from school districts to city, county, state, or national governments. For example, some local areas have inserted food policy into their county's General Plan, and others have worked on farmland protection policies or school lunch policies. This work sometimes involves community-organizing efforts, such that youth or low-income workers or others are given an opportunity to voice their concerns in the democratic process. Many local

areas find it important to articulate a compelling narrative that gives a rationale for emphasizing local food systems, while simultaneously working on better data to track the impact of initiatives.

Key Challenges Facing Local and Regional Food Systems

Working with a team of faculty and graduate students at UC Davis, a bibliography of peer-reviewed articles on local and regional food systems was recently compiled focusing on articles published since 2000 (UC SAREP website – community food system bibliography). The rapid growth of this literature (over 1,600 articles were identified), mimicking the growth in community interest, is reflective of the surge in interest in this field. But considerable challenges remain. An initial analysis of this literature, covering over 500 articles, identified three persistent strategic challenges facing community food system practitioners: (1) an economic challenge rooted in the difficulty of finding price points that work for farmers while ensuring low-income consumers have access to healthy food and food system workers have decent wages and benefits, (2) a social challenge to confront racial and class bias while forging practical solutions, and (3) a political challenge of reconciling “insider” and “outsider” strategies, the former emphasizing incremental reform and the latter systemic change (Campbell et al. 2013). These challenges resist simple solutions, posing difficult trade-offs between competing values.

Economic Challenge: Simultaneously Meeting the Needs of Farmers, Laborers, and Consumers

Research on local food systems brings into sharp relief the challenges and trade-offs involved in meeting the needs of different food system constituencies. The first challenge is finding a price point high enough to provide a stable and secure income for farmers but also low enough to ensure low-income consumers have access to healthy food.

Even organizations that deeply believe in both these goals have a hard time achieving them simultaneously. By eliminating middlemen, farmer's markets and other direct marketing schemes partially address this challenge. But research points to the need to supplement market-based solutions with public investments (Allen 2010; Campbell and Feenstra 2001).

A distinct but related lens on economic issues (and in turn race and class) involves labor, focusing on pay and working conditions for those who are employed to grow, harvest, process, market, distribute, and serve food. Since its inception, the sustainable agriculture movement has included activists motivated by concerns for farm workers. But it has also been critiqued by those who do not feel the movement is making enough progress in addressing farm or food system labor issues. Local food system initiatives face this same challenge but also the broader challenges of providing sustainable wages and benefits for workers across the food system, such as those in food-processing industries.

Among the motivations for re-localization of food is the preservation of small- and medium-scale family farms. Yet this motive runs up against some evidence suggesting that there are better working conditions for farm labor on large farms than on smaller, organic farms (Shreck et al. 2006). The larger point is that all farmers – big and small, organic or conventional, locally oriented or global – participate in the same economic system and face strong pressures to reduce labor costs and protect profit margins.

Social Challenge: Confronting Racial and Class Bias

Another persistent challenge identified in the literature on local food systems concerns racial and class bias. At issue is the degree to which re-localization reinforces or exacerbates existing racial and class privileges, rather than challenges or transforms existing race/class relations. Some question whether initiatives led predominantly by white, well-to-do leaders can effectively address the social and cultural concerns and ideas of

nonwhite and poor individuals and communities. At the same time, when food activists – mostly white and affluent – seek to expand healthy food options in low-income communities, they have been criticized for imposing their preference for minimally processed, local, and organic food on the rest of the population (Guthman 2011). Transcending these tensions will not be easy, but in many urban areas, social justice advocates have begun to demonstrate how people of color can take ownership of community food initiatives (Bonacich and Alimahomed-Wilson 2011).

Political Challenge: Reconciling Diverse Approaches to Creating Change

Local actors face additional trade-offs as they forge political strategies to create, implement, and support local food systems. For example, a common question is whether to pursue an “insider” or “outsider” strategy in making change, emphasizing reform at the margins or more fundamental systemic change (Campbell 2002). Some advocates work within mainstream institutions in order to encourage incremental adoption of short-term objectives, compromising in the process and risking co-optation. Others seek deeper institutional change or work to build alternative systems that attempt to preserve movement values in their purest forms, even at the cost of short-term gains. Still others argue for middle ground solutions that weave together these approaches. Finding common ground amidst strategic differences can be challenging, but not impossible (Stevenson et al. 2007).

Another way the political challenge is framed in the literature has to do with the scale at which change strategies are focused. One approach emphasizes a bottom-up approach using local initiative and action to carve out alternatives in light of existing constraints and opportunities (Campbell and Feenstra 2001). A more top-down approach emphasizes political and economic reform on broader scales in order to create greater space in which local reform can advance. The skills and proclivities for working at these

different scales are distinct, and while some local practitioners have succeeded in aligning themselves with larger coalitions, knitting the two together effectively can be elusive.

Summary

Local and regional food systems have emerged as one important strategy for restoring the vital connections between agriculture, food, environment, and health. They have emerged from local efforts to regain control over the relationship to the food and agricultural system and as a response to the costs to communities of the agri-industrial model of food and agriculture. The projects emphasize public participation, partnerships, policy work, and the principles and values associated with sustainability, equity, and democracy. In pursuing these values and goals, local food system projects must navigate persistent strategic challenges which often require difficult trade-offs among values. These include finding strategies that simultaneously benefit farmers and low-income consumers, dealing with race and class issues given the predominant white and well-to-do constituency in many local projects, and striking the right political balance between incremental reform at the local level and pursuit of broader systemic changes. A growing body of research is tracking the work and more intentional partnerships between academics and practitioners are needed to capitalize on local experience to generate usable knowledge.

Cross-References

- [Agriculture of the Middle](#)
- [Civic Agriculture](#)
- [Community-Supported Agriculture](#)
- [Environmental Justice and Food](#)
- [Farmers' Markets](#)
- [Food and Class](#)
- [Food and Place](#)
- [Food Security](#)

- [Local and Regional Food Systems](#)
- [Public Institutional Foodservice](#)
- [Race, Racial Identity, and Eating](#)
- [Urban Agriculture](#)

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Local Food Procurement

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Synonyms

100-mile diet; Local eating; Local food sourcing; Locavore; Locavore diet; Locavore lifestyle; Locavore philosophy

Introduction

The term “locavore” was coined in 2005 by Jessica Prentice, who, along with Sage Van Wing and Dede Sampson, made a commitment to eat only food sourced within a 100-mile radius of their homes in Northern California. This effort was publicized in the media during World Environment Day in San Francisco and subsequently entered the lexicon. While this might have been the first documented use of the term “locavore,” the idea – and necessity – of eating a local diet was not a new one.

The seeds of the locavore movement may have been planted over a long period of time, but it was not until the first decade of the twenty-first century that people became very focused on the localized provenance of their food, due to increased interest in environmental ethics, health, and economic concerns and a movement away from corporate farms and industrialization in foods. When this movement was given a name and parameters in 2005, it grew steadily as a lifestyle – embraced wholeheartedly by some who sought to only source their food locally – but also grew as a lifestyle choice of those who shifted more of their food procurement to local sources. Proponents claimed that local sourcing kept money in the local economy, supported community, and promoted personal and environmental health through the conscious and sustainable business practices of the farmers and other food businesses that locavores supported. However, critics were quick to point to new studies that indicated that local food procurement was not the only or best way to ensure sound environmental practices, that a localized food system could denigrate food security in both America and around the world, and that accepting and working with a more globalized food system could do better at addressing the initial concerns of early locavores.

While the locavore movement as it was conceived in 2005 is still in its infancy, many of those who consider themselves locavores look at local food choices as more of a philosophy to source from smaller, environmentally conscious farms, who adhere to similar values as themselves.

History

Before industrialization and advances in refrigeration, mass production, food preservation, and transportation, food was traditionally sourced locally. The first permanent European settlers in northeastern North America brought with them some provisions. However, soon an agricultural community model was established, and early settlers fed themselves from personal farms or items that were traded or sold within growing villages and cities. By the 1600s the settlers had access to certain exotics such as tea, sugar, and coffee as standard fare in their diets due to their early availability via global trade routes, and by the 1700s a number of nonlocal products were fully integrated with the otherwise mostly locally sourced diet.

By the 1800s, large urban areas were growing in the north, creating low-income slums with little access to fresh produce. Farm animals, such as dairy cows, were still being kept within city limits, but the conditions were increasingly unsanitary leading to spoilage and illness. Outside of prime harvest times, hearty vegetables like cabbage and foods preserved in salt or vinegar provided the main sustenance for urban dwellers. Beyond urban centers, small towns and cities were established as the hub for a mainly agricultural society. A wide variety of pickling and preservation methods were used to keep local produce edible for months past harvest, which were developed by early settlers or brought over mainly from Europe. However, those who could afford it expanded their diet with foods imported from other parts of the country and from around the world.

There was continual migration from Europe, forcibly from Africa, and by 1820 the start of a wave from Asia – all which increased exponentially in the ensuing decades with the advent of steamships. With the greater number of people from many nationalities arriving, food and cultural migration and influences began in earnest, as did the introduction of many new flavors, ingredients, dishes, and preservation techniques – expanding what was grown locally and also increasing the demand for nonlocal goods.

Technological advances greatly affected foodways by the mid-1800s as well. The invention of the cast-iron stove meant that open fires were no longer required to cook, and the increasing availability of refrigeration – both via transportation methods and at home – meant that fresh foods could travel far from their place of origin and stay edible longer, setting the stage for perishables to be sourced from farther away and making local food less important to the average American's diet. Industries were soon being built around large-scale canning, which began to centralize the farming of certain produce and further lower people's reliance upon locally grown food. Also, this marked a shift from taste and flavor being the primary area where food was judged to safety and uniformity becoming more important (Roudot 2004). The late 1800s brought even cheaper sugar to North America, and the invention of "milk chocolate" – or candy made with cocoa powder from Central America and soon farther afield – led to even greater popularity of this nonlocal exotic and expanded the global nature of the average American's perception of food culture.

Further technological advances in food preservation, refrigeration, and sanitation spurred cultural changes, and women in both urban and rural areas were more likely to purchase staples like pickles, cheese, and canned goods at a store rather than make them at home. Fewer homes had personal gardens as well, and in 1920, the urban population of the country exceeded the rural population for the first time, marking the tipping point for the movement toward industrialized food and away from subsistence farming and local food sourcing (Swanson 2012).

The two world wars also greatly influenced the movement away from locally sourced products and toward convenience foods. With more women in the workforce, less time was spent on food preparation. Packaged foods like TV dinners became popular, and the introduction of fast-food chains made eating out more accessible. Agriculture moved toward monoculture as well, all of which helped push culinary trends toward flavor homogenization, and after the rationing of the Second World War, feeding people food of

uniform quality and safety became the highest priority, rather than flavor (Roudot 2004). Common household activities from a generation prior, such as canning, pickling, and cheese-making, were becoming increasingly rare in urban and suburban homes, and the supermarket offerings of these products were mass-produced.

The “counterculture” movement of the 1960s reinvigorated some interest in gardening, vegetarianism, and food co-ops and brought attention to the potential health risks of the red meat- and preservative-heavy meals that had become prevalent in American homes, while Rachel Carson’s 1962 book *Silent Spring* highlighted the environmental consequences of the rampant pesticide usage of large-scale farms and, by extension, industrial farming practices. Also important was the 1973 film *Soylent Green* which presented a dystopian future where all foods were processed and the environment was ravaged, causing death, disease, and war among humans. These factors influenced a shift in culinary tastes that gained speed in the 1970s when Alice Waters began to popularize “Californian” cuisine that emphasized fresh, seasonal ingredients and traditional preparation methods. The growing movement began to evolve into a resurgence in interest in specialty cheeses, gardening, and small-farm production, further spurred by Wendell Berry’s 1974 World’s Fair speech and subsequent publications against industrial farming, which helped carry the “back-to-the-land” movement into the 1980s (Paxon 2010). Berry continues to be an inspiration to those interested in local food sourcing and still frequently speaks about his perceived ills of capitalism and the industrialization of the food system.

By the 1980s, the number of small and “organic” farms, long in decline, was starting to increase, and the first federal laws standardizing organic practices were passed in 1990. Consumer demand for organic food grew steadily, in part because of the desire to be more environmentally responsible and also more conscious about what chemicals one was exposed to. However, as the organic food industry expanded, some of the negative characteristics of industrialized conventional food remained. Organic foods were being

grown and shipped from around the world, where regulation was lax or faulty and large conventional food producers were using technically organic practices while perpetuating some of the same business models that turned consumers away from industrialized conventional farming in the first place, such as crop monoculture and ultrapasteurization of dairy. The locavore movement grew out of the disillusionment of those who supported the organic movement but wanted more transparency and control over their food sources. Many who sought organic food for ideological reasons wanted to support growers of produce and livestock in ways that were more aligned with their values.

This cultural shift was apparent in a small but active portion of the population into the new millennium. As the first rumblings of the recession were being felt early in the 2000s, so rose the interest in family gardens, in small-scale farming, and in skills like preserving and cheese-making – and by 2005 the term “locavore” was coined. Culinary culture also saw the birth and popularization of the international “Slow Food” movement – akin to Alice Waters’s Californian cuisine and founded by the Italian Carlo Petrini – that called for a return to locally grown, seasonal, traditional, and sustainable food sourcing and preparation.

This relatively small but significant shift in food trends in the mid-2000s occurred in part because it became increasingly easier to source local food. Since the US Department of Agriculture (USDA) began publishing the national directory of farmer’s markets in 1994, the number of farmer’s markets had more than quadrupled nationally by 2012 (USDA 2012). With these new markets came new customers interested in fresh, high-quality, local produce and products made from ingredients – and by people – they felt they could trust. In addition, these markets provided a literal marketplace where small and start-up businesses could sell products made from local ingredients and begin to gain customers relatively easily, with no need for distributors or middlemen. Add to this the recession that began in 2007 and an increase in unemployment and underemployment. This spurred people looking

to cut costs to grow their own food, resulting in a spike of sales of seeds in 2007 and 43 million American households growing their own food by 2009 (Sanburn 2011). An additional effect of this was the increased understanding of the seasonality of produce and the experience of the improved taste of fresh, garden-grown goods. This also led to the continued growth of people starting food-based businesses (Casserly 2012); a greater cultural interest in homemade, local, and high-quality food products; and more people trying traditional preserving and pickling methods to continue to eat locally sourced food out of season, thereby reducing the need for imported produce.

Barbara Kingsolver's 2007 nonfiction book *Animal Vegetable Miracle*, which detailed a year in the life of her family in Southern Appalachia growing or otherwise locally sourcing nearly all of their food, also did much to publicize the new locavore movement during this period. This served as an inspiration for others to make efforts to do the same and spawned numerous locavore experiments, blogs, and articles. At the same time, more investigative works such as 2008's *In Defense of Food* by Michael Pollan took a hard look at the realities of North America's food system and its negative implications on the population's health and the environment, inspiring people to source their meat and produce from local farmers who offered more transparency in their methods of production.

These popular books, coupled with the recession and the exponential growth of farmer's markets, inspired more people to embrace the idea of "locavorism" – resulting in "locavore" being named the "Word of the Year" by the Oxford American Dictionary in 2007. While this is an emerging field, there have been a number of studies done in the past decade that look at the claims of a local diet and the perceived ills of the conventional food system. The arguments presented for locavorism were numerous and included lowering environmental impact in transporting and refrigerating goods to local communities, rather than farther afield; lessening the use of chemicals, as many of these farmers practiced organic or otherwise low- or no-chemical methods of planting, harvesting, fertilization, and

pest prevention; and keeping money in the local economy by supporting small farmers. Those who supported a more global approach to food sourcing countered the above arguments with alternate research and noted the increasing world population and need to address food security and the ingrained presence of certain exotic foods in the Western culture as a major defense of a globally sourced diet.

Environmental Impact

The increase in interest for locally sourced food has inevitably sparked debate about the true benefits of eating a local diet. One of the primary arguments for a local diet was a desire for food that did not need to be shipped far, thus limiting fossil fuels used to transport goods all over the country or world, and to keep it cool during that journey. A study in 2005 demonstrated how far a typical meal might travel to get to one's plate: Rich Pirog, the associate director of the Leopold Center for Sustainable Agriculture at Iowa State University, showed how the ingredients that go into a cup of strawberry yogurt traveled 2,211 miles just to reach the processing plant – not including how far it travels to get to the consumer's fridge or the fossil fuels used to keep it cool on this journey. This study, and others like it, sparked supporters of local food who noted that it was relatively easy to agree that yogurt made from local milk, sweetened with local fruit and honey, would have a smaller "carbon footprint," defined as a total set of greenhouse gas emissions caused by the production of a product. However, using the carbon footprint calculation as the main reason to buy locally sourced food brought up counterarguments and questions about the feasibility of this calculation for every food consumed. Detractors noted that shipping by rail is known to be ten times more efficient than by truck, which can alter the carbon footprint of a product depending on its transportation method and not its place of provenance, while others noted that the overall environmental cost of food transportation was negligible compared to other environmental concerns (McWilliams

2009). However, Pirog along with a group of researchers also conducted a study that analyzed the average distance traveled of a variety of produce items to Iowa markets, looking at local, regional, and conventional transportation methods. They found that conventional methods took food on a 1,500-mile ride – versus less than fifty for locally sourced items – and emitted 4–17 times more carbon dioxide. A comparable study in Canada found that replacing imported food with similar local products would be a benefit to the environment equivalent to taking more than 16,000 cars off the road (DeWeertd 2011). However, this debate brought up important alternatives for lowering the carbon footprint of food sourcing without insisting upon only eating foods sourced within a specific radius, thereby causing some strict proponents of locavorism to rethink their reliance on carbon footprint calculation as the sole basis for their dietary choices.

Economic Issues

Those who support a focus on local eating have also begun emphasizing its economic and community-building aspects noting that buying local keeps more money in the local economy. The movement for local eating has evolved to a larger “buy local” philosophy, with many studies asserting the economic benefit of supporting smaller, local farms and food-related businesses. One example notes that 68 % of money spent at a locally owned business stays within the immediate economy, while only 43 % of money spent at a chain store remains local (Frazier 2007). Thus, many locavores argue that with food costs making up 10–20 % of the average American’s budget, keeping that money within the local community helps spur the economy while also helping environmental and personal health.

A recent USDA study also states that expanding local food systems increases employment and income in a community and can, but does not necessarily, reduce greenhouse gas emission (Martines et al. 2010). Although, the same study also noted insufficient evidence to support whether local food access improves diet or food security.

However, it is exactly that notion of food security and cost that critics of locavorism cite when they declare this lifestyle both unsustainable on a global scale and elitist. Many local food proponents admit that locally sourced food often costs more than its industrial counterpart and acknowledge that barriers such as access to farmer’s markets and other retail operations offering local produce can also limit access to consumers of lower socioeconomic status. Their counterargument is to fight the governmental system that overwhelmingly supports corporate food systems through subsidies, regulations, and other federal programs while making it easier to produce, distribute, and sell local, organic produce to a wider consumer base.

There has been a growing middle ground between ardent locavores and local food critics, most apparent with the increasing number of food co-ops around the country. Supporters of food co-ops, or groups who cooperatively buy food – often focusing upon organic, local, and sustainably sourced items – are attempting to address the issues of food insecurity and claims of elitism. The co-ops are often member owned or run and offer prices at a distinct discount from traditional grocery stores through methods such as bulk and seasonal purchases.

Proponents of locavorism cite these co-ops, weekly farmer’s markets, cheese-making classes, and other community activities as having capital beyond monetary or environmental. The social benefits of the growing consciousness about local food sourcing are often cited as a positive effect beyond environmental or economic, by making a place for social activity and promoting a sense of community (Brown and Miller 2008). Additionally, proponents note that creating community through local food sourcing also has the potential to help shift broader support to change the systems in place that make conventional and mass-produced foods cheaper, organic, and sustainable and foods from smaller farms more expensive. These social benefits also often extend to help mitigate the sometimes increased price of locally sourced food by creating systems where, for example, more affluent community members help subsidize CSA subscriptions for lower-income members.

Feasibility for Larger Implementation

Another argument against strictly local eating is the feasibility of this as an option to feed the world's growing population. The 2012 book *Locavore's Dilemma: In Praise of the 10,000-Mile Diet* argued that our industrialized and globally sourcing food system actually created many positive changes in food policy – such as stronger safety measures and greater food security – and that a strictly local diet would increase food costs, poverty, and food insecurity (Desrochers and Hiroko 2012).

James E. McWilliams also makes a similar argument in his 2009 book *Just Food: Where Locavores Get It Wrong and How We Can Truly Eat Responsibly*. He notes that using food miles as the main delineator for a sustainable diet does little to solve the larger environmental, health, and economic issues that locavores and concerned consumers alike cite as important to consider in sourcing food. His research asserts that with the world's population projected to reach 9.5 billion people by 2050, there needs to be realistic and environmentally sustainable methods of feeding this vast number. However, McWilliams and others who believe that there are ways to improve our current food system without advocating for a strictly localized one argue that the answer to this dire global problem lies in part in using a combination of approaches including technological advances, like responsible genetically modified crops that can help crops be more productive and disease-resistant; moving toward large-scale agriculture that is more environmentally healthy; and exploring new avenues for nutrition, such as aquaculture. These more holistic approaches toward global food sustainability can embrace many of the same values that a locavore prizes – food that is kinder to the environment, produced using transparent methods, and financially supports all members of food production and not primarily executives of large corporations – but does so in a manner that is realistic about the needs of the growing world population and the existing global nature of food production.

Locavores counter the argument that locally sourced food cannot feed the world's population,

however, with statistics that note that global food systems already produce enough nutrition to feed 12 billion people, and that the issue lies not in greater production, but rather helping food get to those who are in need. They assert that a localized system with more smaller farms closer to large population centers can help address malnutrition (Philpott 2012). Further, local sourcing proponents posit that keeping arable land in the hands of local farmers and away from large corporations can only help food security and economic stability.

Food Culture

Even model locavores such as Barbara Kingsolver allowed a few specific exotic foods in her family's otherwise locally sourced diet, reflecting the ingrained nature of certain nonlocal ingredients in the Western food culture. For centuries foods such as sugar, coffee, chocolate, spices, and tea have been imported from around the world and have become a vital part of many Westerner's daily food rituals. Almost all ardent locavores who have written about and publicized their food sourcing methods in an effort to support this lifestyle and its values have made exceptions for one or more products. These exceptions often are made with caveats for fair-trade procurement – defined as a trading partnership, often certified by an outside nonprofit governing agency, that ensures that the rights of marginalized producers and workers are paid fairly and that the goods themselves are produced in an environmentally and economically sustainable manner. Locavores who support fair-trade exotic products argue that items like coffee or chocolate are a desired and necessary part of their diet and, by only buying certified fair-trade items, they can ensure that the values they ascribe to the rest of their locally sourced diet are present in the procurement of a few exotic items as well.

Critics of a strictly locavore diet, however, would be quick to point out the hypocrisy of these exceptions, noting that once any nonlocal product is deemed an allowable item, it dilutes the strict locavore's stated philosophy. Further,

these critics cite the global nature of food culture in general and assert that greater global understanding is found through exploring other culture through edibles.

Summary

While there is no one definition of locavorism, most accept this lifestyle to be defined as one that only sources food from within a specified radius of 100–500 miles and generally ascribes to organic and environmentally conscious farming practices. Those in favor of a local diet cite many positive attributes, such as a food system that is kinder to the environment and keeps money in the local economy, and consider locavorism more of a holistic philosophy of consuming products from smaller, more environmentally conscious purveyors. Critics note the increased cost and potential food insecurity that can result from a focus on only locally sourced goods, as well as the ingrained nature of exotics in the Western diet. However, most supporters and even some critics of a strict locavore diet do admit that there are many positive aspects to sourcing more food from smaller, often local, farms and other purveyors whose philosophy about environmental and economic issues are more consumer focused. Thus, while a locavore is focused on distance-based food sourcing, the increased interest and studies surrounding this lifestyle have expanded its definition to include a broader set of values rather than a rigid lifestyle to which one strictly adheres.

Cross-References

- [Farmers' Markets](#)
- [Local and Regional Food Systems](#)
- [Slow Food](#)

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Marketing, Food Policy, Diet, and Health

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Synonyms

Ethical principles; Food choice; Food marketing;
Utility theory

Introduction

This entry explores the interface between food ethics, food marketing, and food policy, in the context of diet and health. It confronts two ethical issues which arise within this subject: whether food marketing can be held responsible for poor diets; and the extent to which it is legitimate for food policies to restrict consumer food choice on grounds of diet and health. The essay considers how, respectively, ethical principles and economic theory can help.

Ethical Principles and Economic Theory

Ben Mepham (2008) has articulated three principles as a guide to ethical decisions. These are the following:

- **Respect for Well-Being**

This is derived from the utilitarian theory of the British nineteenth-century political economists Jeremy Bentham and John Stuart Mill and epitomized by the famous quotation “The greatest good for the greatest number.”

- **Respect for Autonomy (Freedom and Choice)**

This is associated with the deontological theory developed by eighteenth-century philosopher Immanuel Kant and concerns the rights and duties we have as individuals with respect to other individuals – “Do unto others what you would have done to yourself.”

- **Respect for Justice (Fairness)**

Originated by the contemporary American philosopher, John Rawls, and based on the concept of an egalitarian society with equal rights and opportunities.

Economic theory has developed the utilitarian principle into a utility theory of consumption, in which it is assumed that consumers take product purchase decisions, constrained by budgets, designed to maximize the utility (satisfaction) they derived from consumption. The relationship between different patterns of product choice and utility is known as the consumer’s “utility function.” For a consumer to be able to maximize his utility in this sense, the principle of autonomy needs to apply – he needs “freedom to choose” – and issues around consumer food choice are central to the debate over diet and health.

Food Marketing

First, distinguish between the use of the word “marketing” to describe a subject of study, and as a description of the activity of a company “communicating” with its customers (Ritson 1997a). There are many definitions for the former, but most would embrace reference to “accurately identifying and meeting customer [in our case, food consumers] needs and wants”; and superficially at least there is nothing unethical about that. It is the second use of the word that has brought “marketing” a bad press, where the term is often regarded as synonymous with advertising and other methods of product promotion. Defenders of marketing in this sense would argue that marketing communication simply allows food consumers to make informed choices to meet their needs and wants – a sort of win-win situation in which food consumers are able, in terms of economics, to maximize their well-being and food suppliers their profitability. Under this interpretation, marketing becomes consistent with the argument of Adam Smith (1776) that “in pursuing his own advantage” every individual was “led by an invisible hand to promote an end which was not part of his intention” namely to “render the annual revenue of society as great as it could be.”

The counterargument on the merits of marketing is summarized by Tim Jackson (2009) as:

.. people are being persuaded to spend money we don't have, on things we don't need, to create impression that won't last, on people we don't care about.

As far as having a negative effect on food consumers, this can be narrowed down to two main concerns. The first is marketing communication which includes messages which mislead consumers over health aspects of a food product. This can vary, at one extreme, from what one could describe as merely subtle use of words (e.g., “90 % fat free”) to, at the other, bold and unsubstantiated health claims. “Informing the consumer” becomes “misinforming the consumer.”

Second is where “informing” merges into “persuasion.” The dictionary definition of

“persuade” is “to cause a person to believe or do something by reasoning with him.” In this case “do something” is consume more (or perhaps sometimes less) of a particular food, and “reasoning” is marketing communication. Marketing is no longer simply identifying consumer “needs and wants,” but creating them. There are two reasons why this might have a negative impact on consumers. First, as the effect is to increase the range of consumer needs and wants, then people with limited income are more likely to be dissatisfied over the pattern of consumption they actually achieve. Second, and more fundamentally, is if consumers are “persuaded” to develop less healthy diets.

Take the current interest in “sugary drinks” as an example. Sponsorship of sporting events can be argued as misleading by linking the product with a healthy lifestyle; and much of advertising and promotion can be regarded as attempting to persuade people to consume more of the product. One only has to invoke the principle of well-being to be able to judge marketing communication as “unethical” in these circumstances. Similarly, within economic theory, the consumer’s utility function is being manipulated, and the decisions he takes can no longer be regarded as maximizing his utility (satisfaction) for a given income.

Socially Responsible Marketing

Returning however to the textbook definition, with marketing regarded as genuinely merely identifying and meeting consumer needs and wants, not creating them, then things become more complicated. What if consumers do want (if not need!) sugary drinks and are fully aware of the dietary implications? At this point the debate switches from the negative of “unethical” to the positive of what is “ethical marketing” relative to diet and health. A school of thought has developed that argues that responsible food businesses have a duty to restrict access for consumers to “unhealthy” foods, and this practice has become known as “choice editing.” This in turn raises the question of whether a conflict now arises between

the ethical principles of well-being and autonomy, and phrases such as “consumer sovereignty” and “freedom of choice” appear. Defenders of choice editing would argue:

- It is an illusion to imply that consumers have unlimited choice. Decisions are taken throughout the supply chain which restrict the choice of food products available to consumers. In these circumstances, the health and well-being of consumers should become paramount in determining the food basket from which people can “freely choose.”
- Consumers are faced with a bewildering array of thousands of products on the supermarket shelves. Even the socially responsible, well-informed, health-aware consumer will find it almost impossible to achieve the mix of products that they would choose with perfect information and unlimited time. Choice editing will therefore help them to move toward optimum decisions or, in terms of economic theory, to maximize their utility.
- Most people are not well informed about the relationship between their diets and their health. Choice editing is one way of forcing them to take the consumption decisions which they would if better informed.
- The issue is complicated because the term choice editing is used perhaps more often to refer to aspects of production rather than consumption by, for example, restricting access to products from non-sustainable sources or only stocking “fair trade” products. However, consumer research suggests that many people would quite like the food industry to assume the function of ensuring that they are “responsible” food consumers. This particularly relates to sustainability and production methods, but may extend to healthy diets.

The head of marketing and procurement for Sodexo UK, a large food service company, comments (Hanson 2012):

We develop recipes . . . to embed the principles of a healthy and balanced diet into all our dishes. This includes removing trans fats, reducing levels of salt, fat and sugar, and increasing fruit and vegetable content. . .

Ultimately, choice editing is not about imposing. . . A critical mass of committed food buyers and producers, who are able and prepared to make choices on behalf of consumers . . . will help to convert favourite foodie cravings into commitments and actions that support a more sustainable future.

Encouraging as this is, it is arguable that choice editing can only nibble at the margins of the problem of diet and health. Many food firms will not adopt it; and large areas of food consumption will be unaffected. This leads to the view that Governments should step in.

Policy Intervention

Although in principle choice editing could be accused of being in conflict with consumer autonomy, for the reasons listed above, “responsible” food marketing of this kind appears to attract almost universal public and political support. In contrast, Government policies which attempt to restrict consumer food choice are sometimes subject to sustained hostility.

Public policies which merely “encourage” consumers to adopt healthy diets – such as the British 5-a-day fruit and vegetable campaign – are usually welcomed. Even here, though, not everyone agrees. The British Minister of Education is reported ([Mail Online 2012](#)) as describing the British Food Standards Agency as having gone from:

a body that was responsible for governing the safety of food to one that became yet another meddling and nanny organisation that was telling us what we should eat and in what proportion.

There are of course more explicit ways for a policy to limit consumer food choice. A recent example was the announcement by New York Mayor Michael Bloomberg that he planned to prohibit the sale of sugary drinks in containers above a certain size, in restaurants, movie theaters, and street carts. The Center for Consumer Freedom echoed that of the British Minister of Education, with an advertisement in the New York Times depicting the Mayor as a Nanny under the caption:

New Yorkers need a Mayor, not a Nanny... What next? Limits on the width of a pizza slice, size of a hamburger or amount of cream cheese on your bagel.

The American Beverage Association called the plan “ridiculously unreasonable, unsound, and incongruous” ([Mail Online 2012](#)) and subsequently sued the City, challenging the ban.

On the eve of the implementation of the policy, a State Supreme Court judge ruled the ban as invalid, describing it as “arbitrary and capricious” ([CNBC 2013](#)).

“Arbitrary and capricious” is not too far from “unethical.” Can ethical principles and economic theory therefore help in deciding whether there are limits to the legitimacy of food policy methods which seek to improve diets?

First, policies to combat marketing techniques which include false or misleading messages over the health and nutritional properties of a food product are generally regarded as legitimate. Legislation on this in the European Union ([Davies 2013](#)) has recently become much more stringent, with health claims requiring prior approval from the European Food Safety Authority (EFSA) on the basis of scientific evidence submitted by the food manufacturer. (Previously, in the UK, it was up to local Food Standards Officers to challenge the wording of claims on foods already on the market.) Although consumer groups have welcomed this development, some food businesses regard the degree of evidence required by EFSA as too high. They argue that “qualified health claims” should be allowed. Claims are rejected if they rely simply on “good evidence of a relationship” or “the balance of evidence,” whereas food firms argue that the interests of consumers would be better served if the manufacturer was allowed to inform consumers of potential health benefits even when there was less certainty over the validity of the claim. In the USA, conditional claims that clearly state the level of uncertainty and the nature of the research behind the claim are permitted ([Food Ethics Council 2009](#)).

Second, there is an important contribution of economics to the debate – the concept of social costs (or benefits), sometimes known as “externalities.” Poor diet has an adverse impact on the

well-being of everyone, via the increased national costs of health care, not just the well-being of the obese, and policies to improve diets are often justified on these grounds, probably because of a reluctance to become involved in the debate over consumer choice. Economists have developed techniques for attempting to value the social cost of poor diets; it then becomes a matter of judgment within ethics as to whether the positive benefit under the principle of well-being overrides the impact on consumer autonomy under the application of ethical principles.

Third, as already mentioned in the context of choice editing, the case for altering patterns of food consumption in the interests of food consumers themselves is influenced by consumer awareness. The economic theory of utility would regard it as legitimate to attempt to alter diets if there was evidence that consumers were misinformed about the consequences to themselves of their consumption decisions. The problem arises when the concept of the “acceptability” of risks is explored. With respect to food consumption, people regard some food safety risks as “more acceptable” than others.

This problem is particularly prevalent when considering the health risks of food consumer autonomy. There appears to be an inverse relationship between the food safety risks which concern consumers and the aspects of food safety which scientific evidence implies should concern consumers. To illustrate this, the first Chairman of the British Food Standards Agency, John Krebs, provided estimates of deaths per year in the UK related to diet and food, listed in [Table 1](#).

Contrast that with the outcome of a consumer survey ([Table 2](#)) which asked “Which of these concern you about food safety?”

This of course does not resolve the question of the extent to which “lack of concern” reflects poor understanding of food-related health risks, but there is now a substantial body of evidence (e.g., [Miles et al. 2003](#); [Ritson and Kuznesof 2006](#)) that people find risks perceived of as technologically driven and uncontrollable as “less acceptable” than those perceived as “more natural” and subject to personal control.

Marketing, Food Policy, Diet, and Health,
Table 1 Estimate of annual UK deaths related to food and diet

Risk	Number of deaths
Cardiovascular disease	73,000
Cancer	34,000
Food-borne illnesses	50
Food allergy	20
vCJD	15
Genetic modification, pesticides, growth hormones	0

Marketing, Food Policy, Diet, and Health,
Table 2 Proportion of consumers expressing concern over food risks

Risk	Proportion expressing concern
Risk of chronic disease due to poor diet	25 %
Food poisoning	48 %
BSE “mad cow disease/CJD”	52 %
New food technology (e.g., genetic modification)	60 %
Chemicals in food (e.g., pesticide residues)	78 %

Source: Tables prepared from data cited in Ritson and Kuznesof (2006)

Thus, the application of ethical principles and economic theory justifies food policies aimed at altering patterns of food consumption on the grounds of the social cost of diet induced poor health; and also where there is evidence that consumers are not fully aware of the health implications of their diets, or are being misled by marketing messages, and would take different purchase decisions if better informed. However, the fact that consumers regard some food-related health risks as “more acceptable” than others raises a difficult ethical issue. The economic theory of utility assumes that the well-informed consumer is the best judge of his own utility.

Food Policy Mechanisms

Finally, are some methods of altering patterns of food consumption “more ethical” than others?

Here there is a useful distinction that economists make which may help, at least to clarify thinking on the subject. The distinction is between methods which alter utility functions (crudely, what people want to do) and methods which alter what people consume, without altering their utility functions.

Methods which alter utility functions are, primarily, “education” and “social marketing.” Education – making people better informed about the impact of their consumption decisions – is fine and passes the economics test above. With social marketing – the application of marketing techniques to achieve public interest objectives – we return to the issue of whether it “informs” or “persuades.” Is it ethical to persuade consumers to eat more healthily, even if their change in diet is for reasons other than knowing it is more healthy, if it is “unethical” for food firms to persuade people to choose unhealthy diets? In other words, it is perhaps not the marketing technique which is unethical, but the motive behind it. (The end justifies the means.)

There are a variety of ways in which a policy can alter diets without altering utility functions. The most prominent are price manipulation and restricted availability. In principle, a price policy aimed at improving diets could operate either by taxing unhealthy foods or by subsidizing healthy ones. The former is sometimes called a “fat tax,” which can conveniently refer either to the food being taxed or the problem being addressed by the policy. To many people, subsidizing healthy foods is much more acceptable – it is seen as not impacting on consumer choice. Yet taxpayers lose with subsidies and gain with taxes, and economists would argue that it is legitimate to raise the price of those food products which contribute to the social cost of health care caused by bad diets (externalities). This money could be used to finance health campaigns or to subsidize fruit and vegetables. A recent report from Sustain (2013) advocates a tax on sugary drinks primarily on the grounds that the money raised could be used to fund health awareness programs

There is another reason why taxing unhealthy foods can be defended; other Government policies can have a substantial impact upon the level

and balance of food prices. For example, for many years the Common Agricultural Policy (CAP) of the European Union, as a consequence of its measures aimed at supporting prices received by farmers, is estimated to have increased food prices in the UK on average by the equivalent of a 15 % tax (Ritson 1997b). More fundamentally, however, the price raising effect of the policy varied from product to product, pushing up most the consumer prices of dairy products and sugar – equivalent to a tax of 100 % or more, with little or no price raising effect on fruit and vegetables. Quite by accident, the CAP was a kind of “fat tax,” pitched at a level well in excess of any now suggested as a way of improving diets. It seems difficult to argue that it is ethical to push up food prices for low-income consumers in order to aid farming, but not to improve the well-being of consumers themselves.

Summary

- “Choice editing,” with the objective of improving consumer diets, can be justified as “ethical marketing.”
- Policy intervention is legitimate when it is used to combat misleading (or “unethical”) marketing with respect to health claims, though questions have been raised over the degree of evidence required before it is in the interest of consumers to inform them of a potential health benefit.
- The benefit to society as a whole of better diets, because of the externalities associated with the health consequences of poor diets, will normally allow the principle of well-being to override that of autonomy as a justification for policy intervention.
- Food policy intervention is justified where there is evidence that consumers are unaware of the degree to which there is a link between their diets and their health. This need not necessarily be restricted to policies which attempt to “educate” the public to take more informed decisions, but could include policies which simply have the effect of altering patterns of food consumption.

- The fact that consumers find some food-related health risks “more acceptable” than others raises a difficult ethical issue – to what extent has society a responsibility for “forcing” consumers to alter their diets in a way that society believes to be in their own interests?
- Finally, this entry leaves the reader with two further questions. Is there an ethical distinction between subsidizing good food and taxing bad food? And is there a distinction in food ethics between altering what people want to do – even if this involves “persuading them” – and altering what they do, without altering what they want to do?

Cross-References

- ▶ [Corporate Social Responsibility and Food](#)
- ▶ [Ethical Matrix and Agriculture](#)
- ▶ [Food and Health Policy](#)
- ▶ [Food Ethics and Policies](#)
- ▶ [Informed Food Choice](#)
- ▶ [Obesity and Consumer Choice](#)

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Meat: Ethical Considerations

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Synonyms

Omnivorism

Introduction

Meat eating has been the norm in most human societies. Historically, it has not had many defenders, but this is probably because few thought that it was in need of defense. In the contemporary philosophical literature, however, the pro-vegetarian arguments are usually taken to be quite strong, and omnivores have assumed the burden of proof. The purpose of this entry is to explain this shift by surveying the various frameworks that offer neutral or positive moral assessments of meat eating. After briefly tracing the evolution of these frameworks from the ancient to modern period, the entry outlines the three most prominent contemporary approaches. It closes by considering possibilities for future research.

Historical Perspective

Consider the perspective found at the beginning of the Hebrew Bible:

²⁶ Then God said, 'Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth.' ²⁷ So God created humankind in his image, in the image of God he created them; male and female he created them. ²⁸ God blessed them, and God said to them, 'Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth' (Genesis 1:26–28, NRSV).

The salient points are (a) that all humans are categorically different from all animals and (b) that the world has a certain order. Moreover, although the text permits weaker readings, it does seem that humans' status as image bearers justifies – or at least explains – humans' having dominion and the authority to subdue.

The points above, however, do not lead to the view that meat eating is morally unproblematic; to reach that conclusion, there must be a claim about the purpose (or purposes) for which animals were created. And in what immediately follows, the text indicates that they are not for food:

²⁹ God said, 'See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food. ³⁰ And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life, I have given every green plant for food.' And it was so.

So subduing and having dominion over animals does *not* include consuming them, and in the view of some later biblical authors, there are hints that the world will be restored to this vegetarian order (see, e.g., Isaiah 11:6–9). Nevertheless, it remains the case that the biblical tradition sanctions the consumption of meat: God says that all creatures are for Noah's use after the flood (Genesis 9:1–3), and when Christians have reflected on this issue, they have used it not only

to defend omnivorism but to put it forward as a good. For example, John Calvin (1509–1564), the French theologian and pastor, wrote these words:

For it is an insupportable tyranny, when God, the Creator of all things, has laid open to us the earth and the air, in order that we may thence take food as from his storehouse, for these to be shut up from us by mortal man, who is not able to create even a snail or a fly (1554/1847, pp. 291–292).

Moreover, Jesus probably ate lamb (see Luke 22:14ff. in the light of Exodus 12:3) and fish (Luke 24:41–43), and he encouraged others to do so (Matthew 15:34–37; John 21:5–14). In Acts, God tells the Apostle Peter to kill and eat animals in a vision (Acts 10:9–16); Paul insists that there is nothing wrong with eating meat sacrificed to idols (1 Corinthians 10:25–26); and the author of 1 Timothy contends that abstaining from certain foods – i.e., meat – is evidence of having fallen away from the faith (1 Timothy 4:1–5). In the background, of course, are commitments to there being a fundamental difference between humans and animals, a divinely ordained teleology, and some form of theological voluntarism. Between these three factors, it is not hard to understand why there was no felt need to defend meat eating.

God moves into the background in Aristotle's work (384–322 BCE), who maintained that humans are the *rational* animals; the “lower” animals, by contrast, lack this faculty (*Nichomachean Ethics* VI.2). The upshot of the difference is that man is ruled by reason, whereas animals are subject to “despotic” rule – i.e., they are governed by appetite rather than intellect. Aristotle goes on to claim that animals are better off if ruled by beings that *are* rational (*Politics* I.V). The capacity hierarchy apparently justifies a corresponding paternalistic hierarchy, though it remains to be shown that animals ought to be killed for food. This issue is addressed by the second part of his view – i.e., his natural teleology:

...a bare livelihood, seems to be given by nature herself to all, both when they are first born, and when they are grown up. [...] So] we may infer that, after the birth of animals, plants exist for their sake,

and that the other animals exist for the sake of man, the tame for use and food, the wild, if not all at least the greater part of them, for food, and for the provision of clothing and various instruments. Now if nature makes nothing incomplete, and nothing in vain, the inference must be that she has made all animals for the sake of man (*Politics* I.VIII).

So, since Aristotle thinks that the good for any being is found in actualizing its potential, he can conclude that the good for animals is found in their being used for our purposes.

This view faces two serious objections. The first is that even if Aristotle is right about there being a capacity hierarchy, it is not clear why this justifies a moral hierarchy based on species membership: it is very hard to identify a morally significant property (or even a plausible constellation of morally significant properties) had by *all* human beings – not just normal adults – that is not shared by at least some animals. The second is that, since Darwin, natural teleology has fallen on hard times. To be made respectable again, it will have to be naturalized. However, it seems very unlikely that it will be naturalized in a way that would provide the ethical implications that Aristotle needs. It is possible to view many of the historical discussions of meat eating as grappling – albeit implicitly – with one or the other of these problems.

Take, for example, a related view in the Greek Stoic Chrysippus (c. 279–206 BCE) (via Porphyry (234–c. 305) and with his help):

But, by Jupiter, the assertion of Chrysippus is considered by our opponents to be very probable, that the Gods made us for the sake of themselves, and for the sake of each other, and that they made animals for the sake of us; horses, indeed, in order that they might assist us in battle, dogs, that they might hunt with us, and leopards, bears, and lions, for the sake of exercising our fortitude. But the hog (for here the pleasantries of Chrysippus is most delightful) was not made for any other purpose than to be sacrificed; and God mingled soul, as if it were salt, with the flesh of this animal, that he might procure for us excellent food (Bk 3, §20; 1823, p. 114).

Chrysippus' approach is also teleological – hogs are literally *for* humans – but he reverts to the overtly theological position that Aristotle eschewed. Chrysippus does not explain why

hogs are fit for this purpose, and Porphyry – an advocate for vegetarianism – does not press him on this point. Instead, and in keeping with his earlier criticisms of Zeno of Citium (c. 334–262 BCE), Porphyry takes the lacuna to be an account of how slaughtering an animal could serve its interests. Charitably, he goes on to quote Carneades (214–c. 129 BCE.) – a member and eventual head of Plato’s Academy – who apparently maintained that “everything which is produced by nature, is benefitted when it obtains the end to which it is adapted, and for which it was generated” (Bk 3, §20). With Carneades’ theory in hand, Chrysippus can insist that hogs *are* benefitted by their slaughter, since that is the purpose for which they were made. Thus he offers Aristotle’s view with one major revision: there is no need to naturalize teleology, since it can be explained by way of divine intentions. However, Chrysippus doesn’t provide the resources to explain why the moral hierarchy tracks species membership; there is nothing like image bearing in his account. And – at least in the extant fragments – Chrysippus offers no contrast between humans and animals that can account for them.

In *Summa Contra Gentiles*, Saint Thomas Aquinas (1225–1274) – an influential Dominican priest, theologian, and philosopher – supplements Chrysippus’ teleological framework with the claim that animals have no intrinsic value:

...the very way in which the intellectual creature was made, according as it is master of its acts, demands providential care whereby this creature may provide for itself, on its own behalf; while the way in which other things were created, things which have no dominion over their acts, shows this fact, that they are cared for, not for their own sake, but as subordinated to others. That which is moved only by another being has the formal character of an instrument, but that which acts of itself has the essential character of a principal agent. Now, an instrument is not valued for its own sake, but as useful to a principal agent. Hence it must be that all the careful work that is devoted to instruments is actually done for the sake of the agent, as for an end, but what is done for the principal agent, either by himself or by another, is for his own sake, because he is the principal agent. Therefore, intellectual creatures are so controlled by God, as objects of care for their own sakes; while other

creatures are subordinated, as it were, to the rational creatures. [...] Through these considerations we refute the error of those who claim that it is a sin for man to kill brute animals. For animals are ordered to man’s use in the natural course of things, according to divine providence. Consequently, man uses them without any injustice, either by killing them or by employing them in any other way (Bk III, Pt II, Chap. CXII, § I and XII).

Aquinas’ account removes the pressure to explain why the moral hierarchy tracks species membership; likewise, it relieves the need to explain why God fashioned them for human use. If animals have only extrinsic worth, then the arbitrariness of God’s decision is not obviously problematic: if something had to serve human ends, there is no reason why animals shouldn’t.

Aquinas doesn’t offer much of an argument for the view that animals have no intrinsic value, but the demand for one probably would not have seemed reasonable. A tacit commitment to the no-intrinsic-value view appears to be present even among some of the ancient vegetarians, a number of whom gave up meat based on their belief in reincarnation. Take, for example, a passage from *The Lives and Opinions of Eminent Philosophers*, where Diogenes Laertius (third century) quotes Xenophanes (sixth to fifth century BCE) on Pythagoras (c. 570–c. 490 BCE):

They say that once as passing by he saw
A dog severely beaten, he did pity him,
And spoke as follows to the man who beat him:
“Stop now, and beat him not; since in his body,
Abides the soul of a dear friend of mine,
Whose voice I recognized as he was crying”
(8.20).

At least in this passage, there is no suggestion that the dog would deserve moral consideration if it *weren’t* occupied by Pythagoras’ “dear friend.” Likewise, in fragment 137, Empedocles (c. 495–435 BCE) criticizes the slaughter of animals for food:

Each slits the throat and in his halls prepares
A horrible repast. Thus too the son
Seizes the father, children the mother seize,
And reave of life and eath [*sic*] their own dear
flesh (1908, p. 62).

Here too, the challenge to meat eating is premised on these animals once having been people (indeed, the *relatives* of the meat eaters) – and *not* on anything about them as, e.g., sentient beings in virtue of which eating them constitutes “a horrible repast.” The assumption that animals have no intrinsic value appears to be just beneath the surface. Moreover, this is not an assumption unique to the ancient and medieval worlds: it’s also present in the work of René Descartes (1596–1650) and Immanuel Kant (1724–1804). Descartes was convinced of this because he maintained that animals are mere automata; he insisted that “[his] opinion is not so much cruel to animals as indulgent to human beings [...] since it absolves them from the suspicion of crime when they eat or kill animals” (1649/1991, p. 366). Kant, by contrast, did not deny that animals have mental lives, but he did believe (a) that their mental lives are impoverished relative to humans’ and (b) that this difference explains why animals have only extrinsic worth:

The fact that the human being can have the representation “I” raises him infinitely above all the other beings on earth. By this he is a person [...] that is, a being altogether different in rank and dignity from things, such as irrational animals, with which one may deal and dispose at one’s discretion (1798/2006, p. 15).

(The above passage permits a reading on which animals have so little value, relative to that had by humans, that it is permissible to treat them as though they had no intrinsic value at all. However, it’s clear from other portions of Kant’s corpus that only rational beings have intrinsic value, and – at least among earth’s inhabitants – he takes rationality to be a uniquely human characteristic).

The Contemporary Conversation

In the contemporary literature on animal ethics, it is difficult to find philosophers who maintain either (a) that each and every human has some morally significant property that distinguishes her from any animal or (b) that in the objective order of things, animals exist for humans.

Moreover, contemporary philosophers are much more likely to the possession of properties like *being able to feel pain* or *having desires* to be sufficient for having some sort of moral standing. So, meat eaters end up on the defensive (see, e.g., Nozick (1983), Cohen (2004), and Williams (2006)).

There are three general approaches among those who make a case for the rightness of meat eating. Those taking the first maintain that meat eating is either compatible with or required by the moral theories that are usually used to defend vegetarianism. Those opting for the second offer contractualist defenses of speciesism. Those electing for the third argue from general considerations relating to the good of the environment as a whole.

Steven Davis (2003) represents the first approach. He argues that given the “least harm” principle that features in certain arguments for vegetarianism (cf. Frey (1983)), the best diet is one that includes the flesh of large herbivores. The problem with drawing the pro-vegetarian conclusion, he contends, is that it ignores the animal lives lost as a result of modern agricultural technology, e.g., field mice being crushed by the combines that harvest grain. These casualties could be reduced by allowing large ruminants to forage in and fertilize the fields, minimizing the number of times that machinery had to be deployed. Based on his calculations, this would cut the total loss of animal life by one third. Matheny (2003) raises some hard questions about the numbers in Davis’ argument, but the calculation-oriented strategy may still have merit. Consider the hordes of animals that would not exist were it not for the animal husbandry that supports the omnivorous diet. Frederick Ferré (1986) argues that if those practices could be altered so that animals lived subjectively pleasant lives (to include painless deaths), then the sheer numbers will undermine any straightforward utilitarian argument against killing them for food. Indeed, once these changes have been made, there may even be some obligation to consume them.

R. G. Frey (1983) takes a line like Ferré’s, although he seems to think that meat eating is

morally permissible before any reforms have taken place. From a utilitarian perspective, he claims, there is an obligation to abstain from meat eating only if so doing spares some animals from the suffering they would otherwise experience. But the existence of moral vegetarians makes no discernible difference to the practices of the meat industry: the sheer scale of modern factory farming makes it insensitive to the behavior of what is, ultimately, a very small number of consumers. So, there is no obligation to abstain from meat eating. Moreover, he argues that even utilitarians are free to say that, while animal lives are valuable, they are not as valuable as human lives, and hence it is possible for significant human interests to outweigh significant costs to animals. (He makes this last point in a defense of vivisection, but it clearly applies to omnivorism as well. Jack Weir (1991) uses roughly this idea to defend meat eating for those persons for whom a vegetarian diet would pose health risks.)

Finally, feminists like Kathryn Paxton George (1990, 2000) argue that the condemnation of speciesism involves an implicit commitment to sexism. She contends that pro-vegetarian arguments make assumptions about human dietary needs that are accurate only for adult males. Moreover, they assume – falsely – that people have equal access to the means to secure healthy vegetarian meals. She insists, therefore, that nothing more than “semivegetarianism” is morally required of women, children, the elderly, and those disadvantaged economically or by poor health.

The second group of philosophers is composed of contractualists. Roger Scruton (2006), for example, says that animals have no moral standing because they cannot participate in “the ongoing dialogue which binds the moral community” (59). To participate in this dialogue, a being needs to be – *inter alia* – self-conscious, free, rational, able to exhibit sympathy, able to accept obligations, and able to insist on their fulfillment (25–32). Scruton grants that this excludes those humans at the margins, but he replies that “it is part of human virtue to acknowledge human life as sacrosanct, to recoil from treating other humans, however hopeless their life may seem to us, as merely disposable” (43). Peter

Carruthers (1992, 2011) takes a similar contractualist line, but he responds to the “humans at the margins” problem differently. He points out that, given the purpose of the social contract, rational agents will not select rules that are not psychologically supportable, since that would undermine the ability of the contract to provide a safe, stable environment. And given people’s strong attachments to infants, the senile elderly, and the severely mentally handicapped, they will not choose rules that do not presuppose moral standing for such individuals.

Scruton and Carruthers agree that contractors ought to give animals some moral consideration; what they deny is that contractors have reason to grant animals full moral standing. For Scruton, this is because animal death is involved in the realization of certain human goods – hunting, cooking, feasting, etc. (cf. Scruton (2004)). For Carruthers, this is because almost all animals do not have phenomenally consciousness mental states – a conclusion that follows from a number of higher-order theories of phenomenal consciousness; see Carruthers (2005) for details – and hence do not feel pain.

On the contemporary accounts considered thus far, a being’s moral standing depends entirely on its intrinsic (nonrelational) properties. (For utilitarians, that value depends on sentience; for contractualists, it depends on a combination of sentience and various sophisticated cognitive capacities.) The final strategy for defending omnivorism abandons this assumption, opting instead for an extrinsic (relational) theory of moral standing. Take, for example, J. Baird Callicott’s (1989) “biosocial” view, which updates Aldo Leopold’s (1949) land ethic. On this view:

...the good of the community as a whole, serves as a standard for the assessment of the relative value and relative ordering of its constitutive parts and therefore provides a means of adjudicating the often mutually contradictory demands of the parts considered separately for equal consideration (25).

Here, the “community as a whole” refers to the entire ecosystem. On this approach, everything in the ecosystem has moral standing, but a thing’s having moral standing does not entail that it

should not be killed. Hence, there is nothing inherently wrong with killing animals, since it is sometimes in the best interest of the environment to do so (e.g., if the deer population is out of control, then culling the herd might be warranted). The biosocial view says, “not vegetables instead of animals, but organically as opposed to mechanico-chemically produced food” (36). (Pollan (2006) seems to have a similar position in mind when he discusses the role of animals in sustainable, small-scale agriculture. For an alternative theory of moral standing that combines intrinsic and extrinsic criteria, see Warren (1997).)

Future Work

Meat eating needs little defense, if any, given that (a) all humans are categorically different from all animals and (b) the world has an objective order. However, since neither assumption enjoys the philosophical currency it once did, the proponents of meat eating face an uphill battle. Their best bet is probably some combination of the contractualist approach and the environmental perspective. The contractualist approach offers a principled way of denying animals’ moral standing, but it leaves open questions about the extent of the moral consideration that it is appropriate to extend to them. Callicott’s biosocial view might provide the resources to resolve this problem. After all, science is only beginning to map the complicated webs of ecological dependencies that the planet supports. Should it turn out that the environment will fare best if people have a diet that includes the flesh of humanely and sustainably raised animals, then people may have a self-interested reason to be omnivores. And that, of course, is precisely the sort of reason to which contractors would attend.

Summary

This entry presents historical and contemporary perspectives on the ethics of meat eating. Many of the historical voices suppose (a) that all humans are categorically different from all animals and/or (b) that the world has an objective order. However,

most contemporary philosophers do not make either assumption, so those who defend meat eating tend to take one of three approaches. Those taking the first maintain that omnivorism is either compatible with or required by the moral theories that are usually used to defend vegetarianism. Those opting for the second offer contractualist defenses of speciesism. Those electing for the third give an environmental perspective.

Cross-References

- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Eating, Feeding and the Human Life Cycle](#)
- [Hunting](#)
- [Meat: Ethical Considerations](#)
- [Vegetarianism](#)

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Medicalization of Eating and Feeding

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Synonyms

Medical epistemology; Medical power; Normalization; Pathologization

Introduction

A variety of developments over the past century have produced the conditions in which eating and feeding are transformed from practices embedded in social or cultural relations into explicit medical practices. The rise of medical science, expansion of the pharmaceutical and food industries, escalating concern over diet-related diseases and conditions, and growing anxiety over infant and childhood development have contributed to a process of medicalization.

Medicalization is a sociological concept that analyzes the expansion of medical terminology, interventions, or practitioners into areas of the life that were previously considered outside the medical sphere. For instance, undereating has previously been defined using theological language, as an act of fasting demonstrating a saintly character. Such practices are now understood through medical terms of anorexia nervosa, malnutrition, or general diagnoses such as “eating disorders not otherwise specified.” Individuals engaged in under- or overeating practices are increasingly defined by medical concepts (anorexia nervosa and obesity) and treated in medical spaces (hospitals, clinics, or rehabilitation centers) through medical interventions (pharmaceuticals, surgery, psychotherapy, or dietary regimens). Likewise, infant feeding (breast or formula) is understood as a practice that requires monitoring and instruction from medical practitioners. Further, eating in general is progressively invested with medical significance. Foods and diets are touted as possessing a therapeutic- or health-enhancing capacity that indicates an individual's or population's present and future health.

Due to the high regard for, and influence of, medical science in the West, medicalization studies primarily focus on Western contexts. Medicalization does have an impact on non-Western societies and the developing world; however, its influence emanates from Western biomedicine, industries, and policies. There is important work to be done in examining the process of medicalization in non-Western contexts; however, this entry is limited to the Western context (Hunt 1999).

To analyze the medicalization of eating and feeding, it is important to first sketch the theoretical and historical background of medicalization as a sociological concept. The relationship between eating and medicine is extensive. In order to focus the discussion, three examples are used – undereating, overeating, and infant feeding. This background focuses the analysis of the forces driving the medicalization of eating and feeding. Finally, in elaborating the influences and consequences of the medicalization of eating and feeding, some of the central ethical implications are identified and discussed.

Background

The concept of medicalization developed out of the anti-psychiatry critique in the 1960s. Thomas Szasz's *The Myth of Mental Illness* (2010), originally published in 1961, argues that psychiatry obscures the social with the psychological, transforming social behaviors and problems into symptoms of diseases that require medical intervention. According to Szasz, mental illnesses such as schizophrenia or attention deficit hyperactivity disorder are medical creations that mask the social problems individuals experience and justify coercive medical treatment. The work of Michel Foucault, Ivan Illich, Irving Zola, and Peter Conrad has been influential in advancing the concept of medicalization.

Philosophical debates over medical epistemology (theories of knowledge) play an important role in critical and ethical analysis of medicine (Stempsey 2006; Schwab 2012). Medicalization is associated with social constructionist theories of knowledge (Conrad 2007). Rather than contending the existence of a biological or pathological reality, medicalization studies argue that complex yet contingent social and cultural forces determine certain medical knowledge, categories, and definitions. Importantly, the social constructionist theory of knowledge does not argue that the phenomena described by medical categories are mere fictions, but that the medical categories are artificial constructs that misrepresent social phenomena as biological or psychological

pathologies. This is evident in the example of undereating and anorexia nervosa.

Undereating and Anorexia Nervosa

Anorexia nervosa is an important case of the medicalization of eating and also demonstrates that the social constructionist approach does not minimize or trivialize the phenomena that are medicalized. Critics of the medicalization of anorexia do not discount the health implications of undereating, extreme weight loss, or food refusal (Bordo 2003). However, they argue that reducing the reality of anorexia to the biology or psychology of the individual excludes the influence of social and cultural norms of the body, beauty, and femininity. Rather than isolating anorexia and undereating as medical phenomena abstracted from society, critics argue that anorexia and undereating need to be understood in the sociocultural context in which they arise.

The relationship between hysteria and anorexia is helpful in elaborating the social constructionist account of medicalization. In the nineteenth century, hysteria was considered a meaningful medical diagnosis for women, demonstrated by an array of symptoms such as nervousness, increased or decreased sexual desire, food refusal, disobedience, or sleeplessness. Medical practitioners treated women who exhibited these symptoms through a variety of methods supported by highly esteemed research and evidence. However, by the twentieth century, hysteria was no longer recognized as a legitimate medical diagnosis. Some of the symptoms came to be regarded as the result of coercive social norms of femininity, while others were reframed as evidence for other conditions such as schizophrenia and anorexia (Brumberg 2000).

Establishing a psychological and/or biological cause for undereating and anorexia justifies medical interventions into the practice of eating. Through cognitive behavior therapy and medical nutrition therapy, medical professionals attempt to intervene in the psychological factors affecting eating practices. Using strategies such as food diaries and meal plans, medical professionals

seek to control eating behavior in accordance with medically determined norms. In life-threatening situations, techniques such as forced or intravenous feeding can be employed. The implications of these interventions and the transformation of eating from a social and cultural practice into a medical act are discussed further below.

Overeating and Obesity

Since the middle of the twentieth century, large body mass has been viewed as medical problem and defined through medical terms such as obese or adipose. Overeating is regarded as the primary cause of large body mass and therefore targeted by medicine. Importantly, medicalization is not an absolute process. Medical language and practices do not completely exclude moral, theological, or legal perspectives. Moral descriptors such as gluttony and weak-will remain entangled with medical conceptions; however, these terms are increasingly recast through medical language, such as “hyperalimentation,” “binge eating disorder,” or “night eating syndrome.”

The medicalization of eating in the context of obesity relies on a mechanistic conception of physiology. Energy intake (food) needs to balance with energy expenditure (exercise). Too much eating with too little exercise creates an energy surplus that leads to an increase in body mass. Obesity is commonly determined by the body mass index (BMI), which divides an individual's body mass by the square of his or her height. A BMI greater than 30 kg/m^2 is defined as obese. Not considered a disease itself, medical professionals regard obesity a risk factor for diseases such as diabetes, heart disease, and types of cancer (Gard and Wright 2005). While there is a focus on increasing exercise, altering eating practices is regarded as the most obvious way to treat obesity. By creating a causal chain from eating to obesity to disease, medicine seeks to control eating practices as a means to control disease.

A number of medical interventions have been developed to control eating practices. Surgical

interventions include jaw wiring (resulting in a liquid diet), intestinal bypass surgery (reducing the absorption of calories), gastric bypass surgery (reducing the size of the stomach and the volume of food it can hold), and gastric banding (implantation of a medical device to reduce the size of the stomach). These procedures enable medical control over the form, absorption, volume, and frequency of eating (Sobal 1995). Each procedure has a range of significant complications, such as malnutrition, anastomotic leakage, gastric dumping syndrome, infections, and incisional hernia. In addition to surgical interventions, pharmaceutical solutions have been sought to alter eating behaviors by producing the feeling of satiety and the suppression of appetite.

The use of direct surgical or pharmaceutical interventions is increasing; however, the most common treatment to change an individual's eating practices, and thereby reduce body fat, is through dieting. Dieting ordinarily occurs away from medical professionals and outside of medical spaces (clinic or hospital), yet they are imbued with medical significance and often supported by medical professionals. The increase of the medically prescribed or validated diet for obese and nonobese individuals suggests a general medicalization of eating (Sobal 1995). Through meal planners, food diaries, or commercial weight loss programs that offer meals created by nutritionists, eating is reframed as a medical practice that either fortifies health or increases the risk of obesity and disease.

The validity of the energy intake/expenditure conception is disputed from a variety of perspectives (Gard and Wright 2005). Some critics accept that obesity and overeating are a problem but argue that it is a social problem with causes located beyond an individual's eating practices. These critics focus on social and environmental factors, such as urban planning and the increased availability of highly processed foods at the expense of fresh foods. At the other end of the spectrum, critics argue that the medical significance of body mass and overeating is exaggerated. They argue that individuals process and use energy at different rates and that larger body mass

is not an indicator of overeating or disease but human diversity (Rothblum and Solovay 2009; Bacon 2010).

Infant Feeding

Infant feeding (formula, breast, or bottle-fed breast milk) has also been brought under the guidance of medical knowledge and practitioners. The vulnerability of infants and perceived long-term health impacts of infant feeding produce impassioned debate over the best feeding practice. The medicalization of infant feeding occurred with the development of pediatrics as a medical speciality and an emphasis on scientific motherhood from the 1840s onwards (Apple 1987). Prior to this, infant feeding was largely within the domain of mothers and midwives. Under these circumstances, breastfeeding was the norm with rudimentary and unreliable substitutes used under particular circumstances.

During the 1840s, the infant food industry began producing infant formula and advertising their products in medical journals and women's magazines as a healthier and more convenient alternative to breastfeeding. Recognizing the commercial and medical significance of formula, medical researchers began working alongside and in competition with the commercial sector to enhance formulas. This period also saw a shift in childbirth from the home to the hospital. With childbirth occurring in hospitals, medical practitioners and pediatricians assumed control over infant health and encouraged mothers to use formula for its healthfulness and scientific basis. Mothers choosing to breastfeed were advised to supplement breastfeeding with formula to ensure the infant's health (Apple 1987).

It is important to note that formula is not the medicalization of feeding, with breastfeeding is as a nonmedical practice. The emphasis on the medical benefits of formula implied the medical insufficiency of breastfeeding. The reemphasis on breastfeeding that occurred during the late 1970s mobilized medical evidence to counter arguments that breast milk is inferior to formula.

Extensive lists of health benefits of breastfeeding were published in magazines, medical journals, and popular books, claiming that breastfeeding protects against diabetes, asthma, and obesity and that it increases an infant's IQ (Wolf 2011). Further, research into the potential for diseases, toxins, and alcohol to transfer to an infant through breast milk did not dampen enthusiasm for breastfeeding but has led to medical professionals monitoring mothers to ensure that an appropriate diet and necessary care are used. Controversies over both formula and breastfeeding are part of, and contribute to, the process of medicalization of infant feeding (Van Esterik 1989).

Forces of Medicalization

Early critiques of medicine, notably Ivan Illich's *Medical Nemesis* (1975), argue that medical institutions and practitioners drive the process of medicalization. Illich argued that the imperialist expansion of medicine to all areas of life – from birth to death – allows practitioners to control, dominate, and direct the lives of individuals. This thesis has provoked a counteraccusation that critics of medicalization are given to conspiracy theories and “doctor bashing” (Conrad 2007). The extent to which nineteenth- and early twentieth-century medicine sought to control life is debatable; however, it is clear from recent examples that medicalization has been driven by forces that do not fall exclusively within the domain of medicine. The forces that have promoted the medicalization of eating and feeding include, but are not limited to, professional medical organizations, advocacy groups, private industry, government policy, and the media.

National and international medical organizations have significantly influenced the process of medicalization. For example, the American Psychiatric Association and the World Health Organization produce diagnostic manuals that shape the definition of disease and influence policymakers, clinicians, researchers, insurance companies, and pharmaceutical companies. Conditions such as hysteria, homosexuality, masturbation, obesity, erectile dysfunction, and

attention deficit hyperactivity disorder have been included or removed from such manuals over the past fifty years, arguably due to nonmedical influences (Conrad 2007).

Consumer and patient advocacy groups are increasingly influential forces on medical research and the medicalization of eating and feeding. Advocacy groups use public awareness campaigns, lobby policy makers, and provide research funding to increase the profile of an existing condition or to promote a condition or practice not yet recognized as medical. For example, the La Leche League International and the National Alliance of Breastfeeding Advocacy raise awareness about the health benefits of breastfeeding and campaign for policies to encourage breastfeeding (Wolf 2011). A variety of other advocacy groups foster public understanding for diet- and eating-related conditions, such as the National Association of Anorexia Nervosa and Associated Disorders, the Obesity Action Coalition, or the National Foundation for Celiac Awareness.

Advocacy groups are also influential in the de-medicalization process. In response to obesity, the National Association to Advance Fat Acceptance and the Fat Underground critique the medicalization of overeating and advocate for the acceptance of body diversity (Rothblum and Solovay 2009). These groups draw on the exemplars of the Gay Liberation Front and the Gay Activist Alliance, who were instrumental in the removal of homosexuality from the 1974 edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*.

Industries also play a significant role in the medicalization of eating and feeding. The food, weight loss, pharmaceutical, and insurance industries all play distinct yet overlapping roles. For instance, many pharmaceutical companies own the medical devices used in gastric banding. It is profitable for these companies, as well as the surgeons and clinics, if more surgeries are performed. However, health insurance companies often limit coverage to surgeries for medical rather than cosmetic need. Therefore, the medicalization of obesity, and the control of eating

practices as a treatment, is promoted by a network of actors. These include advocacy groups (Obesity Action Coalition), pharmaceutical industry representatives (Johnson & Johnson), and medical organizations (American Society of Bariatric Surgery; Conrad 2007). The food industry is also an important force in the medicalization of eating. While food companies are careful not to market products as pharmaceuticals, there is an increasing trend to market products with health claims, blurring the distinction between food and medicine. This process transforms the act of eating from a pleasurable or social act into a medical and health-benefiting act.

Government awareness and public health campaigns drive shifts in the way conditions and practices understood. For example, the US Department of Health and Human Services' National Breastfeeding Campaign from 2004 or the many campaigns around the Western world targeting overeating and obesity have promoted medical conceptions of eating and feeding practices. These campaigns attempt to alter public perception of eating and feeding and raise awareness of the medical relevance of such practices.

The media are enormously influential forces yet difficult to quantify. From reports on food safety scares to the importance of superfood, the media (in their increasingly varied forms) shapes public understanding of the medical significance of eating practices (Lupton 1996). The media helps to popularize nutritional research as well as introduce the public to terms such as omega-3 or folic acid. The media are used by, and amplify the impact of, the forces described above.

Ethics and Consequences of Medicalization

The analysis of medicalization can be a purely descriptive task. A study examining the medicalization process may attempt to describe shifts in the way a condition or practice is understood and refrain from valuing one understanding over another. However, the majority of research

into the process of medicalization adopts a critical stance. The transformation of social or cultural phenomena into medical conditions is often considered to have harmful consequences for individuals and society. However, some scholars suggest that medicalization produces both positive and negative consequences (Purdy 2001; Parens 2011). Considering the potential for medicalization to produce mixed consequences, philosophical and bioethical analysis of the process is needed (Sadler et al. 2009). The examples above demonstrate a number of consequences that require ethical consideration. Consequences vary between conditions, practices, and the sociocultural situation in which they occur; yet a number of common consequences can be isolated.

First, the lives and practices of women are disproportionately medicalized (Bordo 2003; Conrad 2007). Women are burdened with the responsibility to ensure their own eating practices accord with medical direction, but they are also positioned through the forces of medicalization as responsible for the eating and feeding practices of infants, children, and partners. While medical authorities target certain eating practices of men, particularly in relation to obesity, male overeating is often regarded as an indicator of masculinity.

Second, the process of medicalization obscures sociocultural contingencies. In treating undereating and anorexia as a medical condition, the analytic lens is focused on the biological and psychological. This focus excludes the influence of social and cultural norms on eating practices and perception of the body (Bordo 2003). Ironically, failure to acknowledge the influence of norms of femininity and the body has consequences for health, as the foundational causes are not addressed. The failure to critique social and cultural norms also has implications for the just and fair ordering of society.

Third, in framing problems such as undereating and anorexia as a pathological condition of the individual, medicalization has an individualizing effect. Instead of addressing harmful social norms, political discrimination, or environmental factors and critiquing those that promote them, medicalization reduces the

cause of a particular phenomenon to a blameless and morally neutral pathology. Positioning the individual as sick can be beneficial as it reduces individual responsibility and stigma, particularly when an individual is suffering from a biological pathology. However, if the “disease” is social, or entangled with the social, rather than biological or psychology, then focusing on the individual also removes responsibility from societal and political influences.

Fourth, medicalization can remove stigma and limit individual responsibility for a problem; however, it can also reinforce and amplify individual responsibility and choice. Rising concern over the ramifications of the perceived “obesity epidemic” has led to eating practices and the bodies of people defined as obese to be characterized as irresponsible (Gard and Wright 2005). The amplification of individual responsibility and choice is also evident in the medicalization of infant feeding. Mothers’ feeding decisions are positioned as evidence of responsibility (or irresponsibility) and determiners of the long-term health of the infant (Wolf 2011). In these instances, medicalization burdens individuals with the responsibility for outcomes that are not necessarily within the individual’s control or choice. This scenario raises deep philosophical questions of moral responsibility for actions partly determined by uncertain or uncontrollable factors (Nagel 1991).

Fifth, medicalization enables medical control of aspects of life that do not require control. The fat acceptance movement argues that bodies medically defined as obese are instances of human diversity, like height and eye color. Further, they contend that people with a larger body mass do not necessarily eat more than people considered to have a normal body mass (Rothblum and Solovay 2009). From this perspective, medical control and surveillance of eating as it relates to body mass are unnecessary and harmful, especially when irreversible surgical interventions are employed.

Sixth, increased medical surveillance over daily life is a substantial consequence of medicalization. Examples can be home visits from dietitians and nutritionists to ensure medically

appropriate meals are prepared or the use of nurses to monitor infant development and instruct mothers on how to care for their child in accordance with best medical knowledge (Apple 1987). The provision of medical assistance is an important part of a just society. However, if assistance is provided for nonmedical conditions, the medicalization of these conditions can reduce individual autonomy and create an unnecessary dependence on medical authority.

Finally, in addition to the effect on specific practices and conditions, the medicalization of eating as it relates to dieting and health promotion can transform eating and feeding from a social and cultural practice into medical therapy (if the individual is ill) or enhancement (if the individual is well). This shift disrupts and transforms relational and communal activities, such as the meal and food preparation, into medical acts. Further, in magnifying the medical effect of eating practices on the future health of an individual or infant, the medicalization process has the potential to produce anxiety and unease without the necessary evidence to support claims about the future effect of eating practices on health.

Summary

The medicalization of eating and feeding is a process through which eating and feeding practices are transformed from social and cultural phenomenon to medical acts. The process of medicalization occurs through political, social, and medical contingencies that shape human behavior and interpret certain practices or conditions as causes or symptoms of disease. The examples of undereating, overeating, and infant feeding demonstrate the complex web of influences involved in the medicalization process. A number of ethical concerns result from this process, including the reduction of culturally significant practices to medical ends, gender inequality, masking social injustice, obscuring social and environmental determinants of health and disease, burdening individuals with responsibility for conditions beyond their control, and increased medical surveillance.

Cross-References

- ▶ [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- ▶ [Food Addiction](#)
- ▶ [Food-Body Relationship](#)
- ▶ [Functional Foods](#)
- ▶ [Obesity and Responsibility](#)

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Metaphysics of Natural Food

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Synonyms

Compound foods; Organic foods; Philosophy of nature; Whole foods

Introduction

The adjective “natural” is often employed to characterize a food or beverage, and consumers tend to associate a positive value to it (Siipi 2013). The understanding of the adjective, however, varies across countries, and, in some circumstances (e.g., in the United States), “natural” is considered vague to the point that it cannot be defined and its usage cannot be strictly regulated. The *Codex Alimentarius* – a chief collection of internationally significant standards, practices, and regulations pertaining to food, which is maintained by the FAO (Food and Agriculture Organization) – does not acknowledge the term “natural” as significant to characterize a product; it contains, instead, a standard for organic foods. At any rate, as a first approximation we may define the adjective “natural,” when used in connection to food labels, as “produced or existing in

nature.” That which is natural, that is, is seen in contrast with that which is artificial, where the definition of “artificial” is “made by human work.” When the human work in question is a chemical synthesis, then the product is said to be “synthetic.” Synthetic products are made from parts or elements that do not occur in nature or, at the very least, from parts or elements that do not occur independently in nature. A material formed by chemical synthesis has a characteristic chemical structure that was, at some point, invented within a specialized laboratory; that is, the parts or elements of the material are combined to form a whole whose chemical structure does not occur spontaneously.

“Natural” Foods

Two sorts of foods can be bestowed the “natural” label: *whole* and *compound* natural foods (cfr. also Bozicevic 1987). Whole foods are those that can exist also spontaneously – that is, without human intervention – such as honey, milk, apples, or blueberries. Though by now we have well-developed techniques for the production of some of these foods, the production does not crucially alter the identity of the food. The current British labeling system for natural foods, which is inspired by this twofold distinction, can be useful to illustrate it a bit further. A whole food that is natural is a food that is natural without qualification. This is when a food has not been subject to any modification during its production and packaging, other than those procedures that would make it suitable for human consumption. For instance, a natural dairy product is a food manufactured from milk alone, with the possible aid of traditional cultured bacteria that are necessary for the fermentation process. A natural milk yogurt, under this understanding of “natural,” is a milk yogurt obtained solely from milk and *Lactobacillus bulgaricus* and *Streptococcus thermophilus*; no additives, such as preservatives, flavorings, or colors are allowed.

Between whole and compound foods, there are some ingredients whose naturalness

needs to be assessed on separate grounds. Belong to this list of ingredients additives and flavorings. Thus, a natural additive is one deriving from a natural whole food, or from a natural organism, by a traditional process (e.g., sugar extracted from sugar cane) or by a process that does not alter its naturally occurring chemical structure.

The second sort of natural food is compound foods made from natural ingredients. These foods differ from whole foods in that, without human intervention, they would not exist on their own. An apple pie, a portion of spaghetti with pesto, and a salad of red beets and walnuts are examples of this second sort of foods. Compound foods derive their naturalness from their ingredients. Compound foods, that is, are “natural” when all of their ingredients are natural. Thus, a natural bread would be a bread whose ingredients are all either whole natural foods or natural flavorings and additives. While “artificial” products require human intervention, some artificial foods are made from natural ingredients and are hence regarded as natural. “Natural,” when applied to foods – or, at least, to compound foods – does not stand for an entity that occurs spontaneously in nature. On the other hand, “synthetic” products not only require human intervention, but they must be arrived at by means of chemical synthesis performed by humans.

An alternative labeling system has been in use in Israel. In this case, the naturalness of a product is defined by means of a list of 33 processes. The processes identify the only allowed manners of modifying a whole natural food. The processes are all physical treatments, such as freezing, drying, cleaning, and blending; none of the allowed processes are chemical modifications.

Some countries have remained skeptical with respect to the meaningfulness of the adjective “natural,” when used to describe a food. In the United States, the Food and Drug Administration (FDA) agency discourages producers from using it. The agency attempted to define natural foods in 1991 but gave up in 1993, noticing that the term “natural” was too vague and indefinite. A similar attitude is held by the United States

Department of Agriculture (USDA), which has standards to define organic produce, but no standard for natural produce. Of course, both the FDA and the USDA disapprove of, and can take action against, claims that falsely describe a product, including claims that falsely portray a food as natural. But without some standards for naturalness, it is difficult to hold producers accountable for misleading consumers. A notable example in the United States is chicken meat labeled as “all natural” even when it has been injected with a saline solution that increases its weight up to 25%. Consumers and institutions, such as the Center for Science in the Public Interest, have objected to this use of the adjective “natural,” without significant governmental responses.

Finally, “natural” can also be employed in complex expressions, such as “natural goodness,” “nature’s way,” or “naturally better;” it may also be substituted or implicitly implied by terms such as “real,” “genuine,” or “pure.” Most legislation dissuade or prevent the usage of such expressions and terms, which can easily misguide a consumer because of their ambiguity. On the other side of the spectrum, the use of “natural” to describe some products – mostly fresh products – is subject to no specific labeling restrictions. When it comes to such products, the consumer is left on her own to determine the naturalness of the food.

Natural Misunderstandings

The adjective “natural” can have several misleading implications. Four of them are considered here (cfr. Siipi 2013 for a further discussion). The first feature is *nutritional suitability or superiority*. Natural foods are not necessarily nutritionally suitable, or more suitable than their non-natural counterparts, however. Some natural foods, such as sugar and lard, need be used in moderation and may not be suitable for someone’s diet. Also, synthetic foods, such as vitamins and amino acids, may be as nutritious as their natural counterparts.

Secondly, “natural” may imply some *health claim* (cfr. Siipi 2013). While it is the case that, in

some states, the adjective indicates that the food has not been substantially altered or processed, this is not sufficient to establish a general health claim. For instance, it may be believed that “natural” equals “nontoxic,” but this is not always the case. Depending on the soil or the specific characteristic of the product, a food may be toxic even when natural. Also, some natural whole foods – such as sugar and lard – and some natural compound foods – such as lasagna or apple pie – may be unhealthy, if eaten without moderation.

Thirdly, “natural” may suggest the *lack of human influence*. However, this is not the case for all natural compound foods. Moreover, in the case of natural whole foods that are farmed, the product is obviously the result of human effort.

Finally, “natural” may suggest *authenticity* (See entry on “► [Authenticity in Food](#)”) or *familiarity*. Not all natural foods, however, fit these adjectives. Consider, for instance, the case of natural breads. As the number of ingredients found within a loaf of bread grows high, and their processing becomes increasingly cumbersome, the tendency is not to regard the bread as familiar or authentic, even when all of its ingredients qualify as natural.

Often there is a gulf between the legal understanding of a term, the scientific understanding of a term, and the term’s everyday meaning. Terms used to characterize foods are no exception; in fact, they offer several prominent case studies. “Organic” (See entry on “► [Trade Policies and Organic Food](#)”) is another term whose usage is often misleading. In its scientific understanding, organic stands for a living organism, a part of a living organism, or that which is derived from an organism. However, in its everyday and legal usage, the term stands for the product of a plant or an animal grown without synthetic pesticides, synthetic fertilizers, hormones, antibiotics, and meeting all other standards issued by the country in which the product is grown. Obviously, there is a major difference between the meanings of “organic” in the two contexts. But, manufacturers of products other than agricultural ones are under no obligation to specify their understanding of the term.

Natural Foods and the Metaphysics of Nature

The difficulties in defining and regulating the use of the adjective “natural” to describe a food are part and parcel of a broader metaphysical debate over the proper understanding of the term. The idea of nature is perhaps one of the most abused ideas in common usage, not only from a commercial point of view but also ideologically and theoretically. One’s view of the proper understanding of natural foods depends on one’s underlying metaphysical approach to nature. Helena Siipi (2008) has proposed a threefold classification based on whether naturalness is grounded in a certain history or in a property or in a relation. Such classification is complementary to the one proposed here, which is based on four classic metaphysical positions concerning nature. For each position, its place in the debate over natural foods is indicated.

1. “Nature” derives from the Latin root “gna,” which stands for *that which generates*. In fact, the predicate “nasci,” to be born, has the same root. The very first position regards nature as that from which everything is born. On this metaphysical understanding, any food ultimately counts as natural. This position backs up the opinion of agencies, such as the FDA, who hold that “natural” is too broad and vague of a term to be useful in describing some foods as possessing a characteristic which other foods lack.
2. The second position, of Aristotelian descent, claims that *any individual thing has a nature of its own*. Thus, the nature of this apple is different from the nature of that yogurt. Also in this case, the adjective “natural” is of little use on food labels. However, individual natures can and should be captured by food labels. The definition of items provided by governmental agencies, then, should try and pin down the fundamental kinds of foods that there are. Such kinds reflect biological differences (e.g., the variety of an apple tree or the genetic makeup of a seed of corn) and also mirror geographic similarities (See entry on “► [Geographical Indications, Food, and Culture](#)”) and particular

methods of production (e.g., authentic specialties or fair trade products) (See entry on “► [Fair Trade in Food and Agricultural Products](#)”). This definition is especially important for understanding compound natural foods. An apple pie, as noted above, is natural only if its ingredients are natural. But it takes the right ingredients in order to make an apple pie; that is, the nature – in the Aristotelian sense – of the apple pie needs to be respected as well in order for the resulting product to even count as an apple pie.

3. A third position defines natural as that which is *spontaneous*. To be emphasized here is the lack of an ordering will on a crucial phase of the process of generation. Thus, a golden delicious apple, despite being the product of a grafted tree and of human effort, is still spontaneous, as its characteristic genetic makeup is not the outcome of human intervention: it occurred spontaneously. Vanilla extract counts as natural, under this definition, because its chemical structure is contained in the vanilla beans. Vanillin produced by chemical synthesis, instead, is not natural.
4. According to the fourth position, natural is opposed to *artificial*: natural is that which is not produced by humans. In some cases, that which is natural could also be produced artificially. Thus, for instance, ocean waves can be natural or artificial. This position cannot be applied to natural compound foods, which are the outcome of recipes and – as described above – are derivatively natural in that they derive their naturalness from their ingredients. However, the position plays an important role in the labeling of natural whole foods. A whole food, which is delivered without altering its key characteristics, is natural; for instance, an apple that is washed and cleaned, before being delivered to the market, is still natural. On the other hand, a whole food which is processed and substantially altered, or a food which is produced by chemical synthesis, is not natural.

Each of the four metaphysical positions on nature helps to shed some light on the debate over natural foods. The upshot is that the

understanding of the adjective “natural,” when applied to food, can hardly be reduced to one metaphysical schema. Some skepticism regarding the usefulness of the term in picking out a genuine characteristic of a food remains.

Summary

The entry employs the conceptual tools of metaphysics to critically study the adjective “natural,” when utilized to characterize a food or beverage. There is some skepticism regarding the usefulness of the adjective in picking out genuine characteristics of a food. While some countries, such as the United States, have abstained from issuing specific regulations regarding the use of the term “natural” to describe a food, others – e.g., England and Israel – do have such regulations. The entry first draws a distinction between the application of the adjective to whole foods and to compound foods. Hence, four typical misunderstandings of the term are flagged. They comprise circumstances in which “natural” is taken to imply – respectively – nutritional suitability, a health claim, lack of human influence, and authenticity or familiarity. Finally, four classic metaphysical positions on nature are introduced. The positions jointly support the different facets that the adjective “natural” takes in describing a food. They also reveal how the adjective “natural,” when applied to food, cannot be reduced to one metaphysical position.

Cross-References

► [Natural Food](#)

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Molecular Gastronomy

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Synonyms

Food science; Modern cuisine; Molecular cooking; Progressive cuisine

Introduction

Molecular gastronomy is a scientific field that studies the changes food products go through during the process of manipulation. These physical and chemical processes take place due to the impact on the molecules of the food as it goes through the different stages of cooking. In more recent times, molecular gastronomy has had a different meaning. It has become known as a movement led by chefs who introduce innovative techniques in cooking to diners around the world. This entry will follow the history of the discipline and the movement, mention the key people involved in making it known, and look at the ethical questions that arise from all perspectives of the discipline: ingredients, preparations, and marketing.

History

The field of “molecular gastronomy” began in 1988 by two scientists, Nicholas Kurti and Hervé This, who began working with the natural processes of food. They noted the physical and chemical changes the food underwent during its preparation and manipulation (Koppmann 2009). Kurti and This were looking to answer some of the most common questions of food preparation: How did food react to heat and why did it react that way? What other changes did food go through during the different stages of its preparation? In the beginning, the field was about the discovery of why changes occurred when food

was exposed to common stages in every day food preparation. It had nothing to do with creative cuisine (This 2005).

The creators of the field of molecular gastronomy argue the field began with the use of fire to cook food. The exposure of food products to this treatment caused it to change physically. These physical changes took place because of the modifications in the molecular structure of the foods. Before Kurti and This began to study these evolutions, there was not a complete understanding of what exactly was causing the food to be transformed. Trial and error and observation made creations possible. An anonymous text from the second century BCE makes reference to fermented meat, and a later Apicius text from the fourth century BCE mentions making a liquid with animal parts and water that illustrates the beginning of making a basic stock, a food preparation still common today, and the base to many traditional French culinary creations that form the foundation of modern culinary arts and cuisine. In addition, most French culinary texts are laden with recipes that illustrate molecular gastronomy at its best since the beginning of their publication. Famous classic sauces such as a Hollandaise created by French Chef Auguste Escoffier are classic examples of food transformation in a chemical and physical form using friction and temperature to cause an emulsion. All of these examples allow This to prove that though molecular gastronomy is a new field of study, the aspects of food that it studies have been occurring since the beginning of the use of fire (This 2005).

Kurti and This were disappointed that people did not know why food was transformed through cooking. They decided to not only research but also teach others about their discoveries. Food undergoes chemical and physical modification with the use of different elements through its processing and manipulation. In spite of the unavoidable use of molecular gastronomy within cuisine and cooking, most cooks prepared food without a conscious understanding of what happened to it on a molecular level. Disappointed by the lack of interest of food from this perspective, Kurti and This set out to identify all of the aspects

and spread knowledge about them. Many years later, after a successful spread of the existence and importance of the field by its creators, it was added to the curriculum of the University of Paris in 1996. After Kurti's death in 1998, This continued to teach about the field but made one slight adjustment; he changed the name from molecular and physical gastronomy to just molecular gastronomy. He believed this name would be shorter and explained the physical changes reflected due to the molecular restructure that occurred within the foods throughout their life stage (This 2005).

In his PhD dissertation, Hervé This listed five aims to the field of molecular gastronomy. They were "to collect and investigate old wives' tales about cooking; to model and scrutinize existing recipes; to introduce new tools, products and methods to cooking; to invent new dishes using knowledge from the previous three aims; and to use the appeal of food to promote science" (This 2005). This took the science into a new direction. A lot of publicity about this science was created and that led to the affiliation of many chefs within France and, later also, within the rest of Europe, who set out to create new recipes and food preparations that led to a cutting-edge, scientific form of food that was innovative and good to eat.

Molecular Gastronomy in the Twenty-First Century

Since the late 1990s, molecular gastronomy began to be recognized worldwide as a movement in a modern take to food. In 2001 French schools began to experiment with flavors. This successful venture led Canadian and French schools to integrate the teaching of molecular gastronomy within the curricula of the culinary programs. Many professorships were created around the world in places such as the Netherlands, Argentina, Canada, and many other countries to continue to spread the knowledge of molecular gastronomy. The discipline, as being taught in culinary schools, differs from the original, introduced by This and Kurti. Molecular gastronomy, as a modern movement, focuses on

innovative food preparations based on the more thorough understanding of the physical and chemical changes caused by food manipulation and the merging of ingredients. Kurti and This's molecular gastronomy did not focus only on food preparation; it was based on studying the changes of the food's physical and chemical states through their life cycle. Therefore, according to This, it is the scientists, not the cooks, who are molecular gastronomists, since they spread the knowledge of the science (This 2005).

The field of molecular gastronomy changed cuisine forever. Many chefs became interested in finding out why food reacts the way it does through the process of cooking. Chefs are interested in the work done by This and have joined forces with scientists to learn more about how they can create great dishes by understanding the physics and chemistry behind the food. Many dishes, concepts, and restaurants have opened, featuring foods, where the conscious application of scientific techniques transforms food into exciting culinary creations. Wylie Dufresne told Harvard students, doing things just because or because they had always been done that way was okay for a young chef, but as a more mature professional, he wanted to find a more precise reason as to why things happened. Opening his restaurant was an opportunity for him to continue to learn and find out the real reasons why changes in food occur (Brenner and Dufresne 2010). Restaurants such as elBulli, The Fat Duck, WD-50, and Alinea, among others, are recognized worldwide and not only prove to be exciting but also have become known as the pioneers of a new dining experience (Barham et al. 2010). Some restaurant chefs who use modern techniques label themselves as molecular gastronomists; others have rejected the title, claiming they are chefs. The fundamental elements of being chefs and serving great food are not dependent on the use of modern techniques; instead, it is about using the best possible ingredients and preparing good food (Barham et al. 2010).

The molecular gastronomy movement has spread worldwide, and some chefs have been collaborating with Harvard scientists to

demonstrate how the understanding of science can transform culinary tradition. The class, *Cooking and Science*, is meant to use food as a way to illustrate molecular transformations and allow for a better understanding of scientific concepts. The course is filmed in its entirety and available to viewers on YouTube free of charge. The scientists teach the theoretical portion of the course. The chefs demonstrate the preparation of dishes featuring the molecular changes mentioned in the theoretical portion of the class. However, these demonstrations include the modern preparation of the dishes; new ingredients are introduced in the form of powders, and more advanced technology plays a role in the cooking process. This illustrates not only how molecules change but also how science and technology impact the culinary field. On the lesson “Meat Glue Mania” on November 8, 2010, Professor Michael P. Brenner, professor of applied mathematics and applied physics, teaches students about complex chemical changes. Professor Brenner claims these changes can be as common as the Maillard reaction and caramelization, processes normally seen in the browning of meat or preparation of caramel. He also claims one of the challenges with these complex changes is they are not very well understood by scientists.

However, complex changes can also take place to create new foods. One of the ways these new creations can take place is with the use of transglutaminase; this compound glues two protein molecules together with a covalent bond between amino acids. As an illustration of the theory, Wylie Dufresne, chef of WD-50 in New York City, uses meat glue to adhere one filet of codfish onto another to create a thicker filet that will have a perfect shape that he can cook more evenly. This new creation reflects how the two existing protein molecules adhere to each other. Without the powdered meat glue, which he makes into a slurry to create a more even coat, this reaction would not be possible. However, the understanding of molecular structure of foods has allowed Dufresne to create more modern takes with this product, including shrimp, tofu, and peanut butter pastas, which use meat glue to

re-gelatinize the products into sheets (Brenner and Dufresne 2010).

Ingredients in Molecular Gastronomy: An Ethical Dilemma?

In the popular New York Times Magazine Essay “Unhappy Meals,” Michael Pollan begins to warn consumers about eating industrialized food. He asks consumers to avoid foods that are either unfamiliar or unpronounceable. Many of the ingredients added to processed foods have been incorporated into them to increase their shelf life and make the process of fabricating these foods less expensive. In addition, these foods substitute whole foods or, as Pollan calls them, real foods. The hydrogenized, high-fructose, maltodextrin and xanthan gum creations have been the center of an epidemic of health deterioration and disease in the United States and other countries using “Western diets” (Pollan 2007). Some of these ingredients, independently, are not harmful. However, their use in the foods suggests highly processed creations that contain other ingredients of lesser benefits (Pollan 2007).

Some of the ingredients utilized to “molecularize” food are common to food labels of supermarket conventional foods. In his lecture on complex chemical changes, Professor Brenner states that all of the chemicals he lists in his lecture change the flavor of foods depending on the amount of the chemical present in the foods. He also says: “. . .what is interesting about these chemicals is you can’t go to the grocery store and buy them, it is not like salt. . .” (Brenner and Dufresne 2010). However, many of these chemicals are produced through the process of cooking, not on the addition of a chemical; these flavor compounds are created by different combinations of food products and are also dependent upon the rate and temperature the food is being cooked. So, not all unpronounceable ingredients are additives; in addition, not all additives are fabricated chemicals; some are extracted from natural sources (Brenner and Dufresne 2010).

Rachel Zemser, a culinologist, claims chefs “stole” the creations of the true food scientists:

the people who originally created all the varieties of modified food starches and the equipment (centrifuges, freeze dryers, etc.) used by many chefs today. They use all of the techniques and ingredients and receive more fame from these creations than the scientists working for years to create them. She adds that chefs such as Ferran Adria, Wylie Dufresne, and Grant Achatz should become “real” molecular gastronomists. She defines this as a person who uses their creations for the improvement of societal food issues of every day consumer goods, rather than the creation of a modern dish within a restaurant targeted to just a few (Zemser 2010).

The ingredients Zemser talks about are identified as powders within the movement of molecular gastronomy (Zemser 2010). These are also the unpronounceable ingredients such as maltodextrin and xanthan gum, which Pollan tries to steer consumers against (Pollan 2007). Will Goldfarb, pastry chef and owner of Will Powder, one of the few distributors of powders in the United States, on his website, explains the source of the ingredients and their use. Stabilizers, emulsifiers, and spherification ingredients, just to name a few, are featured on his site and product list and are also elements of his own menu creations (Goldfarb 2012). The powders are sourced from natural sources, extracted, and sold as powders. Professor Brenner and Wylie Dufresne use transglutaminase, which is naturally produced by soil bacteria (Brenner and Dufresne 2010). In the powdered form, these ingredients cause transformations from the natural state of the foods, giving life to the foams, gels, capsules, and other shapes and textures common to the menus of the restaurants that brought molecular or modernist cuisine to life (Brenner and Dufresne 2010).

In his article “Incredible Edibles,” Lanchester claims Colonel Sanders’s cuisine is just as molecular as that of Ferran Adria because they both undergo textural and physical transformations through cooking (Lanchester 2011). Modernist cuisine uses some of the same ingredients used as preservatives and texture modifiers within flavored milk. In the past few years, British Chef Jamie Oliver has been on a campaign to decrease obesity in the United States and teach people how

to cook. One of his biggest battles in the food revolutions of West Virginia and California was the consumption of flavored milks at schools. He claims chocolate milk has more sugar than soda and in general is a bad addition to the diet of a child (Oliver 2010). Usually, chocolate milk labels feature the following: partly skimmed milk, vitamin A, palmitate, vitamin D, sugar, cocoa, artificial flavor, carrageenan, cellulose gum, and guar gum. The carrageenan added to the milk gives it a richer, silkier texture (CBS News Canada 2005). Carrageenan is also used within modernist cuisine; the purpose of adding carrageenan to restaurant food is to create gelified sauces and jellies (Goldfarb 2012). It is not just about the powders or the technique. Wylie Dufresne says all food is transformed scientifically even without the addition of powders. His cooking style is traditional food that has been impacted by the understanding and use of science to the food’s benefit.

Modernist or molecular cuisine is not just about the powders or preservatives. The cooking methods, many of which include modern technology, are also a part of the innovation in food. The sous vide technique includes packaging the food in a Cryovac or vacuum-sealed plastic. Though chefs use high technology with a circulator, these are not necessary. It can be done with a ziplock bag in a microwave. Though these foods resemble packaged supermarket food that generally have a bad reputation, due to the ingredients and health risks associated with it, not all sous vide food is bad. Using the microwave is also not by definition bad. It allows quick cooking, which in the example provided by Michael Voltaggio in his YouTube video is a healthier alternative to cooking carrots or vegetables than a pot of boiling water. It keeps the nutrients in the package and does not let them out and leech them into the cooking liquid (Voltaggio brothers 2011). How good the food is is dependent on what is placed in the package. The whole carrots in the microwaved package used by Michael Voltaggio will keep the natural sugars and nutrients in, thus making it a healthy alternative to food (Voltaggio brothers 2011). This technique can be used with any ingredients and will

keep the shape and the integrity of the food, as well as the nutrition. It is less harsh on the food item through its preparation and is, in many cases, a better alternative to cooking. It also creates a more consistent food product, one that is hard to mess up (Dickerman 2005).

Progressive or Modern Cuisine

Many do not believe it is ethical to label the chefs as molecular gastronomists. The scientists and culinologists argue the molecular gastronomists are the people who spend the time discovering and creating the products themselves (Zemser 2010) and transmitting the knowledge of the molecular reactions (This 2005). Others believe that calling chefs molecular gastronomists makes people believe that their food is a gimmick and that it is always attached to some sort of scientific creation. Though many of the creations of the chefs include ingredients or cooking methods that are innovative and scientific, there are other dishes and parts of creations that are straightforward interpretations of good food and traditional food preparations. For these reasons, the term “modernist cuisine” is more appropriate to the style of cooking of chefs like Grant Achatz, Wylie Dufresne, and Thomas Keller, just to name a few (Arnold 2009).

As many chefs began to imitate those who pioneered the food transformation, many bad copies arose. These were chefs who did not really understand the processes and also did not know how to blend them into traditional cooking techniques. However, they saw the difference in price range and fame that was brought to these pioneers. For that reason, they began to label themselves as molecular gastronomists and raised their food prices and became more well known (Melonas 2009).

There are many chefs who do not only focus on the innovation but also on the tradition of preparing good food. Some of them prefer the new term progressive or modernist cuisine. This has also proved less intimidating to the public (Melonas 2009). Many chefs dislike the

modernist or progressive label as well and argue that they are still chefs; they focus on creating good food. Using different cooking techniques does not renounce the fact that they are preparing food for the public and they just want to be known as chefs (Melonas 2009).

Marketing Molecular Gastronomy

Chefs create, but do not teach; calling chefs molecular gastronomists is not appropriate (This 2005). Many chefs use the term to market themselves as innovators; this is also a tool to communicate to others that their menus feature modern or progressive cuisine. Using the term molecular gastronomy for these innovative creations is unethical; it is a misrepresentation of the term because molecular gastronomy is the science itself, not the cuisine (Koppman 2009).

The Italian Department of Health banned the “powders” used within molecular gastronomy on a temporary basis. Their original claim is that these elements are not good for people’s health. Many chefs, such as Wylie Dufresne and Jose Andres, believe the Italian government is making an unethical choice, using this as a marketing tool to discourage people from being interested in and fall in love with the trend. After all, the Italians did not ban these ingredients from processed foods sold outside restaurants in markets and other areas. This temporary ban was put into effect for the period of only 1 year as a trial. Soon after the ban, the Italian Minister of Agriculture promoted the introduction of a new McDonalds burger, which led many chefs and molecular gastronomists to believe that it is the tradition of the classical Italian cuisine that they are looking to preserve and not that the ingredients are harmful for the health.

Journalists began to use “molecular gastronomy” to write about the trends of innovative cuisine. Not only is the term not properly used with chefs, but most of the better-known chefs labeled with it (Grant Achatz, Wylie Dufresne, and Ferran Adria, among others) who use

innovative techniques also dislike the term (Arnold 2009). What has become known as molecular gastronomy is a new idea, dish, or technique with high-technology equipment. However, at this point, chefs and pastry chefs of some of the most well-known restaurants in New York City, and in the world, use techniques and ingredients classified by journalists as “molecular,” but not all of them, such as Johnny Iuzzini, have been labeled as molecular gastronomists. The use of technology and avant-garde or innovative ingredients should not be labeled “molecular.” Giving it that title not only is a misrepresentation of what molecular gastronomy really is but also suggests that anything related to high technology or innovation automatically becomes a fad (Arnold 2009).

Using the label molecular gastronomy for all of the chefs using high technology or new ingredients begins to classify all of the chefs under the same category. Categorizing people with such different styles and approaches to food and restaurants is unethical. It is merging all of them together, as if they all had the same methods and personality. It creates an expectation to consumers that all of the restaurants and foods will be similar in style and have the same approach, since they all have the same label. This could not be further from the truth (Arnold 2009).

Summary

Molecular gastronomy is a field of study that looks at the chemical and physical changes foods undergo throughout the process of their manipulation. Due to many modern techniques, the term has taken another connotation. There are many ethical concerns with the field. Some of them have to do with the use of the term itself for food producers. Others have to do with the use of ingredients that in other food products seem to arise questions of health in consumers. This entry looks at the history, the evolution of the term, and the use within modern food preparations.

Cross-References

- ▶ [Cooking Tools and Techniques: Ethical Issues](#)
- ▶ [Food Additives and International Trade](#)

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Montaigne and Food

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Synonyms

Autoethnography; Cannibalism; Dietary medicine; Dining company; Eating habits; Essays; Gastronomy; Humoral physiology; Lent; Travel journal

Introduction

Michel de Montaigne was among the most important Renaissance thinkers, the greatest advocate of skepticism, and the virtual inventor of the modern essay as a literary genre. After serving as mayor of Bordeaux, late in life (1571) he shut himself up in an “ivory tower” not to escape from the world but to contemplate humanity from an objective distance. Trusting that any true knowledge, as opposed to received wisdom, begins with a skeptical willingness to suspend all preformed assumptions, he dared to ask “Que sçay-je?” or “what do I know?”

The only logical place to begin is with self-examination, which itself has a long philosophical pedigree. The idea of “know thyself” (γνῶθι σεαυτόν) was associated by Plato with Socrates but is probably much older. Montaigne’s intellectual sojourn led to the composition of the essays in 1580. These as well as his travel journal contain numerous references to food, his own experiences, preferences, and bodily functions, which is only to be expected since he critically examines every aspect of himself. Montaigne’s writings present numerous ethical issues regarding food, most importantly how and what people should eat, whom people should trust as authorities in matters of health and gastronomy, and ultimately how people should consider those with customs different from their own.

Main Text

Book III Essay 13 *On Experience* focuses largely on Montaigne’s own eating habits. As the title of the essay suggests, experience is the best guide in determining food choices and dining customs. This implies that medical professionals cannot always be trusted, partly because they disagree so much among themselves, but also because their opinions are drawn from authoritative texts rather than from direct personal experience. Every individual is the best authority regarding his or her own body. Although the dietary precepts of the Renaissance are now wholly outdated, the modern reader can empathize with Montaigne’s comments, especially given familiarity with so many competing diets, fads, and foods marketed with explicit health claims. Today people are faced with the same dilemma: to trust expert medical advice, often proffered in the interest of profit, or follow one’s own bodily experience and taste preferences? Montaigne’s advice is generally to remain skeptical when it comes to food advice and choose a diet and mode of life that best suit one’s own body, ingrained habits, and customs, as learned over time.

This particular essay would today be called an autoethnography. By relating his own personal habits in regard to food, Montaigne attempts to communicate something essential about his character. In humoral medicine, the reigning medical orthodoxy of his time, a person’s taste preferences and habits and ultimately “complexion” were thought to be an indication of personality type and inner psychology. Thus choleric are angry, melancholics depressed, phlegmatics slothful, and sanguine people cheerful and optimistic. Montaigne doesn’t actually classify himself using this scheme, which may be an indication that he was skeptical about the entire system. Nonetheless, food preferences do reveal something about personality and character and are used to communicate identity, which Montaigne seems to instinctively understand. Montaigne confesses to eating too fast and even biting his fingers in the process. Keep in mind that forks were still considered strange and effeminate and King Henry III was scandalized

for using one in a satire called the Isle of Hermaphrodites (Artus 1605). By admitting this, Montaigne reveals that he is generally impatient and voracious. His eating habits likewise reflect his intellectual capabilities; he similarly devours topics, fixating on one then moving quickly to another, though often coming back to savor familiar themes.

But his food preferences also carry culturally and socially constructed meanings specific to his own time and place. His preference for salt beef, for example, would have immediately signaled to his readers that his tastes and affinities are not with aristocrats who preferred wild fowl and delicate white-colored dishes, but with the bourgeois and even working classes. The labor undertaken by these classes was believed to give them strong stomachs able to digest coarse foods like beef. He also preferred undercooked meats and game hung to the point of becoming slightly rank. These preferences not only ran counter to dietary recommendations but importantly they show that he is not fastidious, has no squeamishness about food, and follows his taste buds rather than fashion.

More importantly Montaigne admits to a fondness, even preference, for fish, which was normally seen as a privation during Lent. “I am very fond of fish: for me lean days are fat and fast days are feasts. Besides I believe that, as some people say, fish is easier to digest than meat.” This was not the standard physicians’ advice, but quite the opposite. Once again Montaigne trusts his own body’s evidence over prevailing opinion. Moreover, the original purpose of Lent as a form of penitence is subverted, since he enjoys fish immensely and feels no need to find a suitable ascetic substitute, which may signal his skeptical attitude toward the entire institution of fasting. In any case, he admits that his tastes are unusual, and unlike everyone else, he hardly suffers during Lent. Contrast this with the situation of Erasmus, another great Renaissance figure, who couldn’t stand fish, purchased an official dispensation, and was embarrassed when people went out of their way to make special dishes for him. Montaigne, to say the very least, is much less fastidious.

Montaigne was also skeptical of medical authorities on the topic of diet. The dominant system of humoral physiology posited that each person was born with a certain complexion and the foods they eat should be of an opposite quality to maintain a humoral balance. Therefore a choleric (hot and dry) person should eat cold and moistening foods and phlegmatic hot and dry – or spicy – foods. The basic logic is allopathic. By the latter sixteenth century, this entire system, which stretches back to classical antiquity, began to be questioned, since a barrage of conflicting dietary advice generally confused readers, much like today. There were literally dozens of dietary manuals published in this era, and Montaigne seems to have appreciated their effect on readers who followed the latest fad: failure. “If your doctor does not think it good for you to sleep, to take wine, or some particular meat, do not worry; I will find you another who will disagree with him.”

This attitude toward physicians and dietary dogma was not unique to Montaigne, but rather indicative of a gradual breakdown of Galenic orthodoxy in the latter sixteenth century, which led many writers to examine the book of nature directly rather than the medical classics. In fact, the autobiography of the great mathematician and physician Girolamo Cardano, roughly contemporaneous with Montaigne, strikes many of the same notes. In chapter 8 on *Manner of Life*, he too describes what he normally eats each day and even his favorites like pot-roasted veal (Cardano 2002). Like Montaigne, he enjoys fish and fruits like peaches, despite the dire warnings of physicians. The best practices learned through experience are here too the greatest authority.

Among the Renaissance, dietary fads none was more popular than the *sober diet* recommending strict reduction of intake and general abstinence. Spread by Alvise Cornaro in mid-sixteenth century, its author was the original “before and after” example of a life nearly wrecked by riotous living but then miraculously cured by strict abstinence (Cornaro 1996). Most importantly Cornaro was given a wide range of differing advice, which in the end he ignored, following the messages of his own body instead

and living to extreme old age in perfect health. Exactly like Montaigne, his own body told him what to do; it was merely a matter of trusting oneself. Actually, it is likely that Cornaro was a diabetic since he found solely through trial and error that sweets would make him sick and that severely limiting his intake kept his blood sugar level stable. Naturally this regimen would not work for everyone. Montaigne also understood that his own experience could not serve to guide his readers – and that abstinence would not work for everyone. Having suffered himself from kidney stones, Montaigne appreciated the fate of a member of the medical faculty who resorted to extreme abstinence to combat his disease and died, by drying up his kidneys, according to his physicians, a story he relates in the same essay. That is, each person should refer to his own experience in self-diagnosis and therapy and one individual's personal judgment, such as Cornaro's, could not be taken as universal advice. Ironically it was, even though Cornaro himself insisted on trusting himself.

The other details of the essay *On Experience* may strike readers as quirky or coincidental, but they actually reveal that Montaigne was thinking about much broader philosophical questions in gastronomy and aesthetics in general. For example, when he mentions that his father hated sauces but he loves them all, he is indirectly wondering why taste is not inherited like physical attributes. He also wonders how it is that taste changes over time and with age, sometimes randomly. Radishes once agreed with him, then they didn't and later they did again. Purely aesthetic questions also seem to fascinate him. Montaigne discusses how throughout his life he has often skipped a meal, merely so he will appreciate the next meal more, not like Epicurus who wanted to accustom himself to little food and not depend on luxuries. Interestingly, Montaigne seems to be among the few food writers since then who really understands Epicurus.

Montaigne also notes how eating too much dulls both his mind and body and in particular how difficult sex is after a big meal. Like a good anthropologist, he also notes that the pleasure of a meal hardly consists in the food itself.

The company is far more important. "There is no dish so sweet to me, and no sauce so appetizing, as those derived from the company." Montaigne was also a keen observer of the customs of other peoples and in particular how their bodies become habituated to local practices. The most obvious one is the custom of diluting wine with water, which was the typical custom not only in the great wine capital of Bordeaux but in most of Europe. But he knows Germans drink their wine straight, and since this custom serves them best, they should continue to follow it, regardless of what physicians claim.

Montaigne's opportunity to observe the customs of other countries was made possible in particular by one long trip. In 1580–1581, Montaigne took a 17-month journey through Germany, Switzerland, and Italy, mostly visiting various mineral baths to search for a cure for his kidney stones. The trip was recorded in his travel journal, the manuscript of which was first discovered in 1772. It recounts many of unusual customs he encountered in these places and again relates the same theme of objectivity when discussing the wide variety of human habits.

The most celebrated passage regarding food occurs while in Rome, when Montaigne met the *Maitre d'* of Cardinal Carafa who offered a discourse on the "science de guele" with a magisterial countenance as if he were discoursing on a fine point of theology. The encounter is described in Book 1 chapter 51 *On the Vanity of Words* as an example of the incongruity of grandiose verbiage to describe the proper seasons for eating hot and cold salads, how sauces should be ordered, and so forth. Food scholars cite the episode as evidence of the importance of gastronomy to Italians in the sixteenth century, but explain no further the details of the discourse.

First, the character Montaigne met closely matches a real person who was in Rome at the time. He may very well have met the famous banquet manager Cesare Evitascandalo, who composed the *Il Maestro di Casa* (i.e., *Maitre d'*) in Rome in 1585, which was subsequently published in 1598 (Evitascandalo 1598). The book is indeed about various officers of the household employed by cardinals, including the *trinciante* or

carver, whom Montaigne mentions in the Latin quote on carving hares and chickens. Evitascandalo even mentions a Cardinal Carafa in a passage about table settings. This was Antonio Carafa, rather than the earlier and more famous cardinal Giovanni Pietro Carafa who became Pope Paul IV and died in 1555.

In Montaigne's journal entry, the *Maitre d'* discusses the qualities and effects of various ingredients. This was standard subject matter in the genre of *Scalo* (banquet management) literature, as was garnishing and decorating food to render it more pleasant to the eye. He distinguishes between salads that should be served cold and those that are best hot according to season and how to recognize the difference between an appetite at the start of a meal and how to revitalize or pique the appetite after two or three courses. Obviously these are gastronomic questions which no longer concern us today, yet were of great importance to cooks and banquet managers of the past. Although there are some universal truths about human nutrition, clearly Renaissance people had a very different understanding of what was occurring in their bodies, and a need to stimulate the appetite mid-meal appears to have been a genuine concern.

Another phrase Montaigne relates that would confuse a modern audience is the "*La police des sauces*" not merely ordering but controlling and regulating the use of sauces. There are two senses in which one might interpret this phrase, either which sauce goes best with which ingredient from a gastronomic perspective or which serves as a corrective to the potentially harmful qualities of the dish.

Passing through Switzerland, Montaigne noted many of the common customs of the people, for example, that they are good cooks, of fish especially, implying that they cared more about what they ate than housekeeping, which he found lacking. Their table service was also very different from what Montaigne was accustomed to. They never mixed water with their wine, which he assumed stemmed from the weakness of the wine. He also remarks about how they serve only two or three types of meat, sliced and presented on the same dish. In France many dishes would

have appeared at once on separate platters, known as service à la Française, and dishes would have been replenished as they were depleted. In Switzerland new dishes never appeared until those on the table were entirely consumed. Montaigne relates these customs generally without criticism, in keeping with his skeptical attitude toward any universal pronouncement about what is right or wrong. People develop customs which suit them and though they seem strange, they make sense in context. Montaigne marvels, for example, how the Swiss regale the lowly crayfish, considering it a delicacy, which is entirely appropriate given their pristine source.

At Lindau in Bavaria, he waxes rhapsodic about the quality of the food he is served. There is soup made of quince, rice dishes, excellent fish, and the most tender meat he had ever eaten, cooked with plums, apples, and pears. He sorely regretted not taking along a cook who could have learned these recipes and taken them back to France. A good sense of the food he ate here can be found in the cookbook of Anna Wecker, published in Amberg in 1597. There are many recipes for cooking apples with meat, of exactly the type Montaigne enjoyed. When in Tirol he notices that people eat fish and meat together, but that meat is never served on fasting days, adhering strictly to Catholic ban on meat during Lent. Apart from curiosity and the urge to observe, Montaigne mentions these differences in gastronomic preferences and regional customs to point out that people should never be absolutely certain of the correctness of their own habits.

Of course the ultimate discussion of relativism when it comes to food is about cannibalism, in one of Montaigne's most celebrated essays. Here he describes Native Americans, drawn largely from contemporary accounts and perhaps from an individual he met in Rouen, brought from what is today Brazil. Montaigne describes their ordinary eating habits: "Their drink is made of a certain root, and is of the color of our claret, and they never drink it but lukewarm. It will not keep above 2 or 3 days; it has a somewhat sharp, brisk taste, is nothing heady, but very comfortable to the stomach; laxative to strangers, but a very

pleasant beverage to such as are accustomed to it. They make use, instead of bread, of a certain white compound, like coriander seeds; I have tasted of it; the taste is sweet and a little flat.”

Eventually he describes their eating of human flesh. The essay is of course not advocating toleration of cannibalism, but rather objectivity, that Europeans should not be so quick to call a practice barbaric when they commit equally horrible acts themselves. Here he was thinking of the terrors of the civil wars over religion which rent France apart in this century, and in which people were tortured and burned while alive, certainly worse than eating a person after death.

While not generally acknowledged to be a writer especially concerned with food or the ethics of food topics, Montaigne’s writings reveal that he was continually actively engaged with questions about food, many of which still concern us deeply today.

Summary

Montaigne was a skeptical Renaissance thinker who revealed his own eating habits and those of others as a way to gain insight into individual personality, national character, as well as universal patterns of gastronomic behavior. He also discusses numerous ethical concerns of his own day: whether physician’s advice should be trusted over one’s own experience, whether people should stick to their native habits, and whether we should be tolerant of differences among peoples.

Cross-References

- [Cannibalism](#)
- [Christianity and Food](#)
- [Culinary Tourism](#)
- [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)
- [Epicureanism and Food](#)
- [Fasting](#)
- [Taste, Distaste, and Food](#)

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Multifunctional Agriculture

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Synonyms

Externalities; Fringe-benefits and heterodox economics; Utilitarianism

Introduction

The innovative, indeed provocative nature of the concept of multifunctional agriculture can only be understood fully by thinking back to agriculture’s role in twentieth-century society during the Cold War era, which was simply to provide food for a growing world population. Within this line of thought, two different scenarios were posited: whereas Neo-Malthusians seriously questioned the ability of farmers to cope with the rapid increase in population, particularly in southern Asia (Commander 1986), others, adopting

a more western perspective, observed the remarkable productivity gains in the farming sector and concluded that only half of the land would have to be farmed (Kuhlmann 1986). In any case, agriculture was merely the location of a production function in which labor, fertilizer, and other factors were to be transformed into wheat, rice, and beef. Organic agriculture and other attempts at environmentally sensitive farming were on the very fringes of society, viewed highly skeptically by initial government investigations (Paster 1980), their products largely absent from supermarket shelves.

By that time, the term “multifunctionality” had already been coined: in a book by a German forestry-policy researcher (Dietrich 1953), the existence of jointness and externalities was for the first time perceived as being a constituent element of an economic sector. With the description of this notion as the “multifunctionality of forests,” a new concept entered economics. At the time, however, hardly anybody took any notice of the phrase. Much later, the concept began to be revived for political discourse, with the result that the concept was still described as follows 20 years ago:

In his Vision 2020, Mr. Kienle [Secretary-General of the German Farmers' Union] talks about 'multifunctional' agriculture. He defines this as agriculture in one's own country which produces food and fibre, but which is also perceived as indispensable owing to its environmental tasks and societal functions. (Thiede 1992, p. 299; translation by S.M.)

Over the last 20 years, the theoretical concept of multifunctionality has undergone significant development. It is important to note, however, that the main impetus for this development has come from the policy process rather than from academia, most notably for the purpose of defending EU protectionism in international trade negotiations (Potter and Burney 2002). The next section of this paper sets out the main arguments of key international actors in the agricultural sphere. The final section then describes the potential impact of the concept of multifunctionality on agricultural ethics.

Why Is Agriculture Multifunctional?

While the Commission of the European Union has elaborated the notion of the multifunctionality of agriculture as a mainly normative concept (EEAC 2000), there is certainly no other organization which has contributed more decisively to challenging and elaborating the concept of multifunctionality from a theoretical viewpoint than the Agricultural Division of the OECD. The latter's analysis stands as a mainly environmental economic approach that essentially describes the multifunctionality concept as a tool for the appreciation and internalization of external effects. Changing shortages lead both to new functions of agriculture and to the creation of new markets for commodities and non-commodity outputs alike, with the ensuing problem of failing markets for some of these outputs.

A wide variety of jointly produced, largely mutually inseparable agricultural non-commodity outputs such as soil preservation, land degradation, landscape scenery, tradition, and employment were identified, classified, and defined by each participating country (OECD 2001a). The OECD secretariat formulated its stance, however, as follows: “The key elements of multifunctionality are: (i) the existence of multiple commodity and non-commodity outputs that are jointly produced by agriculture; and (ii) the fact that some of the non-commodity outputs exhibit the characteristic of externalities or public goods, with the result that markets for these goods do not exist or function poorly” (OECD 2001b, p. 8). It is becoming obvious that the OECD definition of multifunctionality is strongly output related: employment, for example, which is identified by the OECD as a non-commodity output, is also a necessary input in the production process.

Multiple commodity and non-commodity outputs are therefore the first key element making a production process multifunctional (OECD 2001b). With sheep production, for example, a wide variety of commodities such as meat, wool, and milk are produced as part of the process of sheep-rearing, rendering this activity multifunctional without even bearing in mind

the resultant non-commodity outputs or rather externalities. The sheep-production process is thus characterized by a number of outputs (i.e., commodities and externalities) that are interconnected. Generalizing this notion, all production processes allowing for all weight and energy fluxes are characterized by some sort of joint production (Baumgärtner and Schiller 2001). The radical view is that joint production is in fact a necessary characteristic of all production processes (Baumgärtner 2000). It would also appear necessary to extend the definition of production to nontechnical processes.

An even more important aspect is the “jointness” that exists between commodities and externalities. The relationship between commodities and externalities within the production process is becoming increasingly important, especially where the concept of traditional agriculture has changed and the relevance of the resulting by-products is therefore growing. A case in point, many European farmers are paid by the government to keep grassland open with the aim of producing the externality “biodiversity.” The process of keeping grassland open is mainly achieved by husbandry and thus by producing commodities. Were the farmer to increase livestock numbers, thereby increasing commodity production, the production of the externality “biodiversity” would arguably also increase to a certain extent. Thus, a complementary “jointness” exists between the externality of biodiversity and the commodity (wool, milk, or meat). Beyond a certain point, however, the increase in livestock numbers within a limited space would adversely affect biodiversity, owing, e.g., to the higher level of organic pollutants from the animals (competing jointness). Moreover, a backward-bending effect of the production curve is also conceivable. The larger number of animals would have a negative impact on the original population, due to a shortage of space and fodder alike.

Mann and Wüstemann (2008) have suggested that in addition to physical products and technological externalities, the range of outputs of a production process also comprises psychological, social, and human capital externalities. With such a broad interpretation of the concept of

multifunctionality, it is obvious that this term not only applies to the agricultural sector but would also be a powerful concept, for example, in the context of the provision of cultural services. Moreover, as Rørstad et al. (2007) have pointed out, it is not always useful to replace general support measures with programs targeting individual externalities. The transaction costs necessary for the administration of many small government measures may easily exceed the welfare gains from a more targeted policy. This applies particularly if some of the externalities are not amenable to a reasonable and realistic monetary evaluation.

Implications for the Ethics of Food Production

For a long time, discussion about ethically sound strategies of agriculture took place mainly in two different subgroups. Scholars with a deontological orientation emphasized the rights of different groups in agriculture. They described the support to poor peasants as an appropriate tool of social policy (Granberg 1999), focused attention on animal rights (Benton 1993), and mused about the need to preserve biodiversity (Zunino and Barbero 1993). Utilitarians, however, usually approached agricultural policy from a different angle: In applying public choice theory, they acknowledged the strong representation of the farmers’ union and considered subsidies for farmers as an outcome of political pressure (Balisacan and Roumasset 1987). At the same time, simple welfare-economics models convinced them that social utility could easily be maximized by leaving the agricultural sector to market forces (Anderson 1992).

The paradigm of multifunctionality has shown that utilitarians can easily reach similar conclusions to those of deontologists. If a given agricultural production process brings about a wide range of externalities that are relevant for personal utility, this indicates that the absence of government involvement will probably not lead to utility maximization. This allows the justification of sometimes massive policy interventions from a utilitarian perspective.

Take animal welfare as a case in point. Surveys have repeatedly shown that a number of populations are greatly concerned about farm-animal welfare (Bennett and Blaney 2007; Böbner and Vogel 2007). Chickens in cages or pigs on fully slatted floors appear to cause massive negative psychological externalities. Under these conditions, utilitarians may arrive at the same policy recommendations as deontologists, who claim that raising animals under such low-welfare conditions should be prohibited.

The multifunctional agriculture paradigm does not answer all questions raised concerning the formulation of appropriate agricultural policy. It does, however, clarify the position of those who are convinced that farming is much more than just calorie production.

Summary

Multifunctional agriculture describes farming systems with numerous positive externalities which only partly can be reasonably put into monetary values. The notion that utility can be maximized by broadly supporting agriculture brings the utilitarian approach closer to traditional rights-based arguments.

Cross-References

- Biodiversity
- Environmental Ethics
- Free Trade and Protectionism in Food and Agriculture
- Multifunctionality of Agriculture and International Trade
- Provision of Agricultural Ecosystem Services
- Virtue Theory, Food, and Agriculture

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Multifunctionality of Agriculture and International Trade

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Synonyms

Agricultural policy; Competitiveness; Cultural issues; Economic development; Food security; Global ecology; International trade; Sustainability; Trade policy; World governance

Introduction

As the guarantor of our subsistence, “agriculture is a security matter” (PISANI 2004). It is the oldest political issue and probably one of the most worrying in the years to come.

In the current framework of the World Trade Organization (WTO) agricultural trade negotiations, the aim of reducing, or even suppressing, the impossibly high custom tariffs of the 1980s has not been achieved and seems in fact to have reached its limits. These have been highlighted by the deadlocked Doha Round negotiations and the endless debates and disputes inherent to these talks. They might even point to the culmination of a system. The tariffs that have been immune to past efforts to reduce them now represent the core of national protective barriers, and the political cost of tariff reductions seems today way too high compared to their potential for economic gain. The July 2008 dispute between India and the United States, concerning the definition of the precise moment when a special safeguard mechanism can be triggered in case of falling agricultural prices or of a drastic increase of imports, is an example of the difficulties of reaching agreement in the current framework for agricultural trade negotiations.

Misunderstandings on agricultural policy are first and foremost cultural and political and are therefore extremely difficult to overcome. The scenario of a complete liberalization of

agriculture does not seem particularly relevant at the present time, and even though liberalization of trade in agricultural products is set in the WTO's agenda, that agenda is currently stalled and even be frightening to some. Consequently, instead of focusing on the “for-or-against” debate on agricultural free trade, should we not question the need to maintain agricultural policies that ensure food security, preserve the rural fabric, and encourage countryside planning as well as environmentally sustainable modes of production?

Agriculture is in fact much more than simply an economic activity. In developing countries, it employs the vast majority of the population, and it is also a particular type of lifestyle that answers a fundamental human need: hunger. Agriculture also fulfills many different functions: not only does it produce food, it creates jobs and boosts the rural economy. In addition, it is a crucial element of environmental management: farmers play a very important part as guardians and protectors of the land and living environments.

Given the lack of consensus on agricultural trade, the WTO has not managed to establish a negotiating framework that transcends the traditional issues of tariffs and subsidies, and this is probably the reason explaining the current deadlock in trade talks. In order for the WTO to be in a better position to address the concerns of its members and civil society on representativeness and legitimacy issues, it should integrate global sustainable development aims much more explicitly in its agenda.

Therefore, the idea would be to better take into consideration the social and environmental aspects of agriculture within trade negotiations in order to overcome the divisions that have stymied progress on the Doha Development Agenda. In fact, Article 20 (c) of the Uruguay Round Agreement on Agriculture as well as the November 2001 Doha Ministerial Declaration require that “non-trade concerns” be taken into account in the WTO negotiations (WTO 2001b). These social and environmental considerations of agricultural international law (food security, land access, and environmental concerns) refer, in fact, to the concept of the multifunctionality of agriculture.

The multifunctionality of agriculture is based on the concept of externalities (side or external effects) and public goods. More specifically, farmers may produce goods or services that possess the characteristics of externalities of productive activity affecting the well-being of citizens. Externalities can be positive or negative. They are not or insufficiently taken into account by the market.

Positive externalities refer to situations where citizens benefit from the action of the farmer without having to pay anything. Enhancement of the landscape and protection of biodiversity are examples of positive externalities generated by agriculture. However, for the farmer, the production of these goods or services may involve costs that are not internalized in the price of his or her products. We then say that there is market failure.

There are also negative externalities of agricultural production such as soil erosion, sedimentation, or pollution. If the farmer does not assume the costs that may be involved, it is the general public that may experience a worsening of its current and future well-being.

Public intervention may be necessary to remunerate the positive externalities of agriculture, corresponding to the expectations of society, or to compensate for and reduce negative externalities. To recognize the multifunctional character of agriculture is to recognize the positive externalities of agriculture.

Legal Recognition of the Multifunctionality of Agriculture

Since the Club of Rome called for, in 1968, a “zero-growth” approach in order to offset the increasing scarcity of natural resources, concerns about the environment as well as about natural resources and their renewability have multiplied in all relevant international fora. International law recognizes, and has done so for many years now, the concept of a multifunctional agriculture. This concept made its first appearance in the Agenda 21 adopted by the UN in Rio in June 1992 during the “Earth Summit.” The Quebec

Declaration, adopted in 1995 during the Food and Agricultural Organization’s (FAO) fiftieth anniversary conference, as well as the 1998 OECD (Organization for Economic Co-operation and Development) ministerial conference also explicitly refers to it.

The introduction of the notion of multifunctionality in agricultural trade negotiations originates in the final agreement of the Uruguay Round which recognizes the importance of taking into account the “non-trade considerations” specific to each state in the process of liberalization. During this round, the European Union (EU), Japan, Norway, and Switzerland put forward the possible consequences of rapid and deep agricultural liberalization for the environment, national food safety, and the risks of destabilization of the agricultural sector. Joined by Korea and Mauritius, these countries constitute the group known as the “Friends of Multifunctionality” at the WTO.

Thanks to this group of countries, these concerns are included in the Agreement on Agriculture and referred to as “non-trade concerns”: “commitments under the reform program should be made in an equitable way among all Members, having regard to non-trade concerns, including food security and the need to protect the environment” (paragraph six of the Agreement on Agriculture’s preamble). According to Article 20 (c), these concerns should be taken into account in the agricultural trade talks that started on January 1, 2000, in accordance with the agenda set in the agreement: “recognizing that the long-term objective of substantial progressive reductions in support and protection resulting in fundamental reform is an ongoing process, Members agree that negotiations for continuing the process will be initiated one year before the end of the implementation period, taking into account (...) non-trade concerns” (Article 20, Continuation of the reform process).

During the conference on non-trade concerns in agriculture held in July 2000 in Ullensvang, Norway, a number of WTO members expressed their openness toward the issue of non-trade concerns in agriculture, particularly so in the rural development, food security, and environmental

protection sectors. In a joint note on non-trade concerns, submitted to the Special Session of the WTO committee on agriculture in November 2000, 27 member countries declared that “Every country has the right, in accordance with mutually agreed rules, to address non-trade concerns, such as strengthening the socio-economic viability and development of rural areas, food security and environmental protection, and promoting the coexistence of various types of agriculture.”

The concept of the multifunctionality of agriculture quickly emerged as a controversial concept. Indeed, this concept has sometimes been interpreted as having implications for trade and protectionism, some countries justifying further subsidies based on this concept. Following the controversy caused by this debate, the Organization for Economic Co-operation and Development (OECD) tried to formulate an analytical framework for the concept of “multifunctional agriculture” based on the following points (OECD 2001):

- “the existence of multiple commodity and non-commodity outputs that are jointly produced by agriculture;
- the fact that some of the non-commodity outputs exhibit the characteristics of externalities or public goods, with the result that markets for these goods do not exist or function poorly.”

The OECD also formulates two possible approaches to the analysis of multifunctionality, interpreting it either as a characteristic or as a goal:

- The positive approach consists in interpreting multifunctionality as the characteristic of an economic activity. The particular characteristic that makes an economic activity multifunctional is its multiple, interconnected outputs or effects. These outputs can be positive or negative, intended or unintended, complementary or conflicting, and reinforcing or offsetting. Some of the outputs are valued in existing markets, whereas others may elude the market mechanism. Multifunctionality, interpreted in this way, is not specific to agriculture; it is a property of many economic activities. There are numerous ways in which economic activities can be multifunctional. A certain activity may be multifunctional or

not, but there is no implicit notion that it should be multifunctional.

- The normative approach defines multifunctionality in terms of the multiple roles assigned to agriculture. In this view, agriculture as an activity is entrusted with fulfilling certain functions in society. Consequently, multifunctionality is not merely a characteristic of the production process, but it takes on a value in itself. Maintaining a multifunctional activity or making an activity “more” multifunctional can become a policy objective.

The positive approach, chosen by the OECD, leads to purely economic reasoning consisting in identifying goods and services in terms of supply and demand equilibrium models. This is, in terms of public policy, an extremely reductive way of seeing things compared to the normative approach. The European Union (European Commission 1999) and the FAO (2004), on the other hand, have chosen the second approach. As highlighted in the European Commission’s report, agriculture is multifunctional because it is not simply limited to the production of agricultural commodities; it also has to guarantee food safety, protect the environment, and sustain rural employment. The agricultural sector’s unique features are put forward in order to explain the specific role of agriculture in society: agricultural production as a nature-bound process, facing inelastic demand, situated in space, as well as having particular strategic and cultural characteristics. This approach is a more cultural- and identity-based approach, superimposed on a purely market-based approach.

The Stance of Advocates of Multifunctionality

Supporters of multifunctionality consider that agriculture fulfills several functions, in addition to the production of food and agricultural goods. These functions derive from the specific nature of the agricultural sector as well as from the socio-logical, economic, historic, and cultural context in which agriculture is situated. These supporters recognize agriculture’s role in environmental and landscape protection as well as its importance in rural development. They equate the multiple roles of agriculture to the delivery of goods and

services of general interest. Due to their public character, these goods and services cannot be produced by the market in sufficient quantities to meet social demand and, above all, cannot be obtained by any means other than agricultural activity.

The potential for agriculture to yield environmental services is now widely recognized among the OECD countries. For example, it is stated in an OECD document that “the provision of environmental benefits and amenities is increasingly seen as an element of the multifunctionality of the agricultural sector.” The word “amenities” is important because it differentiates the concerns of industrialized countries from those of developing countries, with those of the former focusing primarily on protecting agricultural landscapes and those of the latter focusing on the resource-protecting services – prevention of soil erosion and watershed protection, for example – without which food security may be threatened.

Developed country advocates of multifunctionality (EU, Japan, Norway) thus call for a review or an enlargement of the criteria defining the measures that are exempt from the reduction commitments made under the WTO Agriculture Agreement. Norway, for example, considers that the support granted to agricultural production destined for the domestic market should be subjected to less stringent reduction commitments than those for traded commodities. Korea wishes to see new measures, especially compensatory supports for the multifunctionality of agriculture, exempted from reduction commitments. Korean delegates are concerned about restrictions on “supports for maintaining domestic production capacity of staple crops for food security purposes,” as well as support measures designed to strengthen producers’ income safety nets, help small farm households, and boost agricultural and rural development in developing countries. Finally, Japan has called for an improvement of the criteria for green box designation (subsidy reduction exemptions for policies related to the environment) in order to be able to better take into account the public aspects of agricultural production.

The Arguments Against the Recognition of the Multifunctionality of Agriculture

The countries that have expressed the strongest reservations regarding multifunctionality are those in the Cairns group (especially New Zealand, Australia, South Africa, and Argentina) as well as the United States. For representatives from these countries, the multifunctionality argument is more precisely described as the claim that agriculture generates positive externalities in addition to the primary output, food. Externalities, which can be both positive and negative, arise when the private costs and benefits of economic activities differ from the social benefits and costs of these activities. Economic agents are influenced by the private costs or benefits ignoring the social impacts. The costs of negative externalities are borne by society as a whole rather than the individual decision-maker, while the benefits of positive externalities are uncompensated.

From this perspective (essentially, the positive approach described above), multifunctionality is not specific to agriculture, as every economic activity inevitably generates externalities. Moreover, in this regard, national or domestic agricultural industries are not necessarily intended to guarantee food security and the viability of rural communities, especially in developed countries. Food security should rather be seen as a joint product or as an externality of trade rather than an outcome of national production. Diversification of supply sources constitutes a better strategy than the sole development of national supplies against the risk of supply shortages, the latter being subject to meteorological, phytosanitary, or sanitary uncertainties. Greater trade liberalization would contribute to the stabilization of global commodity prices, especially by eliminating the disruptive effects generated by states’ trade and agricultural policies and by reducing climate risks. Similarly, the viability of rural communities is considered to be more closely related to other sectors or to the agrifoods sector as a whole rather than to the agricultural sector itself, considering particularly the declining importance of agriculture in industrialized countries in terms of jobs and contribution to rural income.

Opponents of multifunctionality suggest that every single country has legitimate non-trade concerns and objectives, but these remain subject to “the long-term objective of substantial progressive reductions in support and protection, resulting in fundamental reform” of the agricultural sector (Article 20 of the Agreement on agriculture). Continuing the reform process is still the best way of boosting growth and development. According to these countries, multifunctionality is being used as an excuse to maintain trade-distorting agricultural support, as increasing trade liberalization is not incompatible with pursuing the objectives related to multifunctionality.

The Divergent Views of Developing Countries

Given their heterogeneity, developing countries do not have a common position in agricultural talks.

The developing countries which are members of the Cairns group (they are all agricultural exporters) wish to see increased and accelerated agricultural trade liberalization and call for further opening of the domestic markets of partner countries to their products.

On the other hand, some developing countries have embraced the positions of the Friends of Multifunctionality (Barbados, Burundi, Cyprus, Estonia, Fiji, Latvia, Mauritius, Mongolia, Poland, Slovakia, the Czech Republic, Romania, Saint Lucia, Slovenia, Trinidad and Tobago). They argue that agriculture is a key sector in the pursuit of vital national objectives. With the Friends of Multifunctionality, these countries submitted a note to the WTO on non-trade concerns reflecting the achievements of the international conference held in July 2000 in Ullensvang, Norway (European Commission 2000).

Between these two extremely different positions is found a group of eleven countries that have proposed the creation of a development box (Cuba, Haiti, Honduras, Kenya, Nicaragua, Uganda, Pakistan, Salvador, Sri Lanka, Dominican Republic, and Zimbabwe). India also is favorable to a food security box. The suggested development box would group together a list of products to which domestic support or market

access commitments would not be applicable. Just like the special safeguard clause, mostly available to and used by developed countries, it would allow the implementation of a set of border protection mechanisms in the case of a drastic increase of low-cost imports endangering national production. Finally, it would include provisions aimed at facilitating access to developed countries' markets and would prohibit dumping. India, whose agricultural policy is traditionally quite close to that of the Friends of Multifunctionality, nonetheless denounces multifunctionality used as a way to justify high levels of protection. Its food security box aims at exempting intervention tools guaranteeing food security from liberalization commitments.

The Multifunctionality of Agriculture: A Guarantee for Its Sustainability

The agricultural question has once again become a geopolitical issue which will probably turn out to be increasingly complex given the demographic, environmental, and socioeconomic challenges of the twenty-first century. The current state of agriculture leads to a number of questions for the future, and for many of these, there is still no answer. The challenge will be to include the social and environmental aspects of agriculture in international negotiations in order to guarantee its sustainability. In 1931, Paul Valéry wrote in *Reflections on the World Today*: “And so begins the era of the finite world”...Something new must therefore begin. . . .

The Agricultural and Food Challenges of the Twenty-First Century

Over the next four decades, agriculture will have to face multiple challenges. First of all, there will be nine billion inhabitants on Earth in 2050 (compared to the current seven billion). The planet will therefore need to produce more with fewer agricultural workers given increasing urbanization. By 2015, one in two people will live in cities and by 2050 two out of every three human beings will be city dwellers, which means concretely that there will be more consumers but

fewer producers. Africa, for example, is thus expected to see its general population double and its urban population triple by 2040. Moreover, each year, 30 million hectares of land are lost in the world due to urbanization and industrialization. Last but not least, not only is the agricultural population shrinking but it is also getting older, especially in developed countries. Indeed, in most developed countries, only three to six percent of farmers are less than 35 years old (EUROSTAT 2010) – two thirds are over 55 – and one can thus legitimately question the sustainability and the durability of agricultural activity in these countries.

According to the FAO (FAO 2011), agricultural production needs to be increased by more than two thirds by 2050 in order to be able to face these challenges. Yet, the growth of agricultural production is decreasing and, each year, 30 million hectares of land are lost because of the sprawl of cities and transport networks. Moreover, the use of petroleum-based inputs will have to be reduced and global pressures on water resources will have to be curbed.

Agriculture is thus now at a historic turning point. Not only will it have to meet the demographic challenge of a need for increased production and the environmental challenge of preserving ecosystems, but it will also have to work toward raising the living standards of agricultural producers as there will clearly be no agriculture without them. Guaranteeing farmers a decent income will be crucial for global food security. Agriculture has a cost and we should have enough foresight to pay its price.

The Relationship Between Agricultural Sustainability and Competitiveness

The sustainability of agriculture inevitably raises the issue of its competitiveness. In order to be sustainable, an activity must be competitive: there is therefore a clear link between these two elements in a competitive and globalized economy. Yet, in certain areas of poor countries and even in developed countries, agricultural sustainability is clearly challenged by its lack of competitiveness. The question is now to know how competitiveness should be defined in a sustainable economy.

The aim of sustainable development (UNGA 1987) is to set and implement viable models that reconcile the economic, social, and environmental aspects of human activities. These are the three “pillars” of sustainable development which need to be taken into account by governments but also by companies and individuals. The ultimate purpose of sustainable development is thus to find a coherent and viable long-term balance between these three pillars.

When discussing agriculture’s multifunctionality, one should not limit the debate on competitiveness exclusively to economic criteria. Indeed, this debate should include the environmental and social aspects of the issue just as it seems obvious to establish the environmental and social history of a product in its price and cost of production.

The Explicit Inclusion of Sustainable Development Global Aims in International Negotiations

Future agricultural trade negotiations should clearly identify non-trade concerns of agriculture such as social and environmental considerations. Given the challenges associated with sustainable development, the recognition of the multifunctionality of agriculture will visibly constitute the main driver for the evolution of agricultural policy toward environmental respect and the aim of food security.

This approach would in fact question the multilateral *modus operandi* based exclusively on free trade: instead of being solely in charge of promoting free trade, the WTO would be put in charge of organizing and rationalizing the necessary protections needed by states in order to offset the negative impacts of trade liberalization as well as of safeguarding the positive externalities of agriculture in the environmental and food security sectors. As a result, the WTO would stabilize the trading system and would reduce protectionist incentives without completely inhibiting them. The challenge is thus to find the proper balance and to elaborate neutral solutions in order for countries not to be accused of defending particular interests. This calls for a generic definition of the criteria and degrees of

flexibility. This would enable the defense of protection motivated by non-trade concerns such as food security, environmental protection, and social considerations of agriculture.

The Doha Agenda was set on the basis of a hypothesis of overproduction and of a fall in agricultural prices amplified by agricultural policies which would distort the commercial advantages of developed countries at the expense of developing countries. However, today the trend has been completely reversed. Now the issue is not the need to handle surpluses and the deflation of international prices but to deal instead with scarcity and tensions on the agricultural market. It is therefore essential to update WTO rules in order for them to meet these new challenges and to rebalance them to face the social and environmental concerns of the twenty-first century.

In order to address these non-trade concerns, it could be envisaged to:

- Reformulate article XX of the WTO in order for it to define in a precise and updated way its principles and to integrate more explicitly sustainable development objectives (food security, environmental concerns, multifunctionality of agriculture)
- Coordinate the WTO rules with those of other international organizations (FAO, UNCTAD, UNDP) in order to correct the deficiencies linked to its overspecialization

Conclusion

Is there a right to difference? This is in fact the crucial issue of the debate on the multifunctionality of agriculture as well as on non-trade concerns. This debate is contentious because of political and cultural misunderstandings that are hard to overcome and the fact that the general objective of trade liberalization is often difficult to reconcile with the necessity of maintaining agricultural policies which ensure food security, preserve the rural social fabric and land use planning, as well as encourage environmentally sound production patterns.

The WTO Dispute Settlement Body itself has increasingly been taking into account non-trade

concerns. Through its interpretation of the Shrimp-Turtle case, for example, its Appellate Body permitted the adoption of unilateral measures for the protection of the environment (WTO, DSB 2001a). The Doha Declaration confirms this trend: "We recognize that under WTO rules no country should be prevented from taking measures for the protection of human, animal or plant life or health, or of the environment at the levels it considers appropriate" (WTO 2001b).

Arising from cultural, sociopolitical, and environmental factors, agricultural policies today express the aspirations of consumers for certain types of consumption patterns, the preferences for a certain type of production, and, more generally, the relationship between society and its diet and agriculture. The tensions arising from the hormone-treated beef and GMO cases illustrate perfectly Europe's and North America's different perceptions on these issues. But however contentious these North/North tensions can be, the North/South fracture is even more radical as the incorporation of sanitary, environmental, and social requirements in agricultural policies reflects the level of economic development and social demands while also being an obstacle to the import of Southern agricultural products to the developed countries' markets. According to Pascal Lamy "the issue of collective preferences in trade conceals a structural divide between the North and the South."

Of course, a state that imposes the respect of sanitary, environmental, and social norms in trade relations creates obstacles to trade. This also means that these obstacles are susceptible to be interpreted not as what they are or should be – the promotion of legitimate societal choices – but as a new form of protectionism.

Today, developing countries exert a great deal of pressure on developed countries to liberalize their agricultural policies, and this pressure will probably not enable multifunctionality or non-trade concerns to be put at the center of discussions because of their seemingly conflicting nature with the non-trade objectives of developing countries.

Since the WTO Agreement on Agriculture, developed countries have been invited to open

their borders not in order to encourage a modernized or more efficient agriculture but to favor agricultural models which, because of certain natural and social dispositions, permit cheaper production. But can the competitiveness of agriculture be still solely defined by its capacity to sell cheap agricultural products on the world market? And can the theory of comparative advantage, based exclusively on economic competitiveness and the lowest possible production costs, determine on its own the framework and substance of agricultural trade negotiations when agriculture needs to ensure food security, to guarantee the quality and healthiness of products, as well as to protect the environment and contribute to the vitality of rural areas? Given the challenges linked to sustainable development, economic competitiveness used as the sole criterion of international agricultural negotiations is now obsolete; agricultural prices should now also reflect the environmental and social cost of production.

Far from being a protectionist policy smoke screen, taking better account of the multifunctionality of agriculture constitutes a major evolution of agricultural policy toward good environmental practices and the objective of food security.

Summary

The agricultural question has once again become a geopolitical issue which will probably turn out to be increasingly complex given the demographic, environmental, and socioeconomic challenges of the twenty-first century. Over the next four decades, agriculture will have to face multiple challenges, and the test will be to introduce the social and environmental aspects of agriculture in international negotiations in order to guarantee its sustainability. Given the lack of consensus, the WTO has not yet managed to establish a dynamic negotiating process which is not limited to tariffs and subsidies, and this is probably the reason for the current deadlock in the trade talks. Article 20 (c) of the Uruguay Round Agreement on Agriculture as well as the

November 2001 Doha Ministerial Declaration requires that “non-trade concerns” be taken into account in the WTO negotiations. These social and environmental considerations of agricultural international law (food security, land access, and environmental concerns) refer, in fact, to the controversial concept of the multifunctionality of agriculture.

Cross-References

- [Biodiversity and Global Development](#)
- [Climate Change, Ethics, and Food Production](#)
- [Economy of Agriculture and Food](#)
- [Food Security](#)
- [Multifunctional Agriculture](#)
- [Sustainability of Food Production and Consumption](#)
- [Trade and Development in the Food and Agricultural Sectors](#)

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Multilateral Trade Organizations, Food, and Agriculture

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Synonyms

Agricultural trade; Ethics; Food security; General Agreement on Tariffs and Trade; Legitimacy; World Trade Organization

Introduction

The relations between ethics, agriculture, and multilateral trade organizations are complicated, both in terms of academic and policy debates. In the post-World War II period, the most powerful international trade institutions have been the General Agreement on Tariffs and Trade (GATT) (1947–1994), a treaty-based regime, followed by the establishment of a formal institutional structure in the shape of the World Trade Organization (WTO). Other agencies at the United Nations, notably the Food and Agricultural Organization (FAO) and the United Nations Conference on Trade and Development (UNCTAD), have interests in the links between agriculture and trade, but this entry will not debate these institutions. The discussion introduces and dissects debates that have revolved around the GATT/WTO system, divided into two main sections. First, there is a focus on political decision-making norms within the GATT/WTO system and how this culture shapes the scope for deliberation on agricultural trade ethics. Second, the entry probes some major aspects of recent WTO agricultural debates, including attention to questions of subsidies and food security.

Institutional Practices and Agriculture in the GATT/WTO System

The management of agriculture as a multilateral trade concern has been intensely fought over in the postwar period. For most of the history of the GATT, particularly in light of the establishment of the European Common Agricultural Policy in 1962, agriculture was granted an exceptional political status. This took the form of two major measures: (1) the legitimization of subsidies as long as they were proven not to increase market share (GATT Article XVI:3) and (2) the normalization of quantitative restrictions which enabled, among other outcomes, the application of export limits to prevent critical shortages of foodstuffs (GATT Article XI:2). Thus, while it would be wrong to say that agriculture was excluded from all GATT proceedings, there was little political energy to unlock and negotiate wider trade in agricultural goods. It was only in 1986, with the launch of the Uruguay Round of trade talks, that agricultural law was codified into a particular agreement. In 1995, when the new WTO system assumed responsibility for monitoring the implementation of the Agreement on Agriculture (AoA), some trade experts, although by no means all, expressed optimism that a fairer regime of agricultural exchange could be established. By 2001, as part of the (still ongoing) Doha Round, WTO members agreed to reopen negotiations on agricultural trade rules in an effort to realize a diverse range of material benefits.

How such recent negotiations have been conducted is one important dimension for any ethical analysis of the nexus between trade and agriculture. Similar to other international organizations, the WTO has been troubled, at times acutely, by problems of “input legitimacy” or “procedural justice” that inevitably shape the scope for material rewards (Brown and Stern 2012; Elsig 2007). Particularly in light of institutional debacles, such as the collapse of the Seattle Ministerial in 1999 amidst scenes of street protests, criticism has surfaced that the agenda-setting processes lack sufficient inclusiveness, transparency, and representation. Initially, such critics were found within particular governments,

notably Southern countries such as Brazil and India, who grew tired of being diplomatically marginalized. Other prominent voices that condemned decision-making practices included national farming collectives and unions; research-informed civil society groups, such as Oxfam; and some policy-relevant scholars who were close to the Geneva-led policy process.

Three sets of debates can be highlighted here. First, as one prominent analyst has expressed it, the “major and unsustainable discrepancy” in the business of rule making and decision making at the WTO has always been the coupling of an automatic and binding system of laws under powerful surveillance with the informal, ad hoc practice of bargaining and negotiation (Narlikar 2005, p. 42). The importance of informal political practices in establishing agendas and codes of conduct within the WTO is impossible to overstate, a legacy drawn from the diplomatic “club” culture of the GATT. But when informality becomes the institutional *modus operandi*, weaker actors are always vulnerable to manipulation through forms of power (Narlikar 2005; Eagleton-Pierce 2013). Second, the need to perform effectively in negotiating arenas is closely tied to the technical resources and competences of each government. Historically, in terms of legitimacy, concerns lay in several aspects of the negotiating processes, including legal expertise, access to elite “green room” forums for select members, the core protocols on the negotiation of rules, issue linkages, and the role of the secretariat. Third, the question of representation remains a vexed problem: is the WTO’s legitimacy sufficient on the basis of the “collective” legitimacy of individual states (even when many may exhibit poor forms of domestic democracy and protest opportunities), or should the organization welcome greater parliamentary and civil society oversight and engagement? (Shaffer 2004; Charnovitz 2004). Whether one conceptually views this search for deliberative legitimacy in terms of a focus on the optimal allocation of powers or, more amorphously, through multilevel governance within the system is one notable qualification.

Inequities in the organization and conduct of WTO agricultural talks have not, however,

remained fixed. In 2003, at the Cancún Ministerial, three major Southern country coalitions arose to contest the tendency of the USA and the EU to monopolize decision making: the G20 (led by Brazil, India, and China) on offensive agricultural interests, the G33 (led by Indonesia and the Philippines) on defensive rural development concerns, and the Cotton-4 (Benin, Burkina Faso, Chad, and Mali) which targeted the removal of cotton-specific subsidies. Researchers have explored how these coalitions have worked to reconfigure the WTO negotiating environment. Within a largely positivist methodology, literature by Narlikar and Tussie (2004) and Odell (2006) has unpacked some of the factors behind effective coalitions, including comparing bloc and issue-specific groupings, the utility of material and diplomatic resources, leadership questions, and the means for managing criticism. Elsewhere, within a more critical sociological reading on symbolic power, Eagleton-Pierce (2013) has tracked how the G33 and Cotton-4 successfully drew upon different argumentation strategies in an effort to gain recognition in the WTO order.

Ethical Concerns and the WTO Agricultural Agenda

The very notion of “ethics” does not easily fit into the institutional vocabulary of the WTO’s agricultural agenda, nor do trade analysts and scholars commonly invoke it. The subject matter of neoclassical economics, which serves as a font of theoretical inspiration for most participants and knowledge producers on trade, has consistently eschewed explicit questions of ethics. This is regrettable given that classical political economists in a pre-disciplinary academy, such as Adam Smith, always incorporated ethics into their conceptual schemas. Nevertheless, one can point to ethical tensions and dilemmas that resurface in negotiations over agricultural trade, even if such contests are conventionally explained through other concepts and guises.

Perhaps the starkest ethical concern has centered on the distributional effects of OECD government measures on resource-poor countries

in the trading system. Many Southern countries have a disproportionate reliance on agricultural trade for export revenue, employment, and, by association in many instances, political stability. For instance, as a percentage of GDP, agriculture averages 10.3 % in Southern countries, with an annual growth rate of 2.9 %. By contrast, in Northern countries, the sector forms just 2.4 % of GDP, growing only slightly by 0.8 % per year (FAO 2006). In terms of the economically active population in Southern countries, 53 % are engaged in agriculture-related work. Dependence upon the export of three or fewer agricultural products for foreign exchange remains a critical problem for many countries (FAO 2004). At the same time, Northern country support programs that restrict access to wealthy markets, generate large surpluses, and subsidize exports. Many critics have noted the transferring of government support funds to a concentrated number of large agricultural firms. For instance, according to the Washington DC-based Environmental Working Group, among subsidy recipients, the top 10 % of US farms collected 73 % of all subsidies (\$121 billion out of \$165 billion) from 1995 to 2005, an annual average of \$34,190 per recipient. In 2009, across the OECD as a whole, it was estimated that the value of support to producers was US\$252 billion (OECD 2010). Farmers in Southern countries are often excluded from these Northern markets and forced to compete against heavily subsidized competition in international and even local markets.

As a result of these material conditions, the political relevance of WTO negotiations on agriculture has been closely associated not only with efforts to close the Doha Round but also with the overall legitimacy of the WTO system itself. How the reform of the AoA is now intimately tied to notions of fairness or “diffuse reciprocity” in trading relations and, more broadly, international politics cannot be overestimated. Representatives from Northern governments seldom miss an opportunity to preach the virtues of trade openness and external integration strategies with the capitalist system, while remaining resolutely protectionist themselves in key subsectors and categories. The agricultural rules in the WTO

system largely perpetuate a system under which the distribution of agricultural trade is shaped not by comparative advantage in terms of competitiveness but by access to subsidies, an area in which privileged countries have an unrivalled advantage. While some modifications and policy reforms have been introduced by Northern members, failure to fundamentally change these conditions will inevitably reinforce a perception that WTO rules skew the benefits of trade towards the North. The degree to which the increased international awareness of inequities in trading relations actually impacts on the WTO agenda can be debated, but there is no doubt that the backdrop is considerably different compared to the years of the Uruguay Round.

Another related ethical tension involving the WTO agricultural agenda has pivoted around the relationship between definitions of food security and trade policy. The idea of food security was incorporated into the AoA text, but there have been criticisms that the notion largely privileges OECD country concerns. Within the preamble, Article 20, and provisions in Annex 5, food security is classified under what are called “non-trade concerns.” The basic premise behind this larger category is that agriculture serves many purposes beyond what is commonly recognized as “trade” – that is, the production and sale of commodities – and that such distinctions need to be acknowledged in multilateral rules. Since the conceptual debut of “non-trade” at the end of the Uruguay Round, the naming and classifying of topics under the heading has remained ambiguous. Countries have preferred to offer illustrative (rather than indicative) lists of “non-trade” items, going beyond food security to include ideas about environmental integrity or cultural preservation (Smith 2012). It is crucial to note that the dominant actors who shaped the legal meanings of food security in the Uruguay Round were not Southern members, but principally Japan, the EU, and the Nordic countries. In subsequent policy debates, the EU’s heavy promotion of the concept of “multifunctionality,” characterized as a subcategory within “non-trade,” worked to complement and reinforce these meanings.

Yet, when analyzed holistically, there are perhaps more profound problems with how food security is conceptualized in the AoA. One only needs to glance at the vast academic and policy literature on the subject to appreciate that it is much more than simply government stockholding, a provision that can be exploited in the rules. Rather, the concept has been progressively stretched in multiple directions and spawned a variety of potential ideas. Since the 1970s, there have been changes in thinking that have reshaped what “food security” means: from the global and the national to the household and the individual, from a food-first perspective to a livelihood perspective, and from addressing objective indicators to subjective perceptions (Shaw 2007). The FAO’s (1996) definition often serves as a contemporary starting point for many analysts: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” Thus, the issue of food security may indeed go beyond the commercial model of farming and the supremacy of the price mechanism. As Aileen Kwa and Walden Bello (1998, p. 2) have argued in their critical reading of the AoA, “*real* food security raises questions such as who has access to the land, who produces, who makes the decisions, who will eat, and whether or not the food produced is culturally appropriate.” And yet these multiple perspectives and meanings, derived from a range of analysts, have found little home at the WTO, or at least not in its early life prior to 2000.

Since 2003, however, as a result of the efforts of the G33 coalition in the Doha Round, there has been some movement towards rethinking the nexus between food security and WTO policy. Research promoted by the FAO and civil society groups has also helped to spark and engender policy debates in this area. Although a Doha settlement has yet to be reached (and may never be), the creation of the category of Special Products (SPs) in agriculture talks is still significant. SPs have provoked discussion on the limits of trade liberalization and how, in particular, Southern countries could protect certain critical goods

from tariff reductions if it can be shown to benefit domestic livelihood security and rural development. Discussions between governments have centered on which products could be defined as “special,” how the evidence for differential treatment can be formulated, and what material consequences would be generated by such instruments. Major agricultural exporters, including the USA and the Cairns Group (led by Australia and Canada), have been most vocal in opposing SPs. But it is also important to recall that any implementation of SPs would result in significant disturbances in South-South trade patterns. For instance, Thailand, as the lead rice exporter in the world, has been concerned that other countries would specify rice as an SP. Malaysia also signaled that exports of its palm oil could be undermined if other countries, such as India, chose that product as an SP.

Summary

Researchers of WTO agricultural issues have historically not addressed their analytical problems through the category of ethics. At a deeper level, such a lacuna can be explained by how the major structures of knowledge production on international trade – neoclassical economics and law – tend to marginalize the unpacking of ethics. Yet despite this absence, analysts may deploy alternative conceptual vocabulary that grapples with certain ethical tensions and dilemmas in WTO agricultural debates. As noted, this has primarily surfaced in both scholarly and political discussions on the meaning of “fairness” and reciprocal exchange in trade talks. In particular, since 2003, coalitions of Southern countries have slowed down the pace of WTO political negotiations in order to defend their perceived interests. Within these moves, agriculture has come to dominate the Doha Round to a greater extent than was envisaged by the EU and the USA. The AoA was a historical accomplishment in terms of its initial formulation, but it has left a tangled labyrinth of rules that in many areas legitimize government subsidies of rich countries. Internationally, access to such government measures

will always be uneven, with distributional consequences in terms of competitiveness and livelihoods.

To conclude, there are some additional areas of research that need to be explored at the interface between ethics and WTO agricultural reform. First, in light of the ecological threat posed by a carbon-constrained world, scholarship needs to explore the extent to which WTO agricultural rules and practices contribute to forms of environmental injustice. For instance, at a higher level of policy abstraction, does the AoA promote a commercialized food system that is fundamentally unsustainable to ensure the preservation of agriculture? Second, and in a related sense, how can one analyze the emergence and material effects of biofuels in relation to WTO disciplines? If biofuels have been one contributing factor in commodity price volatility, including raising food import costs for resource-poor countries, what role does the WTO serve (if any) in limiting or managing such instability? A final under-researched area would center on larger questions of corporate or “market power,” including the financialization of trade in commodities. Further scholarship is needed to understand how major transnational agricultural businesses structure the scope for material impacts and work with political elites to further particular capitalist interests.

Cross-References

- [Agricultural and Food Products in Preferential Trade Agreements](#)
- [Food Security and International Trade](#)
- [Multifunctionality of Agriculture and International Trade](#)
- [WTO Dispute Settlement and Food and Agricultural Trade](#)

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NAFTA and the Food and Agricultural Industries

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Synonyms

Economic integration; NAFTA; National food regulation

Introduction

The North American Free Trade Agreement (NAFTA) took effect on January 1, 1994. Ethical controversies arising from NAFTA policies, rules, and procedures reflect its character as more than a regional trade agreement designed to lower barriers to trade across US, Canadian, and Mexican borders. It offers far-reaching guarantees to the rights of foreign investors across NAFTA member state borders, including rigorous protection of intellectual property rights – exceeding World Trade Organization (WTO) standards. In particular, NAFTA prohibitions and sanctions against a variety of “nontariff barriers” have raised ethical concerns about a threat to national sovereignty and democratic control in promulgating and enforcing domestic health and environmental regulations, including food safety standards.

Ethical concerns raised by NAFTA may best be framed as a failure of “moral imagination,” which Patricia Werhane (1999) defines as “the ability to perceive that a web of competing economic relationships is, at the same time a web of moral relationships” (p. 5). From this absence of moral imagination arises the all too common phenomenon of “moral amnesia,” which Werhane defines as “an inability to remember or learn from one’s own and others’ past mistakes and to transfer that knowledge when fresh challenges arise” (p. 7). As a consequence, “mental maps” or “cognitive scripts” that shape business decisions within the narrow confines of economic “rationality” tend to prompt a “setting aside of moral considerations in the pace of business activities” (p. 11).

Moral Amnesia and the Paradox of Globalization

This absence of moral imagination is suggested by Dani Rodrik (2011), a Harvard political economist, when he notes a “globalization paradox” whereby aggressive and inflexible extension of international free trade theory, embodied in a push for “*hyper-globalization*,” places constraints upon a nation’s sovereign jurisdiction and democratic traditions. Such traditions sanction political intervention to buffer the negative impacts of economic forces or business activities upon social or environmental stakeholders.

International trade economists and lawyers point to the hypothetical benefits of *unrestricted* global market production and exchange choices. This theory holds that regions, nations, and firms will prosper to the extent that their productive activities leverage a “comparative advantage,” grounded in favorable mix of “factor endowments.” Since factor proportions of labor, capital, and natural resources are assumed to be relatively static or fixed over time, it follows that entrepreneurs who engage in productive activities at locations with an optimal mix of factors will create opportunities for mutually advantageous specialization and exchange. When productive knowledge is included as a more dynamic or developmental factor, international intellectual property guarantees via patent, copyright, trademark, and trade secret protection provide corporations with incentives to develop and extend their “firm-specific advantage” across national boundaries (Smallson 1994). The favorable global and local welfare implications of international trade and production are said to reap “gains from trade” that are baked into the culinary metaphor of a “growing economic pie” and in the benign seagoing vision of a “rising tide that lifts all boats.” Rodrik questions the rigidity of this neoliberal trade policy formulation, pointing instead to the possibility of a more flexible international trade regime in which the hyper-globalization narrative is balanced by a regard for the legitimacy of national sovereignty concerns and the need for democratic oversight of the social and environmental impacts of international trade rules. This essay will adopt the complementary frames of analysis of Werhane and Rodrik with regard to the ethics of food policy within the NAFTA policy regime.

Tom Friedman’s Neoliberal Recipe for “Hyper-Globalization”

By way of contrast, Tom Friedman (2000) in his best-selling paean to neoliberal orthodoxy, *The Lexus and the Olive Tree*, captures and strives to resolve the paradoxical tensions within the globalization narrative. The Lexus epitomizes the

technological and material benefits of globalization, whereas the olive tree suggests the persistent appeal of local rootedness in culture, ethnicity, and a sense of place. Friedman stipulates the “golden rules” that frame the *golden straight-jacket*. He insists that nations have no choice but to do this constraining garment, if they are to reap the alchemic benefits of “winner takes all” stardom on the “flat world” stage. He deems the straightjacket of a “free market” policy regime to be mandatory, since national “flexibility” in the application of golden rules would dim the stellar sheen of their global finery. This neoliberal nostrum of policy measures, also known as the “Washington Consensus,” stipulates that countries desirous of going global must remove cross border restrictions on trade and capital flows, privatize state-owned firms, rigorously pare back government regulations and social or industry subsidies that balloon government budget deficits, raise inflationary pressures against currency stability and convertibility, and stifle the “creative destruction” of capitalist innovation. When negotiating trade agreements, international trade experts decry calls for consideration of environmental, labor, or other human rights concerns on the grounds that environmental or social policy “side agreements” merely “muddy the waters” in striving for a “clean” economic trade pact.

In Tom Friedman’s globalization narrative, the *electronic herd* of long- and short-term investors is anointed as the bullish driver of global growth, spreading gold wherever nations and their denizens don their straightjackets like good global citizens. In the new sartorial era where “one size fits all,” Friedman finds a world where “your economy grows and your politics shrinks” (2000, p. 105). Policy initiatives are reduced to the choice between Coke and Pepsi as politicians exercise their “synchronized swimming” skills (p. 107). The threat of capital flight (stampede) out of countries that grossly violate the golden rules, or even a refusal by the electronic herd to graze in less inviting pastures, is taken to be a formidable deterrent to removing or adjusting the golden straightjacket.

NAFTA trade courts have supported this hyper-globalization agenda by offering

extraordinary reinforcement of the rights of capital enjoyed by the electronic herd within NAFTA via Chapter 11 trade courts. These tribunals provide oversight of national or local regulations that may threaten foreign investment profits in a manner considered “tantamount to expropriation.” They also have worked to “harmonize” member state regulation of environmental, food safety, and other health hazards that proponents of hyper-globalization challenge as potentially excessive and surreptitious nontariff barriers to international trade and investment.

NAFTA’s Chapter 11 Trade Court Protection of the Rights of Foreign Investors

NAFTA trade tribunals are designed to arbitrate private contractual disputes, even though Chapter 11 cases raise significant public policy concerns. NAFTA trade panels have held that “incidental interference” with the property rights of a foreign investor may constitute a “regulatory taking” that is “tantamount to expropriation.” In one celebrated case, a US firm, Metalclad, acquired a Mexican property that had been used previously as a hazardous waste dump. The local Mexican government refused to issue a construction permit until Metalclad had addressed local concerns about heightened cancer and birth defect rates by remediating a legacy of air and water pollution violations. Metalclad refused to agree to such remediation. The provincial government supported the local government stand by creating an ecological preserve at and around the waste site. Metalclad filed a Chapter 11 complaint and asked for \$90 million in damages from the Mexican federal government. The NAFTA trade court awarded Metalclad \$15.7 million in damages on the grounds that the Mexican government had violated the “minimum standard of treatment” guaranteed to foreign investors within NAFTA member states. The award was subsequently reduced by \$1 million on procedural grounds (Public Citizen 2012).

In a similar case in California, a state regulatory agency banned the gasoline additive, MTBE

(methyl tert-butyl ether), on the grounds that it had been determined to be carcinogenic under very low levels of contamination, if treated fuel leaked into the groundwater. A Canadian company, Methanex, sued the US government on the grounds that this state regulation was “tantamount to expropriation” in that it precluded potential profits from sale of the banned fuel additive. Even though this complaint was dismissed on procedural grounds, it still reveals an unresolved jurisdictional conflict between NAFTA trade courts and US (and other member state) legal systems. Article III of the US Constitution creates a federal judicial system. To preserve judicial independence, the Constitution holds that Congress cannot delegate the “essential attributes” of the judiciary. Yet it appears that this is what Congress did in creating the NAFTA trade court mechanism. The US Supreme Court has held that government regulations to protect the public interest do not constitute a regulatory taking if there is “incidental interference” with the rights of property owners to pursue profits (such as draining protected wetlands to grow crops). Yet this is precisely what NAFTA trade tribunals have asserted – and Chapter 11 rulings are not subject to appeal or oversight by the federal court system. US government agencies enjoy the right of “sovereign immunity” against lawsuits by its own citizens. However, the shield of sovereign immunity is notably absent in the case of potential damage claims by foreign investors in Chapter 11 trade courts. Successful Chapter 11 claims and settlements are still relatively modest at 35 million dollars as of 2007. However outstanding Chapter 11 claims amount to billions of dollars. Ultimately, US (or Canadian and Mexican) taxpayers are vulnerable to huge damage claims if this jurisdictional anomaly is not resolved in a way that restores national sovereignty and democratic control.

Moreover, the practice of resolving these investor claims and other trade disputes behind closed doors, without the right of interested persons to testify, submit amicus briefs, or become a party to the suit is troubling, to say the least. Even the threat of a Chapter 11 complaint can chill public interest legislation. This was the case

when the Canadian government withdrew proposed tougher warnings on tobacco ads, when threatened by a Chapter 11 claim by US tobacco interests. In a parallel case, the provincial government of New Brunswick in Canada dropped its proposal to offer low-cost public auto insurance after being threatened by a Chapter 11 claim by US auto insurance companies.

NAFTA's Downward Harmonization of Regulatory Standards

Harmonization of regulatory standards across national or local jurisdictions within NAFTA is intended to minimize anomalies that may create "nontariff barriers to trade." Since US federal and state regulatory standards tend to be more stringent than those of Canada or especially of Mexico, the outcome of harmonization is growing downward pressure on US regulatory standards. Moreover, NAFTA standards are presumed to be equivalent to international World Trade Organization (WTO) standards. Consistent with the hyperglobalization preference for resolution of trade disputes via secret adjudication by technical experts (letting economics grow and politics shrink), international regulatory standards are promulgated by secret trade panels of technical "experts." Since industry spokespersons can pose as "expert witnesses" to these panels, while public voices and outside scrutiny of secret testimony are denied, regulatory standards tend to be industry friendly and therefore less stringent in safeguarding against environmental or public health hazards. NAFTA decrees that food safety standards must be based on "scientific principles" and subject to risk assessments. Since there is little consistency among US food safety standards promulgated in different jurisdictions and over different time periods, US food regulations pertaining to exposure to pesticides, food additives, microbial contamination, and food irradiation are subject to trade dispute challenges by importers of foodstuffs, opening the way to serious dilution of inspection standards and procedures. Thus, an absolute ban of a pesticide such as DDT could be challenged on the grounds that permitting trace

amounts of the chemical would provide reasonable protection with minimal risk.

While harmonizing downward regulatory goals, NAFTA trade dispute resolution tribunals have also limited the means for achieving regulatory ends. NAFTA and the preceding US-Canada Free Trade Agreement require that signatory states allow imports subject to different but "equivalent" standards and inspection processes. Adopting this guideline, the United States stopped inspecting Canadian meat at the border for listeria contamination, accepting as equivalent a Canadian inspection of meat-packing operations more generally. Critics charged that these food safety regimes were not equivalent, since the rejection rate for Canadian meat imports dropped by half after the end of border inspections. NAFTA pressure to harmonize regulatory processes also poses a threat to the more stringent US inspection of Mexican fruits and vegetable imports, which tend to have higher residues of DDT and other pesticides (Goldman 1993, p. 4).

NAFTA does not allow import restrictions based on the adverse effect of a production process upon claims of environmental or health damage. A trade dispute brought by Mexico to WTO trade courts illustrates the potential ill effects of potential future NAFTA trade court rulings. The Mexican government charged in 2008 that US legislative and judicial rulings establishing the basis for restricting importation of tuna to those caught via "dolphin safe" means constituted a nontariff barrier to trade. A WTO appeals panel found that a US ban on Mexican tuna fishing practices which targeted areas in which dolphins were present discriminates against Mexican tuna exports to the United States. Such alleged discrimination was based on the WTO panel's finding that the US dolphin-safe law was "not even-handed in the manner in which it addresses the risks to dolphins arising from different fishing techniques in different areas of the ocean" (WTO Dispute Settlement DS 381, 12 October 2012, p. 4). The perverse "logic" of such technical harmonization by a WTO (or potentially a NAFTA) trade panel undermines democratic control over national or local regulatory processes. It also undermines public policy

efforts to preserve the global commons or endangered species. The adverse environmental and human impact of NAFTA rules on Mexican corn growers is another case in point.

NAFTA and Mexican Corn Farming

The NAFTA theory of comparative advantage justifies scaling back and eventual elimination of tariffs on protected Mexican maize production on the grounds that free trade conditions will create competitive pressures that reallocate human and natural resources toward their “highest and best use.” As productive resources shift toward different economic sectors that can gain advantage from more favorable factor proportions, free trade theorists argue that Mexico’s international trade competitiveness will improve. Developments on the ground suggest otherwise. Prior to the ending of protection for Mexican maize, three million small family farms (averaging five family members each) were occupied in maize production. Thus, 15 million peasant farmers and 7 million others engaged in transporting, distributing, and processing maize products were employed in this sector. NAFTA trade rules forced two million maize workers off of the land. Although one-quarter of Mexicans live in the countryside, they account for 44 % of migrants to the United States. Most of the more mobile farmworkers were young men who sought their fortunes via illegal immigration north of the border. All too often, they sought their fortune in the illicit drug trade. Alternative jobs in seasonable vegetable and tropical fruit crop production failed to absorb many of the displaced farmers. The promise of growing labor-intensive manufacturing employment failed to materialize as domestic import substitution manufacturing jobs dried up and foreign investors tended to import components from abroad to take advantage of low-cost assembly in Mexico. When China joined the WTO in 1998, Mexico lost its labor cost advantage and the bulk of labor-intensive assembly operations of the electronic herd shifted to Asia (Malkin 2009, pp. 1–3).

Ironically, as US corn imports to Mexico have risen from 7 % of Mexican consumption in 1994 to 34 % of consumption in 2011, the incidence of malnutrition in Mexico has risen sharply (Carlsen 2011, pp. 1–2). The bulk of these US corn imports have gone to agribusiness animal feed operations and to cornstarch production. Small family farms in Mexico are being displaced by the rise of large-scale government-subsidized agribusinesses in Mexico, as well as by surging US corn imports, which also benefit from substantial US government farm commodity subsidies. Such indirect government export subsidies of farm products from the United States and Europe have been challenged by developing countries in WTO trade talks, but to no avail. Thus, NAFTA trade rules have reinforced the “corporatization” of agriculture in the United States as well as Mexico. Corn production has actually increased in Mexico since NAFTA came into effect, but at the expense of small farm displacement and to the advantage of large corporate farms and food processors. This has had the effect of sharply increasing income inequality in Mexico while sapping the vitality of rural life as small farmers retreat to subsistence. Small family farmers cannot afford the expensive hybridized, often genetically modified, corn seed imports from the United States. Such seeds require more water, fertilizer, and pesticides in order to increase yields. Large agribusiness firms grow as small family farms are pushed to the margins (Johnson 2011, pp. 1–2).

The consequences for Mexico’s biological commons are also disturbing. US importation and planting of genetically modified seeds in Mexico are threatening the ancestral biological home of maize. Fifty-nine distinct cultivars of maize have been developed by indigenous farmers over millennia to adapt to different climatic conditions and cultural practices. The genetic diversity of these maize cultivars offers a robust biological defense against climate change or other ecological shocks. By way of contrast, the US factory farming practice of monoculture reduces food stocks to the status of a biological machine to be manipulated by chemical fertilizers, pesticides, and even genetically

engineered traits, such as pest resistance, to enhance agricultural “productivity.” Advocates of a more holistic and organic alternative model of food production point to the externality costs of factory farming methods, such as massive nonpoint pollution of the air and water commons, and the fragility of a monoculture food production model that depends on massive infusions of petroleum-based energy and chemical boosters to survive. Quite apart from the long-term threat to biological diversity posed by factory farming methods, a sharp rise in petroleum costs could undermine its economic viability over the short to medium term (Bollier 2010, pp. 1–2).

The point here is that NAFTA trade rules that focus on removing tariff and nontariff barriers to trade have seriously missed the boat in Mexico. Not all boats are rising and the economic pie, to the extent that it is growing, is being divided in ever more unequal slices. The social and environmental costs of NAFTA free trade policies are being ignored by a policy regime that exhibits moral amnesia by simply assuming hypothetical welfare benefits of hyper-globalization. A related form of moral amnesia (the inability to recognize the moral implications of economic decisions or actions) may be seen in NAFTA protection of intellectual property rights, a dynamic factor of production.

Ethical Implications of NAFTA's Intellectual Property Rights Regime: The Mexican Yellow Bean Case

NAFTA was the first trade agreement to incorporate legal protection of intellectual property (IP) rights (see Smallson 1994). NAFTA's Chapter 17 establishes minimum standards of intellectual property protection among member states, requires effective enforcement of IP rights at the borders of NAFTA states, and establishes a dispute resolution procedure with trade-related sanctions and in some cases damages, payable to IP holders if their rights are infringed. The intended effect is to reward innovation and promote economic development by harmonizing IP protection mechanisms across Mexico, Canada,

and the United States. Such IP safeguards would seem to be consistent with free trade principles of market access and nondiscrimination (Terry et al. 2005). However, ethical concerns arise if patent claims are placed on life forms that previously existed as a customary public good in a biological commons. Hence the growing controversy over corporate efforts to privatize the biological commons by patenting life forms. Critics have characterized this practice as “biopiracy.” This practice is especially prevalent in developing countries where private property rights are not well defined and where rich biological diversity and a wide range of customary practices in agriculture and medicine create opportunities for privatization of corporate “inventions.” Many poor farmers in developing countries are finding that they are required to pay licensing fees to grow crops native to their regions because large biotechnology and seed companies have patented their seed stock.

A notorious instance of such alleged biopiracy via the patent process is the Mexican yellow bean case. In the early 1990s, an American citizen, Larry Proctor, bought some yellow beans in a Mexican market, brought them back to Colorado, and crossbred them for several years to develop a variety which he claimed was patentable because of its more pronounced yellow color. He filed a patent for this “Enola bean” in 1996. The US Patent Office granted him a patent in 1999. This patent granted Proctor's seed company, POD-NERS LLC, an exclusive monopoly on yellow bean production and sale in the United States and potentially in Mexico and Canada as well. Exports of yellow beans from Mexico into the United States were immediately banned unless Proctor's company was paid a licensing fee of six cents per pound.

The ethical (and legal) absurdity of this case is highlighted by the fact that the Enola bean was derived from Mexican seed stock and that yellow beans had been produced and sold for generations in Mexico. In 2001, the Spanish-based International Center for Tropical Agriculture (CIAT), whose mission is to catalog and preserve plant cultivars to maintain global and local biodiversity, legally challenged the Enola patent on the

grounds that it failed to meet the US Patent Office's requirement that an invention should be novel, have utility, and be nonobvious. In support, a charitable NGO, ActionAid, filed a patent on chips (as in "fish and chips") to highlight the absurdity of the Enola bean patent claim (Rattray, 2002). In December 2005, the US Patent Office rejected the Enola bean patent claim. However, Proctor appealed that decision and his appeal was rejected on April 30, 2008 (Wilson 2008).

While this common sense outcome suggests that misapplication of intellectual property laws can be remedied in the end, the lengthy process of review of the Enola patent claim seriously disrupted yellow bean exports from Mexico over a number of years. It also raised legitimate fears that rigorous enforcement of intellectual property rights could spur corporate profit making as much as real innovation. Privatization of the biological commons continues, typically without compensation to the traditional medicinal and agricultural practitioners who first developed or formulated the innovative use of life forms. Questionable and potentially unethical practices associated with privatization of life forms continue – such as the creation of "terminator seeds" that will not germinate after the first planting, so as to preserve sales of patented seeds. The use of "gene police" by seed companies such as Monsanto to prosecute or seek compensation from farmers whose crops have been pollinated by winds blowing over genetically modified food crops seems perverse as well. The grain growers of Alberta, as well as the maize growers of Mexico and organic farmers in the United States, feel justifiably threatened by this perverse form of enforcement of intellectual property claims.

NAFTA and Intellectual Property Controversies in the Pharmaceutical Industry

Efforts to control "gray market" imports to the United States of pharmaceutical products from Canada illustrate a curious interaction between Chapters 11 and 17 of the NAFTA treaty. Chapter 11 empowers foreign investors to claim

damages from sovereign states that impose regulations that indirectly limit profits in a manner deemed "tantamount to expropriation." Canadian medical care is provided, at least in part, as a public good available to all Canadian citizens. Hence, the Canadian government has taken steps to control the price of patented drugs that are formulated, often by US-owned subsidiaries in Canada, and sometimes made in the United States and exported to Canada. Whereas prescription drugs are sold at "market prices" in the United States, the Canadian government imposes price controls, administered by the Patented Medicine Prices Review Board. Prices for the same drug may be 50 % lower in Canada than in the United States. As a result, a robust trade in prescription drugs has sprung up as Canadian internet pharmacies have responded to burgeoning US demand. In 2003, the value of this trade was estimated to be as high as \$1 billion. An unresolved intellectual property issue is whether patented drugs either made in the United States and exported to Canada or manufactured under license in Canada can be reexported to the United States without violating the US patent. Canadian federal and provincial governments do not legally sanction these internet pharmacy exports, but they have taken no steps to curb them. Thus, the Canadian governments appear vulnerable to a potential Chapter 11 lawsuit seeking damages for loss of profits due to their failure to enforce patent protections guaranteed under Chapter 17 of the NAFTA treaty. Canada is also vulnerable to an unfair trade practices claim because it does not force Canadian generic drug manufacturers to independently verify the safety and efficacy of their formulation, relying instead on the certification of the original patented drug. A Chapter 11 claim by US pharmaceutical companies against Canadian price controls of patented drugs is even conceivable. If internet sales of prescription drugs from Canada to the United States were legalized, as has been proposed occasionally as a cost-saving measure, both the US and Canadian governments would be vulnerable to a challenge of "unequal treatment" of Mexican pharmaceutical firms (Terry et al. 2005). Harmonization of intellectual property standards to eliminate

alleged nontariff barriers to trade can become a double-edged sword that cuts in strange ways.

Conclusion

The above discussion has demonstrated that NAFTA efforts to harmonize regulatory standards to minimize alleged “nontariff barriers to trade” can have perverse and possibly unanticipated effects. In particular, the hyper-globalization narrative that underpins NAFTA policy initiatives is unsympathetic to the claims of public health and environmental damage inflicted by the public policy constraints imposed by the golden straightjacket. Ironically, the golden straightjacket is not so much antiregulatory as it is regulatory in favor public policies that reinforce the rights of global capital (the electronic herd) and the single-bottom-line thrust of global corporations. The unequal, and certainly unfair, distribution of the costs and benefits of globalization lies at the heart of the controversy over the NAFTA and the ethics of food policy. When the stakeholders of global capitalism try to mobilize and exercise their democratic rights to call upon the power of the state to temper the social or environmental costs of a narrowly defined economic agenda, they are scolded by the apologists of hyper-globalization on the grounds that their democratic impulse is irrational, counterproductive, and likely futile as well. The result is a kind of “moral amnesia” (Werhane 1999) that seeks to marginalize calls for more fairness and balance in addressing social or environmental costs imposed by economic development.

Hyper-globalization is a unitary meta-narrative that seeks to drown out a cognitive scripts that would redefine “development” as a pluralist convergence of competing narratives to achieve improved and complementary economic, social, and environmental outcomes (the triple bottom line). Dani Rodrik (2011) has called attention to the “political trilemma” that confronts globalization. As currently framed, globalization may be compatible with either national sovereignty, via the golden straightjacket, or democracy via creation of new forms of global

democratic governance. Pragmatic reconciliation of these three constructs will require more openness and transparency in exploring and resolving policy differences, new democratic institutions that include and empower stakeholder dialog and engagement, and greater flexibility and balance in easing paradoxical tensions in addressing complex, “messy” problems (Calton and Payne 2003). Public policy controversies surrounding NAFTA and the ethics of food would be a good place to start in reimagining a more ethical global policy regime.

Cross-References

- [Food and Agricultural Trade and National Sovereignty](#)
- [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- [Trade and Development in the Food and Agricultural Sectors](#)
- [WTO Dispute Settlement and Food and Agricultural Trade](#)

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Nanotechnology in Agriculture

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Synonyms

Agriculture; Ethics; Food science; Nanotechnology; Risk; Socio-economics

Introduction

Climate change and increased global population give rise to a special emphasis on how agriculture can expand production under changing conditions. Agriculture has also seen radical changes the last century with a turn towards research-based, industrialized agriculture with large-scale monocultures, mechanization, increased irrigation, use of

artificial fertilizers, and pest control systems, combined with a change from local towards export-oriented making of products to be used for food, feed, fuel, and fiber. Biotechnology-based interventions such as systematic breeding, as witnessed in the Green Revolution, and genetic modification have led to commercially successful but politically controversial herbicide-tolerant and pest-resilient varieties of major crops, with promises of a wide range of new varieties in the years to come. In recent years nanotechnology methods and products have been added to the techno-scientific possibilities of improvements to agricultural production.

As yet, there are few if any commercially available products, but nanotechnology holds promises for increasing efficiency within animal and plant breeding; for increased nutritional value, and production inputs as feed additives, chemicals, and pesticides; for new efficient means for diagnosis and surveillance of diseases; as well as possibilities for precision farming techniques. Moreover, also with importance for agriculture is the possibility for using nanosensors for detecting and removing salt and pollutants from water and soil. Here some of these new developments will be briefly presented, with focus mainly on the agriculture production system and not on food products as such (packaging, detection of contaminants and pathogens, nano barcodes, etc.). New emerging technologies as nanotechnology can be used for solving problems as well as enhancing production and efficiency but do also raise questions with regard to food and environmental safety and socio-economic, ethical, and regulatory issues that will be highlighted.

Nanotechnology: Definitions and Uniqueness

Nanotechnology has some sociopolitical features distinguishing it from other emergent technologies. Some claim that it represents nothing new, being just a more attractive way to fund research and sell products derived from established practices in chemistry, whereas other novel

technologies have had clearly defined characteristics. Therefore, there have been several claims of the field being built on hype more than realistic hope – with similar hyperbole regarding potential hazards (see, e.g., Nordmann 2007 and Wullweber 2008). In addition, the introduction of nanotechnology to the general public was accompanied with a call for ethical assessment, implying that the potential of the technologies is directly connected to the risks (The Royal Society and the Royal Academy of Engineering 2004). Consequently, it can be argued could even claim that this focus on potential hazards give support to the claims regarding potential benefits. These special characteristics of this technology can also be found in the literature on agricultural nanotechnology.

There are different definitions of nanotechnology. The interest in nanotechnologies is linked with the possibility for manipulation of material, devices, and other structure on an atomic and molecular scale. The National Nanotechnology Initiative in the USA defines the scale range for nanotechnology where at least one dimension has the approximate measure of 1–100 nm. Nanotechnology describes the creation and utilization of functional materials, devices, and systems with novel functions and properties that are based either on geometrical size or on material-specific peculiarities of nanostructures. The nanoscale has become accessible both by application of new physical instruments and procedures and by further diminution of present microsystems. Also structures of animated and non-animated nature were used as models for self-organizing matter (<http://www.nanoforum.org> “What is nano?”).

There are numerous patents and several nanomaterials and nanoparticles have reached the market (<http://www.nanotechproject.org>); however there is little as yet directly applicable to agriculture. The field is largely unregulated and some products are advertised as nano without falling within the defined scale, whereas others that could be thus classified carry no indication that the product contains nanomaterials. Hence, the definition of nanotechnology is arguably also of legal significance because of the connected

consequences for future regulatory regimes. It is reasonable to believe that regulatory mechanisms as well as labeling will be important issues when products derived from agricultural nanotechnology reach the market. The public conception and acceptance of nanotechnology will be decisive for the labeling strategies chosen by the industry.

Animal and Plant Breeding: New Possibilities with Nanotechnology

Breeding to achieve more productive animals and plants is of crucial importance in order to solve the future food challenges. At the same time, climate change has caused an increased focus on stress-tolerant plants, new modes of agriculture, as well as conservation agriculture. Traditional ways of breeding is time consuming and has caused a special interest in possibilities with biotechnological methods, and this has recently been expanded to include nanotechnology.

Convergence of Nano- and Biotechnology Techniques

Special focus has been on the possibility to enhance present genetic engineering techniques by using nanotechnology for improving precision. Nanotechnology may reduce time and cost of gene sequencing, improving the basis for genetic modification or directed breeding (Chen and Yada 2011). Nanotechnologies can also be used in the genetic modification process and even be involved in synthetic biology efforts to create novel plant varieties (Scrinis and Lyons 2007). Examples of such combinatory methods include crystal DNA and magic bullets (silica particles) that deliver genes to specific parts of plant or plant tissue, already used in plants (tobacco and maize). Through these combinations of technologies, new properties such as tolerance to drought, saline earth, low or high temperatures and other extreme conditions, altered growing seasons, better pest resistance, altered colors, and so forth be introduced faster and with more precision using options with nanotechnologies than by present-day techniques.

Functional Food and Feed

Different strategies can be used to enhance and alter nutritional components of food and feed. The first includes using nano-encapsulation techniques either for controlled delivery of micronutrients and bioactive compounds already found in food and feed (Sozer and Kokini 2012) or to alter the composition of nutrients and flavor to meet special preferences or physiological requirements (Chen and Yada 2011). Improvement of nutrients as, for example, omega 3 and omega 6 fatty acids, probiotics, and vitamins is also possible in relation to change in delivering properties and solubility. By provision of specific bindings with mycotoxin, aflatoxin, and pathogens, nano-sized additives can be used to reduce toxic impacts and disease in consumers (FAO and WHO 2010).

Examples of food products that are already on the market include a new variety of rapeseed containing tiny materials that can block cholesterol from fat entering the bloodstream (Farhang 2007), nano-iron in nutritional drinks, and nano-minerals in breakfast cereals (Sozer and Kokini 2009). Whether all these should be called nanotechnology applications probably depends on the definition. There exists as yet no consistent regulation of these nanotechnology food additives (ibid.) although there is considerable ongoing work to develop the basis for regulation (Duvall et al. 2011).

Plant Production

Nanotechnology holds potential for increased plant production and for controlled agriculture practices.

Field Sensing Systems

Nanosensors can be used to facilitate real-time monitoring of the crop growth, field conditions, environmental stressors, and crop conditions (Chen and Yada 2011). Such field sensing systems, also called precision farming, can be used for identification of the right time to plant and to harvest and for detection of pests, viruses, weeds,

or temperature and humidity changes as well as monitoring of soil nutrients. This can be facilitated by connecting nanomaterials working as sensors with global positioning systems or through network of wireless nanosensors in a field (Chen and Yada 2011; Nanoforum 2006). Once changes are identified, targeted measures can be initiated as application of pesticides, fertilizers, and irrigation.

One of the benefits by introducing field sensing systems in present agriculture practices is the potential for increased precision with the potential result of less use of chemicals. This will cause lower production costs and less adverse effects on the environment. Another benefit is that such monitoring systems can also be used to achieve increased understanding of the physical, chemical, and biological interactions between plants and pathogens that subsequently may lead to better treatment strategies.

Nanoscale Delivery Systems and Formulations

Within medicine the use of nanoscale delivery system has shown great promises. This has led to questions whether the same approach can be used for controlled delivery within agriculture of products as fertilizers, pesticides, herbicides, plant growth regulators, etc. The mechanism behind such nanoscale delivery systems is within the use of encapsulation, polymers and dendrimers, and surface ionic and weak bond attachments. By these mechanisms improved stability can be achieved and hence lesser amount of the products needs to be distributed and thereby results in reduced chemical runoff and environmental degradation. Formulations that contain nanoparticles within 100–250 nm size range are already in use in agriculture. These formulations have gained increased ability to dissolve in water with the impact that their activity is increased (Nanoforum 2006). Other applications are nano-emulsions with herbicides or pesticide particles in the range of 200–400 nm that have gained increased integration properties in gels, liquids, and creams that ease distribution. One example of a such nano-emulsion is a product marketed by Syngenta that releases

its insecticide when it comes in contact with the alkaline environments that are in the stomach of certain insects.

EHS for Farmers

The different formulations containing nanoparticles that are already on the market are not labeled (Scrinis and Lyons 2007). They have been developed with the intention to increase capacity for absorption into plants compared to larger particles. These altered properties imply novel health risks to farmers as well as animals that need to be investigated. The current state of scientific uncertainty regarding these potential hazards implies that a precautionary approach is warranted.

Diagnostics and Vaccines

Diseases within agriculture are causing economic problems for farmers and are affecting animal welfare. Nanotechnology holds promises for developments within vaccines and with regard to detection and diagnostics of diseases. There has been a shift in focus within vaccine research to the design of delivery systems that are able to mimic pathogens in size and composition. Examples include virosomes, liposomes, and polymeric nanoparticles (Panda 2012). Such structures can contain specific drugs that are delivered at the intracellular level to obtain desired and optimal immune responses against a given pathogen. The use of polymeric micro- and nanoparticles in vaccine delivery systems represents at present a highly studied approach (Lü et al. 2009). Drug nanocarriers may also be developed by using polymers, albumin, gelatin, alginate, collagen, and chitosan that also are biocompatible and are biodegraded at different rates after vaccination.

The use of a biosensor composed of a biological component as a cell, enzyme, or antibody linked to a wireless device can be used to detect changes within cells and molecules and produces when activated by binding a signal that is proportional to the quantity of the substance that is recognized. The use of such nanosensors

also opens up for real-time information about animal health status as well as early detection of animals with diseases. These animals can be isolated before the disease becomes a serious problem within the holding (Evers et al. 2008).

Environmental Remediation and Detection

Modern agriculture methods including industrialized agriculture have seriously affected surrounding environments. Nanoparticles can be used as means for degradation of pollutants (Baruah and Dutta 2009), for example, by photocatalysis, using metal oxide semiconductor nanostructures, organic pesticides and industrial pollutants can be degraded into benign environmental components. The same approach can be used for desalination and purification of soil and water. The detection of the abovementioned contaminants can also be facilitated by nanotechnology, using electromechanical and optical sensors. However, there are toxicity and stability issues, making the range of possible applications uncertain at the current stage of technology development.

Food, Animal, and Environmental Safety

Concerns about the adverse effects of nanoparticles and nanomaterials on the environment and human health are primarily related to the following characteristics (The Royal Society and the Royal Academy of Engineering 2004):

- Their large surface area, crystalline structure, and reactivity, which can facilitate transport in the environment or the body.
- Ultrafine particles may have a different biological behavior and mobility than the larger particles.

Within the past years, an increasing number of requests for toxicity studies have been raised; however, there are still only a few ecotoxicity studies that have been published. Although some of them have provided empirical evidence

that occupational and environmental exposure to nanoparticles can lead to adverse health effects on living organisms, there is still need for the establishment of methods and approaches for identification and for evaluating the risks of harm to environment and human health. The size of the particles in itself is also of importance, especially when considering that such particles could accidentally and without notice be distributed to living systems through air, soil, and water.

Distribution and Persistence of Nanoparticles

Nanoparticles can enter the body via the digestive tract by ingestion and drinking, the lungs via the respiratory tract, and possibly the skin through dermal exposure. Once in the body, nanoparticles can be redistributed to organs or tissues through the blood circulation or by cell migration. For some of the new approaches as the use of nanocarriers in vaccine delivery, there are unresolved issues related to unintended effects as, for example, effects by distribution to nontarget organs and cells. There is a great need of information about likely exposure levels, dose–response relationships, modes of action, and fate in the environment, the mechanisms of toxicity, and processes of elimination and accumulation of nanoparticles (Grieger et al. 2009).

Animal Welfare Issues

With the introduction of new technologies, there can be conflicts and trade-offs between short-term profit of the industry and demand for cheap animal products on one hand and animal welfare on the other hand (Olesen et al. 2010). The possibilities within breeding of animals with nanotechnology will as with other breeding strategies focus on the goal to enhance characteristics and traits such as productivity and growth. However, it is also important to be aware that the pursuit of such goals may deteriorate awareness for low heritable traits such as health, welfare, and fertility. Due to the significant lack of knowledge concerning potential threats to health and environment, it is possible that the use of nano-based

feed and drug delivery technologies may result in serious animal welfare problems. There are insufficient grounds for saying that it is scientifically plausible that such products will cause harm, but the lack of knowledge implies that it is reasonable to argue for a precautionary approach to the use of nanotechnologies in animal feed and medication, although that is disputed (Lin 2008; Evers et al. 2007).

Environmental Issues

Nanotechnological products intended for use in agriculture can spread, persist, and end up as environmental problems. For example, the size and dissolvability of nanoparticle pesticides imply that they can contaminate surrounding soils, waterways, and food chains and be ingested or taken up by living organisms (Scrinis and Lyons 2007). Nanoparticles are already part of the natural environment, but there is insufficient knowledge of how novel laboratory-produced nanoparticles will behave when released *in vivo*. Both the time they remain in air and the time they use to dissolve or break down can be significantly different from that of larger particles. Several authors have pointed out that although the knowledge of environmental effects is largely unknown, the research funding for research in environmental impact is low.

Ethical Issues

Agricultural nanotechnology is aiming at contributing to solving pressing problems of the future of humanity. As such it is ethically good pursuing this research and development. However, it is known from history that good intention is not sufficient; it is still necessary to ask what kind of technology and type of applications will contribute to a good future. Thus, this is an ethical matter. Ethical issues can be classified as intrinsic and extrinsic, the first being those that concerns the moral value of the activity in itself and the second those that relate to the moral value of the

context and the effects of the activity. Food production plays a crucial role in human life and is a central part of culture. This is evident in the controversy connected to biotechnology in agriculture, where a series of surveys show that the general public and farmers find this kind of technological intervention to be morally unacceptable for intrinsic reasons. The objections are typically expressed as in terms of the technology being unnatural or represents playing God. Both convergence of nanotechnology with gene technology and other nanotechnology interventions share the characteristics making gene technology considered unnatural. Despite general scientific and philosophical objections concerning the factual and conceptual problems with the naturalness argument, it remains a challenge for bio- and nanotechnology in agriculture.

The main extrinsic concerns are connected to issues of risk and scientific uncertainty concerning possible harm to human health and to the environment on the one hand, as discussed above, and socioeconomic and political aspects of the technology on the other hand. Unresolved risks as well as awareness of scientific uncertainty with nanotechnological applications call for implementation of the precautionary principle in decision-making processes. To improve the basis for decision making, risk-associated research needs to be carried out. In practice such research implies a combined scientific and ethical analysis, where scientific research integrates social science as well as ethics perspectives on the relevant science and technology (Myhr and Myskja 2011). The goal must be to ensure a responsible development and introduction of nanotechnology in agriculture.

Socioeconomic Issues

The intention by introducing new technologies in agriculture is to increase food production and enhance production security. However, new technologies may also increase corporate ownership and alters the economic control between different actors within the agriculture system (Scrinis and

Lyons 2007). This has been pointed out in numerous articles on industrialized agriculture, and is one of the key issues presently discussed in relation to the introduction of modern biotechnology on farming practices. These tendencies towards a “bioindustrial paradigm” can be further strengthened by agricultural nanotechnology, since some of the new developments as convergence of nano- and biotechnology within breeding and field sensing system can be best suited for large-scale farmers in the developed world. Moreover the benefits from, for example, precision farming systems can only be achieved in advanced and intensive agriculture systems.

It follows that the turn towards nanotechnology primarily benefits the large-scale farmers in the rich parts of the world. If this is correct, nanotechnology in agriculture is yet another element in present allegedly negative tendencies. In the rich world, the corporate farm is replacing the small family farms. On a global scale, it contributes to the technology divide, widening the gap between rich and poor. Therefore it is crucial that institutions that are involved in developments of nanotechnological applications for agriculture also emphasize how the new possibilities can be used to enhance food security for small-scale farmers and how to meet challenges in agriculture in the developing world. Capacity building is necessary both with regard to the technology in itself and also with regard to assessment and management of risks for health and environment.

Summary

Nanotechnology has a great potential for increasing efficiency within agriculture and for solving problems related to climate change, diseases, and pollution. At the same time, it is important that, potential risk and concerns about unforeseen adverse effects need to be taken seriously and should be reflected in regulatory frameworks. Regulators needs to be aware that the unique properties of nanotechnological products may also represent new risk and thereby raise the following important questions: Are the present

test procedures good enough? Are the laws good enough? Should a precautionary approach be employed? To cope with potential uncertainties and risks, innovation processes need to be combined with approaches that have inbuilt awareness for risk to environment and health of both farmers and consumers. The success or failure of nanotechnological applications will depend on market and consumer acceptance. As with GMOs it can be expected that nanotechnology in agriculture and food products will be received differently because of national and local sensitivities, traditions, and social and political cultures. To build farmer and consumer trust, it will be necessary to label both the inputs into agriculture, as new types of pesticides, as well as the food product before it is available in the local grocery.

Cross-References

- [Agricultural Ethics](#)
- [Biotechnology and Food Policy, Governance](#)
- [Climate Change, Ethics, and Food Production](#)
- [Environmental Ethics](#)
- [Functional Foods](#)
- [Transgenic Crops](#)

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National Courts and the Right to Food

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Synonyms

Domestic courts; Domestic litigation; Economic and social rights; Enforcing human rights; Justifiability; National courts; National litigation

Introduction

National courts can play a key role in the advancement of the right to food by ensuring that the right is upheld and through providing redress to individuals whose rights have been violated. However, while the right to food has been enshrined in international law since 1948, it is only over the past twenty years that the international community has sought to clarify the content and scope of the right and that states have begun to adopt the right into domestic legal systems. Right to food litigation is still in a nascent stage of development, with a growing but still limited number of domestic courts around the globe having expounded upon its tenets or made findings of violations. Nevertheless, there have been cases where litigants have claimed violations of the right to food and where courts have made significant rulings. This entry outlines the content of the right to food, the role national courts can play in implementing and enforcing the right to food, and what courts have done to date. It also offers some brief comments on the controversies of using national courts in the promotion of the right to food and highlights possible developments that may be seen in the future.

Background on the Right to Food

The right to adequate food is a human right enshrined in the Universal Declaration of Human Rights (UDHR) (Article 25), the International Covenant on Economic, Social and Cultural Rights (Article 11) (ICESCR 1966), and a host of other international instruments including the Convention on the Rights of the Child (Articles 24(2)(c) and 27(3)) and the Convention on the Elimination of All Forms of Discrimination against Women (Article 12(2)). The right to adequate food, as part of the right to an adequate standard of living, “is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement” (UNCESCR 1999). The right to food protects the right of all human beings to feed themselves in dignity, either by producing or by purchasing food.

States are the primary duty bearers with respect to the right to food. Specifically, states have three substantive obligations flowing from the right to food – the obligations to respect, protect, and fulfill the right to food. The obligation to *respect* requires the state to not engage in activities that hinder access to food. The obligation to *protect* requires the state to ensure that third parties do not hinder the ability of people to grow or purchase food. The obligation to *fulfill* requires the state to ensure that no one goes hungry, even during times of emergency, and to engage in remedying systemic structural causes of food insecurity. States are also required to follow a number of procedural requirements and must ensure participation of the population in the development of policies, programs, and laws and nondiscrimination throughout the implementation process.

While the right to food was first articulated in 1948 in the UDHR, it was not until the mid-1990s that states began to adopt and implement the right to food in the national context. The adoption of the right to food corresponded largely with efforts by the international community to clarify the content of the right to food and the means for its implementation through General Comment

No. 12: The Right to Adequate Food and the *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security*. These documents stress adopting domestic framework laws, monitoring mechanisms, and remedy procedures and outline unique roles in the protection and promotion of the right to food for the legislature, executive, and courts (UNCESCR 1999; FAO 2004).

With respect to national courts and the role of national courts in the implementation of the right to food, General Comment No. 12 provides that “[a]ny person or group who is a victim of a violation of the right to adequate food should have access to effective judicial or other appropriate remedies,” specifically restitution, compensation, satisfaction, and guarantees of non-repetition (UNCESCR 1999). It urges the incorporation of the right to food into domestic instruments, in part because incorporation “can significantly enhance the scope and effectiveness of remedial measures” (UNCESCR 1999). Through incorporation, courts are “empowered to adjudicate violations of the core content of the right to food by direct reference to obligations under the Covenant” (UNCESCR 1999).

States can afford legal protection of the right to food in a number of ways. Some states, such as Argentina and Norway, grant international law and treaties such as the ICESCR constitutional rank and as a result implicitly guarantee the right to food (De Schutter 2013). However, the most common way that states have adopted the right to food is through constitutional protection and the adoption of right to food framework laws. Constitutional rights serve as governing principles for states and, depending on the domestic legal system, cannot be derogated from. To date, over twenty countries, including South Africa, Brazil, and Kenya, have amended or adopted constitutions to include the right to food. Right to food framework laws, such as those in Guatemala, Ecuador, Venezuela, Nicaragua, and Honduras, can also provide legal protection of the right to food – often in a more coordinated and detailed fashion than through constitutional protection.

The Role of National Courts in the Adoption of the Right to Food

Where the right to food has been adopted into the domestic legal system, courts can serve as key monitoring agents of the domestic laws and constitutional provisions, providing a venue for the review of government action (or inaction) by individuals or groups within the state. In this way, domestic courts provide an accountability mechanism, holding the government accountable for human rights violations and protecting the social contract between individuals and the state. While every jurisdiction may provide courts with different powers, the following list speaks in a broad fashion to how a national court may engage in the promotion and protection of the right to food:

First, as independent interpreting agents, courts define the scope and content of domestic obligations whether constitutional, legislative, or drawn from international law. Courts, particularly in common-law jurisdictions, may define what constitutes the right to food in their jurisdiction, or provide a test for what would constitute a violation of the right to food. Through the interpretation process, courts can significantly advance the right to food.

Second, courts can ensure that domestic laws and regulations do not conflict with the requirements of the right to food. Where conflicts do exist, courts may have the competence to direct how laws and regulations are implemented or interpreted and may even have the ability to strike particular sections or the entire legislation or regulation, where the sections or entire law violate human rights. This is particularly the case in states where there is constitutional protection of the right to food.

Third, courts can address specific violations of the right to food, be they violations of the obligation to respect, protect, or fulfill the right to food. Courts can require the government to refrain from acting in certain ways, to act proactive in others (e.g., provide food, draft laws or regulations, develop programs

or policies), or to restrict third parties. Courts can also order remedies for victims of right to food violations and review the implementation of social protection schemes or other programs (such as school feeding programs or rural extension services) to ensure, for example, nondiscrimination in the provision of services or the participation of affected communities in policy-making.

Litigating the right to food through national courts, regardless of the outcome, can also help to promote the right to food by raising public awareness. Litigation through national courts can be a tool for advancing the right more broadly by educating the public, bringing attention to particular issues, providing information about rights to a wider audience of right holders, and creating alliances or solidarity among the public. Using national courts can also form part of a greater strategy for advancing the right to food – one that combines public campaigns for legislation and national policies, political and legislative lobbying, or demonstrations and public awareness activities (Cohen and Brown 2005; Courtis 2007). For example, the Right to Food Campaign in India, an informal network of individuals and organizations “committed to the realisation of the right to food in India,” has worked alongside a piece of litigation to raise awareness and push for legislation on the right to food (Cohen and Brown 2005).

National Courts and the Right to Food: Examples

A growing number of states have granted legal protection for the right to food, many of which are highlighted above, but courts, as of yet, have only heard a limited number of cases concerning the right to food directly (Knuth and Vidar 2011; De Schutter 2012a, b; Golay 2009). These cases, however, provide clear insight into how national courts promote and address violations of the right to food and how they could continue to do so in the future.

The most notable right to food case in a national court comes from India. The case

People’s Union for Civil Liberties v. Union of India and Others was initiated in 2001 in response to the government’s failure to distribute employment and food relief mandated by the Rajasthan Famine Code of 1962 (Writ Petition 2001). Specifically, the case was brought against the Government of India, the Food Corporation of India, and six state governments on the basis that these government entities failed to address hunger and starvation-related deaths in a time of surplus and in violation of existing laws, programs, and the Constitution (Birchfield and Corsi 2010b). While there is no express provision in the Indian Constitution guaranteeing the right to food, the litigants relied on a constitutional precedent, which defined the right to life, under Article 21, as including the right to adequate nutrition (Birchfield and Corsi 2010a).

In the last decade, the case, which is still ongoing, has expanded in reach, encompassing all state governments, and scope, focusing on larger systemic issues of food insecurity, poverty, and unemployment (Birchfield and Corsi 2010a). The Supreme Court has issued a series of significant interim orders that have recognized a constitutional right to food, identified a number of food schemes as legal entitlements, determined a basic nutritional floor, and provided directives in the creation, preservation, and proper implementation of various programs, such as the national Mid-Day Meal Scheme (providing food in school) and the Public Distribution System (delivering grains to people in extreme poverty) (Birchfield and Corsi 2010b). The Supreme Court also established new accountability mechanisms, in particular, a new commission to monitor and report on noncompliance with court orders related to the right to food. Following the efforts of the commission, the Court, and a civil society campaign (entitled the Right to Food Campaign), a participatory process to draft national legislation to codify the various entitlements achieved through the interim orders was initiated by the government. On July 5, 2013, the government adopted the National Food Security Ordinance (Birchfield and Corsi 2010b; De Schutter 2013). The case is an example of how courts can address

the obligation of states to *protect* and *fulfill* the right to food, as well as ensure nondiscrimination and the effective provision of laws, policies, and programs. It is also a prime example of how national courts, litigation strategies, and effective public advocacy, when combined, can be most effective in promoting the right to food.

While other cases have been less spectacular in their reach, length, and scope than the *People's Union for Civil Liberties* in India, there are numerous other examples where courts have actively engaged with the right to food. First, a number of courts have provided a venue for the review of government action (or inaction). In one example, the Sectional Court of Appeal in San Pedro Sula, Honduras, enforced the state obligation to *protect* the right to food by granting a constitutional remedy to prevent the eviction of a peasant group, Brisas del Bejuco, from the land they relied on for subsistence agriculture (De Schutter 2013; Cruz 2010). The Court, referring to the obligation of the state to protect the right to food, as outlined in the ICESCR, affirmed that evictions would lead to human rights violations and voided the eviction order (Cruz 2010).

In another example, the High Court in Uganda at Kampala enforced both the obligations to *respect* and *protect* the right to food to address not only state action but also the failure of the state to prevent the actions of a private enterprise (De Schutter 2013). The Court ruled in March 2013 on behalf of 2,041 peasants primarily engaged in subsistence farming in Mubende, Uganda, who were brutally expelled from their homes and farms in the summer of 2001, so that their land – land they depended on to meet their food needs – could be leased to Kaweri Coffee Plantation Ltd., a solely owned subsidiary of the Neumann Kaffee Gruppe, headquartered in Germany (Baleke and Others 2002; De Schutter 2013). The Court held that the state agents were liable for violations and ordered that compensation be paid to the peasants. In addition, the Court held that investors “had a duty to ensure that . . . indigenous people were not exploited. . . . They should have respected for the human rights and values of people and as honourable businessmen and investors they should have not moved into the

lands unless they had satisfied themselves that the tenants were properly compensated, relocated, and adequate notice was given to them” (Baleke and Others 2013).

Courts are also able to review government legislation or programs, particularly in countries with constitutional protection of the right to food, for compliance with right to food principles. While not directly a right to food case, an example from South Africa illustrates how courts can examine legislation for its impact on the ability of people to meet their food needs. In *Kenneth George and others v. Minister of Environmental Affairs and Tourism*, a number of fisherfolk challenged the Marine Living Resources Act, which favored commercial fishing over small-scale traditional fisheries resulting in many communities of small-scale fisherfolk losing access to the ocean and, therefore, their primary source of food and income. They alleged the government had failed to *respect*, *protect*, and *promote* their right to food by not only failing to improve but also reducing their access to food (Jaffer 2007). In 2007, the High Court, ruling on equality grounds, and not the right to food, provided remedies to the fishing communities and mandated the government to create a participatory and inclusive task force to prepare a new legislative and policy framework that would “take into account international and national legal obligation and policy directives to accommodate the socio-economic rights of these fishers and to ensure equitable access to marine resources for those fishers” (Kenneth George and Others 2007). Following the court order, a committee was formed, and on May 4, 2012 after a public consultation process the Small Scale Fisheries Policy entered into force (De Schutter 2012a).

Many of these examples also illustrate how courts have addressed individual violations of the right to food, as well as failures of states to meet their obligations to *fulfill* the right to food. Other examples include a recent case from a juvenile court in Guatemala concerning five children in two villages who were left malnourished as the result of the state’s failure to *fulfill* the right to food and provide needed support. In the decision, grounded in Guatemala’s Food and

Nutrition Security Law, adopted in 2005, as well as Guatemala's obligations under the ICESCR, the court ordered 10 government institutions to adopt 26 specific measures including restitution and compensation measures such as a food assistance, land distribution, water access, and agricultural training (FIAN 2013; De Schutter 2013). Another example comes from Nepal, where the Supreme Court in *Pro Public v. Government of Nepal* issued an interim order in 2008 to address the immediate need of several communities that were not being reached by food distribution programs already in place. The basis of the claim was a provision of the 2007 Interim Constitution of Nepal, which guaranteed a right to food sovereignty, as well as Nepal's obligations under international law to fulfill the right to food (Pro Public 2010).

Beyond the national court context, the right to food has also been upheld in regional human rights courts. In 2011, the African Commission on Human and Peoples' Rights (ACHPR) found *inter alia* that the Nigerian government had violated their obligation to *respect* and *protect* the right to food of Ogoni communities by both destroying and allowing third parties to destroy their food sources and causing environmental contamination and degradation (SERAC et al. v. Nigeria 2002). Further, the Inter-American Court of Human Rights in the 2006 decision in *Comunidad Indígena Sawhoyamaya v. Paraguay* considered whether the right to food constituted an integral component of the right to life (Cruz 2010). Finally, the Court of Justice of the Economic Community of West African States in 2012 found that groups have protected rights to the resources they depend on for an adequate standard of living, including the right to food (SERAP v. Nigeria 2012).

Challenges and Controversies to Utilizing National Courts to Enforce the Right to Food

Using courts to advance the right to food poses particular challenges. The first set of challenges relates to the practical realities of using national

courts as a means for advancing and protecting the right to food. These challenges include:

- *Access to justice*: The cost of bringing a legal action in a national court can be exceedingly high. Litigants must pay court fees, disbursements, and lawyers. However, right to food violations are often experienced by the most marginalized and poorest members of society, for whom the ability to bring an action in a national court or to even access a lawyer may be highly limited. Similarly, the majority of the world's hungry are rural smallholder farmers and peasants in the Global South (IFAD 2011; Hirsch 2009). Ensuring access to justice in rural communities may pose even greater challenges than in cities for the purely logistical reason of availability of lawyers and ability of lawyers to reach communities.
- *Access to knowledge*: Access to knowledge about what constitutes a violation of the right to food can be key in a community or an individual's ability to mobilize. In the *Brisas del Bejuco* case in Honduras, for example, arguments made on behalf of the community were based on knowledge learned by a community member at a right to food training course (Cruz 2010). Without this knowledge, the community may not have known there was even a cause of action to advance and may not have sought legal assistance.
- *Speed of litigation*: Litigation and the enforcement of rights through national courts may be effective, but it will likely not be speedy. For example, in the *Mubende*, Uganda case, the peasants concerned were evicted in 2001, filed a court action in 2002, and finally received a verdict in their favor on March 28, 2013 (H.C.C.S. No. 179/2002; De Schutter 2013). While courts can order interim injunctions or interim remedies, as was done in the *People's Union for Civil Liberties* in India and *Pro Public* in Nepal, a decision on the merits may be a distant prospect.

A further set of challenges draws from the procedural and jurisdictional requirements of many judicial systems and the characteristics often associated with victims of right to food violations. Many judicial systems contain

complex procedural and jurisdictional requirements for bringing litigations such as requirements for standing (finding individuals or groups who may legally bring an action) or timing (bringing an action that is neither moot nor ripe). Some countries have addressed standing challenges by allowing public interest standing, whereby an entity can represent a population who may be unable to bring a case on their own. For example, the People's Union for Civil Liberties in India relied on a public interest standing provision in order to represent communities in Rajasthan and later food-insecure populations across the country. With respect to timing, different countries allow actions to be brought preemptively before a violation has occurred, during a violation, and after a violation.

A third set of challenges relates to the commonly held view that economic and social rights, including the right to food, are not justiciable and not enforceable by courts. The basis of this belief is multifaceted stemming from both a concern towards the cost and complexity of enforcing economic and social rights and a respect of the separation of powers. Implementing economic and social rights, as opposed to civil and political rights (the right to vote, the right to a fair trial, etc.), is seen as complex and costly because the rights require a redistribution of resources as well as the establishment of infrastructure or social programming to deliver the resources. This leads to more complex laws and a more expansive state (Kelley 1998; Neier 2006). Drawing from this, economic and social rights are viewed as nonjusticiable, with courts being the improper venue to adjudicate violations because of the traditional separation of powers. Courts do not have the power of the purse and are not afforded law-making abilities. Allowing courts to adjudicate and make decisions with major financial and infrastructural consequences is viewed as an encroachment on the other branches of government, in particular the legislature. A recent court in Canada expressed such concerns when it found that economic rights, and in particular the right to housing, were not justiciable and that no protection for economic rights could be read into the Canadian *Charter of Rights and Freedoms* (Tanudjaja v. Attorney General (Canada) 2013).

National Courts in the Future

Despite the critiques and challenges to bringing right to food cases, national courts around the world are increasingly hearing and deciding cases on the right to food. As more countries adopt framework laws and constitutional protection of the right to food, or interpret the right to life as including a right to adequate food, more litigants may be able to bring right to food cases to court.

Changing understandings of the scope and reach of human rights law may also expand the role of national courts in the protection and promotion of the right to food in the future. For example, increased attention on the human rights obligations of businesses may lead litigants to challenge the actions of business enterprises on human rights grounds (Ruggie 2011). Similarly, a growing concern over violations of extraterritorial human rights obligations may lead to foreign litigants challenging government action in national courts as a result of violations committed abroad (Maastricht Principles 2012).

What role courts will play in the protection of the right to food in the future will depend on the ability of litigants to access courts, the availability of enforceable law for the judiciary to rely on, and the openness of the judiciary to engage in economic and social rights. The experiences of domestic courts to date illustrate that courts can be powerful actors in the fight against hunger, but that their role could be expanded. With the proper tools, courts could play an even greater role in protecting and promoting the right to food and serve as a source of redress for individuals whose rights have been violated.

Summary

National courts can play a key role in the advancement of the right to food by ensuring the right to food is upheld and through providing redress to individuals whose rights have been violated. Right to food litigation is still a relatively new phenomenon, with few domestic courts around the globe having expounded upon

its tenets or made findings of violations. Nevertheless, there have been cases where litigants have claimed violations of the right to food and where courts have made significant rulings on this most fundamental human right. This entry outlines the content of the right to food, the role national courts can play in implementing and enforcing the right to food, and what courts have done up to date.

Cross-References

- ▶ [Access to Land and the Right to Food](#)
- ▶ [Food Security in Systemic Context](#)
- ▶ [Human Rights and Food](#)
- ▶ [Land Acquisitions for Food and Fuel](#)
- ▶ [Poverty and Basic Needs](#)
- ▶ [Right to Food in International Law](#)

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Natural Food

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Introduction

In April 2012, a picture of a note posted in a natural food store in Rhode Island went viral. It stated that Kashi cereals were taken off the shelves because they were made with genetically modified ingredients. For many customers, the use of genetically modified soy was incompatible with the company's "natural" labeling, but Kashi argued they had not done anything wrong. As a spokesperson explained, "the company defines natural as 'food that's minimally processed, made with no artificial colors, flavors, preservatives or sweeteners.'"

This case highlights the confusion around the concept of natural food. The *Codex Alimentarius*, established by the International Food and Agriculture Organization and the World Health Organization, includes no principles or guidelines for the production and labeling of natural food (World Health Organization and Food and Agriculture Organization of the United Nations 2013). Many countries have nonetheless developed their own definitions of the term "natural" as it applies to food. In the United Kingdom, for instance, the Food Standards Agency restricts the use of the label "natural" to foods that have "ingredients produced by nature, not the work of man or interfered with by man" (Food Standards Agency 2008). In Canada, the *processes* involved are what matters; the Canadian Food Inspection Agency (CFIA) states that food products should not be described as natural if they

were "submitted to processes that have significantly altered their original physical, chemical, or biological state." CFIA goes on to give a list of processes affecting the natural character of food (Canadian Food Inspection Agency 2012, section 4.7). In the United States, the Food and Drug Administration (FDA) does not restrict the use of the term "natural," but discourages the food industry from using it. It is interesting to note that after beginning a process of trying to define the term in 1991, the FDA finally gave up in 1993 (Houchins 2008).

Kashi's case is not unique. Using the claim that some food is "natural" or "all natural" as a selling point is widespread in food marketing today. The success of the "natural" label as a marketing tool suggests that many customers are looking to eat food that is – at least in some sense – natural and that they consider that food labeled as such is somehow better than the food they deem "unnatural." A survey conducted among 1,006 US customers even shows that American customers do believe that a "natural" label is greener than "organic" (Scott-Thomas 2009). As the confusion around it shows, the term "natural" is a polysemous one. In his book *Keywords*, Raymond Williams (1985, p. 219) notes that "[n]ature is perhaps the most complex word in the language," and long before him, Hume (1978, p. 474) famously said of the word "nature" that "there is none more ambiguous and equivocal." This equivocity of "nature" makes it uneasy to clearly understand statements about the value-adding character of naturalness. This entry examines the various meanings of "natural" and their possible relevance for food ethics.

Natural, Supernatural, Artificial

A classical examination of the meaning of "natural" and its ethical relevance can be found in J. S. Mill's essay "On Nature" (Mill 1874). In this essay, Mill isolates two meanings of "natural." A first meaning, which will be referred to as **natural₁**, denotes "the sum of all phenomena, together with the causes which produce them; including not only all that happens, but all that is capable of happening; the unused capabilities

of causes being as much a part of the idea of Nature as those which take effect" (Mill 1874, p. 5). This concept includes as natural all that happens in the physical world and thus defines "nature" as opposed to the *supernatural* or the *miraculous*. In a second sense, which will be called **natural₂**, "natural" means "what takes place without the agency, or without the voluntary and intentional agency, of man" (Mill 1874, p. 8). In this second sense, *natural* is opposed to *artificial*, understood as *human-made*.

In the context of natural food, **natural₁** is an obviously trivial concept, as food production cannot escape the laws of physics and make use of *supernatural* powers. **Natural₁** is presumably the concept involved in most empty and deceitful claims of naturalness, such as those assigning an "all natural" label to highly processed food, like Frito-Lay's line of "natural" potato chips or "natural" white cheddar *Cheetos*.

Natural₂, by defining naturalness in opposition to human intervention, seems, at first sight, to be a more plausible value-adding concept of naturalness. It can be seen for instance on the packaging of juices containing "only fruits." "Natural food" is colloquially opposed to "processed food," and here the epithet "processed" points intuitively to some technological transformation operated by humans. However, given the fact that almost all food consumed today is somehow human transformed and that many ingredients would not be comestible prior to undergoing at least some basic processing (e.g., chopping, mixing, centrifugation, deboning, or cooking), the concept of **natural₂**, if it is understood as an *all-or-nothing* affair, risks casting the net of natural food on a too-restrictive class of products. Even raw fruits like oranges, which often remain green when they are ripe, are exposed to ethylene gas to make them orange and saleable. Under an *all-or-nothing* interpretation, perhaps only berries self-picked in the wild would count as natural food. But as Siipi (2008, pp. 77–8) remarks, **natural₂** need not be so restrictively construed and can also be interpreted as a *continuous gradient*. In such an interpretation, food can be more or less natural according to the *amount* of human transformation involved in its

preparation. Therefore, it seems that **natural₂** must be understood in this later way if it is to be applied to food in a practical way. There is a significantly different degree of transformation involved in, on the one hand, transformations that are usually not taken to destroy the naturalness of a product (e.g., grinding wheat and cutting up and cooking meat) and those involved in, on the other hand, the production of industrially processed food (e.g., hydrogenation, interesterification). Thus, **naturalness₂** interpreted as a *continuous gradient* seems better able than **natural₁** and the *all-or-nothing natural₂* to account for the distinction between natural and processed food by those who assign value to food in virtue of its naturalness.

A problem that remains with the continuous gradient **natural₂** concept, however, is that it appears to involve some level of arbitrariness. A first kind of arbitrariness comes from the fact that, as all other gradient notions when used for classificatory purposes, it faces a *threshold problem*. Provided that one could develop an uncontroversial way to quantify the degree of naturalness of a product (and this is far from being achieved), one would still have to establish a threshold above which some food is too human transformed to be legitimately labeled "natural." As the continuous gradient of **naturalness₂** logically cannot, by itself, provide grounds to establish it, such a threshold would have to be set in reference to a property other than naturalness (say, the property of being the result of *industrial* transformations). Yet it follows then that this other property would have to be defined with some precision, and, to avoid circularity, this definition would have to avoid any reference to naturalness. In this case, however, the products under the established threshold of naturalness would be established as more desirable not in virtue of their *naturalness₂ per se*, but in virtue of this other property by which the threshold is set.

Another, and perhaps more profound, way in which the **natural₂** involves arbitrariness is that, by defining naturalness in opposition to human agency, it implicitly sets humans outside of nature. This is arbitrary because it is widely

accepted, and has been since Darwin first voiced his theory, that humans are the product of the same evolutionary processes as all other living beings, and that there can only be differences of *degree* between what human and nonhuman living beings do (Callicott 1991, pp. 349–50; Vogel 2003, p. 152). In this context, it is arbitrary to draw a special class with the outcomes of human activities. One could withstand this upshot by putting forward that human activity is significantly different from what other living beings do, because we humans are cultural beings, and this allows us to have incomparably more dramatic impacts on our environment than those of other animals. This response seems plausible, as although, like humans, other species significantly modify their environments (Ereshefsky 2007, p. 60; Jones et al. 1994) and transmit knowledge culturally (Ereshefsky 2007, pp. 65–6; Callicott 1991, p. 351), it seems correct to assert that *Homo sapiens* are unrivaled in the *degree* of these modifications. As Callicott (1991, p. 351) notes, it seems reasonable to concede that “the cultural component in human behavior is so greatly developed as to have become more a difference of kind than of degree.” As many ecologists have remarked (e.g., Angermeier 2000), this degree of cultural sophistication is what allows humans to have extraordinarily destructive impacts on the earth’s ecosystems; the changes brought in the ecological world are so wide in scale that other species cannot evolve quickly enough to adapt to them. Similarly in the context of food and human health, one could argue that, given humans’ ability to synthesize artificial molecules, our species is a lot more likely to produce molecules that cause health and ecological problems (like many of the chemical pesticides widely used in agriculture).

But should these observations be right, they would not support the claim that the potentially harmful effects of human’s cultural abilities are such in *virtue* of their being the effect of human culture *per se*. The fact that our cultural abilities *can* generate harmful effects does not imply that they *must*. On the contrary, the very fact that humans are cultural beings is what makes it (in theory) possible for us to learn from our

mistakes and create more innocuous alternatives to our unsafe products. Thus, it seems that harmful unnatural₂ products are not to be disvalued because of their **unnaturalness₂** itself, but rather because of their harmfulness. Hence, given the fact that there is no *necessary* connection between ecological or health harmfulness and the concept of **naturalness₂**, the human/nature dualism presupposed by this concept seems to remain arbitrary.

Naturalness, Biological Normality, and Processed Foods

If customers were shocked by Kashi’s products, it is not because there is human agency involved in the production of those cereals. It is because they contained genetically modified soy. What is so special about genetic modification?

For ancient philosophers, “nature” was conceptually tied to *life*, as indicated by the etymology of the Latin word “*natura*,” which means “birth,” and its Greek equivalent “*physis*,” which means “growth.” In accordance with this etymology, Aristotle used “nature” principally to denote the inherent principle of growth and development of living beings. He viewed living beings as having their own teleological or goal-directed tendencies, and these tendencies explained their usual forms and directions of growth in terms of what is *natural* for them to do. As historians have observed, these teleological tendencies engendered *rules* regulating the typical behavior of natural entities. These rules admitted exceptions but stood *for the most part* or *the most often* (Daston and Park 1998, p. 120).

The possibility of exceptions to the rules of nature allowed Aristotelians to define a concept of naturalness which is different from Mill’s **nature₁** and **nature₂**. For them, “natural” meant what happens according to the *normal* rules determining the functioning of complexly organized entities (resulting from their *telos*), and “unnatural” referred to breaches of these rules. The paradigm case of unnaturalness in this Aristotelian sense was that of *monsters*. For Aristotle, monsters were unnatural neither in the sense of

supernatural (**unnatural**₁) nor in that of *human-made* (**unnatural**₂), but in the sense that they were deviations from the normal course of biological nature. This characterization indicates a third concept of naturalness: the **natural**₃, which can be defined as what happens according to the normal or ordinary course of the organic world. It is distinct from **natural**₁ in that this latter concept is tied to matter and its necessary laws (the basic laws of physics), whereas **natural**₃ relates to nature as organized into forms and its rules of normal functioning. It also differs from **nature**₂ in that it is not opposed in principle to human agency, for deviations from the normal course of organic nature can occur with or without human intervention.

Nowadays, a similar idea of breach of the ordinary course of biological nature seems involved in people's repugnance for highly processed food, sometimes referred to as the "yuk factor" (Midgley 2000; Siipi 2008, pp. 91–2). Yuk factor events are not reactions to the mere fact that some products are human-made (i.e., that they are **unnatural**₂). Processed foods are perceived as artificial in the much deeper sense that they involve types of transformations or modifications which seem to lie outside the normal course of biological nature. For instance, if chemicals are added in food products to make them grow faster, be less prone to damage caused by insects or fungi, or simply to look better and last longer, when the chemicals used are not part of the normal biological processes characterizing the life cycle of these products, they will be viewed as less **natural**₃. A study by Rozin (2005) illustrates people's intuitive use of a concept of **naturalness**₃ in the evaluation of the naturalness of a product. The study shows that the perceived decrease of naturalness is stronger in the case of *chemical* transformations than in the case of *physical* transformations. "Physical transformation" in Rozin's study denotes changes that do not alter the inner properties of the products involved, e.g., freezing water, grinding peanuts, or squeezing oranges, whereas "chemical change" denotes the opposite, e.g., boiling water, adding fat to peanut butter, pasteurizing, or irradiating milk. Such perception

points to a distinction between, on the one hand, **natural**₃ changes, that is, changes that do not alter the inner natures of the substances and entities involved, and which could happen through the normal course of the organic world, and, on the other hand, **unnatural**₃ transformations, that is, alterations that denature the substances and entities involved by exposing them to processes of change that do not normally occur in the organic world. The legal definitions of "natural food," in terms of processes mentioned at the beginning of this entry, also seem to involve such an opposition between chemical and physical processes of transformation.

Attfield (2006) defends the relevance of the **natural**₃ for health-related issues. He argues that

[T]he *good* and equally the *harm* of a living organism depend on its nature. If we did not know the nature of an organism, we could not tell what constituted its good or its harm. This is not just to say that the concepts of good and harm are species-specific; it is to say (unsurprisingly enough) that grasping the good or harm of a creature involves some grasp of its inherited constitution or make-up. (Attfield 2006, p. 111).

Attfield's contentions seem plausible. It appears reasonable to say that it is good, at least *prima facie*, for a being to grow and develop according to its nature. The standards of health for a living being depend on the kind of being it is; and as pain has plausibly evolved as a means to motivate animals to move away from things that threaten their life and health, it seems reasonable to think that, even for animals, there is a strong correlation between their well-being and what concurs with their natures. One possibly problematic case, however, is that of organisms of highly modified species (modified either through selective breeding or genetic engineering). If, in order to maximize profit, the genetic form of a species is selected in a way that it makes it painful for its members to grow according to their (human-modified) **nature**₃, then the correlation between **naturalness**₃ and well-being disappears. For instance, in the previous 40 years, milk yield per dairy cow has more than doubled due to genetic selection. As a result, declining fertility, increasing leg and metabolic problems,

and declining longevity have been observed. These are for the most part attributable to selection for increased milk yield and indicate a substantial deterioration in cow welfare (Oltenacu and Broom 2010). Today's dairy cows, then, are victims of their own **natural₃** growth processes, with individual cows prone to suffering without any further outside human interference.

From the perspective of the human food consumer, it may be healthier to eat **natural₃** food. Food whose production and conservation has involved significant chemical interference to normal biological processes is likely to be more harmful to health, if, as it often revealed to be the case, the chemicals involved have significant levels of toxicity for humans. However, if the chemicals involved kill some germs that are pathogens for humans, then their consumption will presumably be healthier than that of **natural₃** food products. Hence, there might be trade-offs involved when assessing the relation between **naturalness₃** and human health. One could nevertheless argue that, in general, given that the dangers related to **natural₃** food are easier to assess and predict than those of foods with chemical additives, in the absence of contrary information, **natural₃** food should be preferred. The harmful effects of biological pathogens are usually observable quickly enough after consumption so that a correlation can be drawn between them and their harmful effects. This is not the case with the harms related to chemical additives, which are less easily tractable and sometimes become visible only long after someone has been exposed to them. For instance, exposure to pesticides is an important environmental risk factor associated with cancer development, but its effects can appear years after exposure.

What about the case of GMOs? Genetically modified organisms, sometimes denigrated as “frankenfoods” by their detractors, are often said to be unnatural because they “cross the species barrier.” This idea of a “species barrier” seems to resonate well with the **nature₃** concept, as this concept is tied to the Aristotelian idea that species have essences which define their identity. Evolutionary biology, however, imposes

qualifications to such idea. As it has been emphasized by biologists and philosophers of biology (Sober 1980; Mayr 1959), this sort of essentialist thinking about species is disqualified by evolutionary biology. According to Darwinian biology, species are not eternal essences, but concrete lineages in a perpetually ongoing process of change. Hence, in a Darwinian biological world, there are no sharp species barriers, and in this context, the argument that GMOs are unnatural because they cross such barrier is a nonstarter. Thus, if one wants to make the argument that GMOs are **unnatural₃**, one should point to other sorts of deviations from the normal course of the biological world involved in genetic engineering.

A counterargument to the idea that GMOs are unnatural is the picture of genetic engineering as simply an alternative way to achieve what evolution does all the time: creating and selecting biological variation. According to this line of reasoning, genetic engineering involves nothing significantly different from artificial selection through repeated crossbreeding, a practice presumably as old as farming itself; and crossbreeding is itself equivalent to natural selection, as both use essentially the same processes (the selective pressures being the preferences of the breeder in the case of crossbreeding). But some would disagree with the view that there is no significant difference between genetic engineering and selective crossbreeding. In a biologically well-informed discussion of genetic engineering, Vandana Shiva (2000, p. 13) emphasizes important differences between the two practices: “[u]nlike conventional breeding, genetic engineering recombines genetic material from different unrelated species which do not interbreed in nature and for which there is no, or very little, probability of natural progeny.” As she illustrates, “conventional breeding does not transfer genes from bacteria and animals to plants. It does not put fish genes into potatoes or scorpion genes into cabbage. It crosses rice with rice, and wheat with wheat.” Hence, Shiva identifies ways in which genetic engineering achieves changes that could not occur normally in the biological world. Traditional crossbreeding faces the exact same

constraints as natural reproduction, while the technique of recombinant DNA allows GMO producers to get around these constraints and achieve genetic combinations which could not occur through normal evolutionary processes. GMO plants like the soy contained in Kashi cereals are now commonplace illustrations of such combinations, but research is currently being done on genetically modified animal products (though none are on the market yet). One is the AquAdvantage salmon, an Atlantic salmon in which genes from a Pacific Chinook salmon and an ocean pout have been added in order to make it grow year-round and for the fish to reach market size in half of the time required for its non-modified counterpart (16–18 months rather than 3 years). Some modifications also involve human genetic material. In order to produce an alternative to infant formula, which is often criticized as being an inferior substitute to human breast milk, Chinese scientists have recently introduced human genes into 300 dairy cows to give their milk the same properties as human mother's milk.

Thus, although the “species barrier” argument is problematic in the light of Darwinian biology, there may still be good reasons to categorize GMOs as **unnatural₃**.

Ecological Naturalness

Daston (2010) distinguishes two versions of naturalness as biologically normal: *specific* natures and *local* natures. *Specific* natures refer to the essences or the kinds of entities, that is, “to what makes an object be itself, in a recognizable and distinct way, to its ontological identity card: what makes gold is gold (and not copper for instance), what makes a bear is a bear (and not a trout).” This version of the natural as the biologically normal is the Aristotelian one, which was the focus of the previous section, and sets the standard of normality at the level of the living organism. The other version of naturalness as the biologically normal depicted by Daston is that of *local* natures. As she defines them, the local natures are the “characteristic combination of

the flora and fauna, of the climate and geology which confer a landscape its physiognomy: the desert oasis, the tropical forest, the Mediterranean coast or the heights of the rocky mountains” (Daston 2010, pp. 248–9). Daston adds that “[t]he modern science of ecology studies the way in which organisms and topography interact to create the distinct local natures; but the order of local natures was noticed long before the birth of this science” (Daston 2010, p. 249). According to this concept, “nature” refers to “the ecological world,” and “natural” denotes what is in harmony with the ecological world, or, in more technical terms, what promotes, or at least is not detrimental, to what some ecologists call ecosystem health (Dussault *In prep.*). This ecological concept forms a fourth concept of naturalness which will be referred to as **natural₄**.

The intuitive idea that the ecological world has an inherent balance which human industrial activities often upset is central to ecocentric views in environmental ethics (Leopold 1949; Callicott 1999, 1989), although it has been observed that the idea of a *balance of nature* may require qualifications (Callicott 2003, 1999; Botkin 1990). According to such views, some food production practices may be deemed unnatural in the sense of unecological (**unnatural₄**). A study by Verhoog et al. (2003) illustrates the intuitive appeal to a concept of **natural₄** made by organic farmers and organic food customers in their characterization of organic farming as more natural than industrial farming. The respondents in Verhoog et al.'s study said that it was necessary to view nature not “as a mechanistic material system but as a complex organic living whole” which has “a self-organizing capacity.” Moreover, although the respondents “[a]ll realized that farming as such is a cultural activity in which human beings interfere in nature,” they nevertheless thought that somehow organic farming is “harmoniously integrated into nature,” while conventional farming is not (Verhoog et al. 2003, pp. 35–8). The respondents' acknowledgement that farming is a cultural activity shows that the concept of naturalness they have in mind is not the **natural₂**, which excludes in principle humans' cultural

activities; and their depiction of human interventions in nature as more or less in harmony with it clearly suggests a concept of ecological naturalness.

Just like the concept of **naturalness₃** had immediate connections with the issue of human and animal health, the concept of ecological naturalness is directly tied to ecological issues. As this concept is defined as what is harmonious with the healthy functioning of ecological systems, what is natural in this sense should be expected to be good from an ecological standpoint. However, substantive questions remain about whether particular food production techniques, such as irrigation or the use of GMOs, are (un)natural in this sense. Is irrigation ecologically equivalent to rain (presumably a **natural₄** phenomenon)? Are GMOs always a threat to ecosystems? The complexity of ecological dynamics implies that giving definite answers to such questions an uneasy task. Nevertheless, some clearer answers can be found when one considers how these food production practices are *currently* implemented. Irrigation plays a crucial role in increasing crop yields and stabilizing production but also causes major environmental problems (Dougherty and Hall 1995). Meanwhile, GMOs initially supposed to free agriculture from chemicals are in fact used to bolster the chemical industry (Food and Water Watch 2013; Shiva 2000).

The connection between ecological naturalness and human and animal well-being issues is less straightforward. As humans and nonhuman animals can only thrive in healthy ecosystems, the goals of human and nonhuman well-being and that of ecosystem health seem to meet in the long term, but whether there are trade-offs between them in the short term remains an open question. Organic farming has been criticized as requiring more land to produce less food than conventional methods. The green revolution has contributed to a reduction in hunger in Asia; between 1970 and 1975, cereal production doubled, while land under cultivation only grew by 4 %. Can organic farming feed the world? There is no clear consensus on this question (McWilliams 2009, pp. 55–61). According to a recent meta-analysis of 66 studies presenting comparisons of organic

vs. conventional agriculture yields (Seufert et al. 2012), organic agriculture yields are typically lower than those of conventional agriculture, but these differences vary depending on the system and site characteristics and on the types of plants grown. The study reveals large organic vs. conventional yield differences for cereals and vegetables (–26 % and –33 %, respectively) and small ones for fruits and oil seeds (–23 % and –11 %, respectively). The study also observes that organic and conventional yields are more equal when best organic management practices are used (–13 %) and when organic legumes or perennials are grown on weak-acidic to weak-alkaline soils, in rain-fed conditions (–6 %).

One final observation about the concept of ecological naturalness concerns its relationship to **naturalness₃**. It may seem intuitive to suppose that if some food production involves a great deal of chemical transformation – thereby making it **unnatural₃** – this will also make it unnatural in the ecological sense. Some remarks by Odum (1971) on how ecological science should inform our food production practices, however, suggest that processed foods may sometimes be natural in the ecological sense:

Present agricultural strategy is based on selection for rapid growth and edibility in food plants, which, of course, make them vulnerable to attack by insects and disease. Consequently, the more we select for succulence and growth, the more effort we must invest in the chemical control of pests; this effort, in turn, increases the likelihood of our poisoning useful organisms, not to mention ourselves. Why not also practice the reverse strategy—that is, select plants that are essentially unpalatable, or that produce their own systemic insecticides while they are growing, and then convert the net production into edible products by microbial and chemical enrichment in food factories? We could then devote our biochemical genius to the enrichment process instead of fouling up our living space with chemical poisons! (Odum 1971, p. 269).

The first “Frankenburger,” made from lab-grown meat and consisting of stem cells that were placed in a medium to grow and reproduce and then bound together by Prof. Mark Post’s team in Maastricht, was recently served at a press conference in London. Compared with conventionally raised livestock, large-scale

production of cultured meat would reduce water, land, and energy use, as well as emissions of greenhouse gases. In vitro meat production may also decrease contamination with bacteria like *Salmonella* and *E. coli*, by eliminating contact with animal feces.

Another possible point of divergence between the **natural₃** and the **natural₄** concerns the debate over the (un)naturalness of vegetarianism. Usually, this debate centers around the question of whether our species has evolved to be herbivorous or omnivorous. This is a question about the **naturalness₃** of vegetarianism, that is, about the evolved normal capabilities of our species' digestive organs. From an ecological standpoint, however, what past evolution has made us physiologically capable of should not dictate what should or must be done. What matters in this case is what our species must *now* do to live in harmony its supporting ecosystems. It has been clearly shown that the earth's ecosystems will not be able to support the growing human population if we all eat meat (McMichael et al. 2007). Thus, insofar as we are able to live healthy lives on vegetarian diets, doing so may well be what is ecologically natural (**natural₄**) for us to do. This is indeed why ecocentrists like Callicott (2002) have emphasized the ecological reasons for vegetarianism:

Much of the plow land in midwestern United States is devoted to feed crops, such as corn and soybeans, most of which are eaten not by human beings, but fed to factory farmed cows, pigs and chickens. Animals burn about 90 percent of the food they eat and convert the rest (only 10 percent at best) to meat, so Americans would need only about 10 percent of the land now under cultivation to grow food if we consumed grains and legumes directly and altogether eliminated mass-produced meat from our diets. The elimination of industrial animal agriculture would, therefore, make millions of acres available for prairie restoration on a truly grand scale. (Callicott 2002, p. 319).

Summary

Four concepts of naturalness have been defined and discussed:

Natural₁: What happens according to the basic laws of physics? Natural as opposed to *super-natural* or *miraculous*.

Natural₂: What happens independently of human voluntary agency? Natural as opposed to *artificial* or *human-made*.

Natural₃: What happens according to the normal or ordinary course of the organic world? Natural as opposed to the *monstrous* or *biologically abnormal*.

Natural₄: What stands in harmony with the ecological world? Natural as opposed to *unecological* or *ecologically harmful*.

Natural₁ includes anything physically possible and so fails to draw a useful distinction between natural and unnatural foods. **Natural₂** seems at first sight to capture the intuitive natural/unnatural food distinction, but reveals problematic upon closer analysis for three main reasons: (1) It sets humans outside of nature when doing so is incompatible with Darwinian biology; (2) it is too restrictive when understood as an *all-or-nothing* affair, as almost all sorts of food involve human transformations, and (3) it faces a problem of threshold arbitrariness when understood as a *continuous gradient*. **Natural₃**, by drawing a distinction between biologically normal and abnormal processes, seems better suited to account for the intuition that highly processed and genetically engineered food is unnatural, and to justify, to some extent, the intuition that natural food is usually safer and healthier. **Natural₄** resonates with the common observation that some food production practices like organic farming are more natural in the sense that they are in better harmony with and less harmful to the ecological world.

This classification confirms the polysemous character of the term "natural" but at the same time reveals that this polysemy does not preclude the notion from being helpful in discussions of food ethics. Two concepts of naturalness, **natural₃** and **natural₄**, have been shown to have some relevance for issues central to this field, like animal welfare, human health, and environmental ethics. Indeed, many particular questions about the value of natural food remain when looking at specific issues discussed in those fields.

Cross-References

- [Food Labeling](#)
- [Food Risks](#)
- [GM Food, Nutrition, Safety, and Health](#)
- [GMO Food Labeling](#)
- [In vitro Meat](#)
- [Metaphysics of Natural Food](#)
- [Permaculture](#)
- [Responsible Innovation in the Food Sector](#)
- [Sustainability and Animal Agriculture](#)
- [Synthetic Meat](#)
- [Transgenic Crops](#)
- [Vegetarianism](#)

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Nietzsche and Food

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Introduction

Friedrich Wilhelm Nietzsche (1844–1900) was a German philosopher who is quoted as often as he is misunderstood. He is well known for his ideas of the “superman” (*Übermensch*), the “will to power,” and the “eternal return of the same,” along with his many quotable passages, chief among them is the proclamation that “God is dead.” It would be incorrect, however, to reduce his work to these ideas or even to take them as emblematic of his philosophy. This is no place to

engage in a debate over Nietzsche’s philosophical contributions and importance, but a few key (but by no means comprehensive) themes in Nietzsche’s thought will help to guide the reader through Nietzsche’s language of alimentation and digestion.

The theme of (1) “health” expresses Nietzsche’s positive valuation of practices and attitudes that affirm life and the power of individuals (“free spirits”) and cultures to grow and transform. Unhealthy individuals or cultures are weak, passive, and “decadent” in Nietzsche’s vocabulary. The process of decadence and weakening over the course of Western history is what Nietzsche calls (2) “nihilism,” the realization that there are no more absolute values or irrefutable truths. The utter radicality of Nietzsche’s thinking replaces truths or facts with (3) “interpretation” – Nietzsche’s desire to perform a “transvaluation of all values” is not simply a desire to replace the Christian values of his day with different ones, but rather the full commitment to life as a process of becoming, to live as if no values were absolute and to understand value as the result of a creative and interpretative process. To be a “free spirit” and live with health, strength, and vital force denotes the ability to give oneself over to self-transformation – a process Nietzsche equates with healthy digestion.

Food and Diet in Nietzsche’s Life

Nietzsche’s own struggles with illness throughout his life shape his writing and philosophy. As per the common medical practice of the time, which often identified an illness’ cause and treatment in the stomach (Weineck 2006, p. 37), he attributes his various health problems to diet and in response often indulges his family’s propensity for homeopathic cures. Even though the famous physician Professor Oppolzer of Leipzig diagnoses his illness as cerebral and not gastric, Nietzsche commonly rejected the advice of doctors who suggested treatments that limited his intellectual activity; instead, he favored dietary remedies and treatments for his stomach: his long-time doctor friend Professor Immermann in

1875 prescribed silver nitrate and, upon its failure, high doses of quinine (which a friend remarked constituted “experiments on [his] poor stomach”) (Young 2010, p. 207); soon after, upon his arrival at a clinic in Steinbad, he placed himself under the care of Dr. Joseph Wiel, a cookbook author and doctor of questionable skill, who prescribed daily cold water enemas, four small meals per day comprised mostly of meat, and food cooked only in enameled pots – “no water, no soup, no vegetables, no bread” as Nietzsche remarks in a letter to Marie Baumgartner (Young 2010, p. 208).

While there is disagreement as to the proper diagnosis of Nietzsche’s various ailments, his stomach problems were most likely caused by irritable bowel syndrome, a condition that persisted for his entire life (Young 2010, p. 209). Nietzsche’s own obsessiveness over diet and gastrointestinal health explain in some measure why the stomach was so central to his philosophical notions of an individual’s or culture’s health. Moreover, it is important to note that while in his early thinking moral health leads to physical and psychological health, this causality is reversed in his later thinking, such that moral and psychological health are taken as the good effects of physiological well-being (Young 2010) that has its root in the processes of alimentation and digestion.

Here Is the Man and His Diet

Perhaps the clearest and most direct account of Nietzsche’s own dietary habits and beliefs can be found in his autobiographical work *Ecce Homo*. This text arrives at the end of Nietzsche’s intellectual production and provides a comprehensive dietary lens through which to view Nietzsche’s mature philosophy. The stomach is the origin and cause of physical and spiritual (read: intellectual or cultural) well-being, even though they are never reduced to the body’s health. This hierarchy marks a reversal of the traditional dominance of the spiritual (and the visual) over the bodily (and the gustatory). Unhealthiness is marked by decadence and decay, an inability to digest properly (dyspepsia), or an inability to convert what is

digested into an intellectual or cultural transformation. Nietzsche claims he is not a decadent because he knows what to eat when he is ill; unlike the rest of society, he is able to digest and forget (Nietzsche et al. 2005, p. 76) and views himself as a living example of the positive, life-affirming qualities that distinguish the strong and vital spirit from one that is passive, weak, and unable to give itself over to transformation.

Nietzsche’s dietary prescriptions for overcoming the weight of these traditions and for discovering a life-affirming power are, as his biography suggests, equal parts real and metaphorical (or, as is perhaps better suited to his philosophy, one that problematizes the distinction between the two). He cautions that he is too easily affected by wine and spirits (in vino veritas makes little sense once the idea of truth is rejected) and prefers drinking water out of running fountains (Nietzsche et al. 2005, pp. 86–87). He opposes vegetarianism; does not recommend long, protracted meals; avoids snacking between meals; shuns coffee; and only drinks tea in the morning. He refers to these prescriptions as his “morality,” which includes the suggestion that one must “be aware of the size of your stomach” and choose hearty meals rather than ones that are too small because digestion involves the entire stomach (Nietzsche et al. 2005, p. 87). Of all diets (and cultures), he is most critical of the Germans, for “the German diet bears the weight of guilt (what doesn’t it have on its conscience!). . . German spirit is indigestion, it is never through with anything” (Nietzsche et al. 2005, p. 86).

Nietzsche views his own reading and writing through the lens of gastric health. One needs a “joyful belly” to read Nietzsche and to digest his “life-transforming” books (Nietzsche et al. 2005, p. 90). Those who remain silent and do not write transformative books like his are dyspeptic – lacking discernment in judgment and taste (the democratic spirit) – they swallow everything but do not properly digest it (Nietzsche et al. 2005, p. 80). This unwillingness and inability to change – the clinging on to worn out ideas of morality and culture – are the telltale signs of decadence, of the life-destroying power from which society must be saved. For Nietzsche

it is a question of *nutrition*, for “the ‘salvation of humanity’ is much more dependent on this question than on any theological oddity” (Nietzsche et al. 2005, p. 85). If nihilism is the long, slow, decadent decline of Western, Judeo-Christian values whereby all ultimate values are shown to be baseless, any recovery from or overcoming of that condition – what Nietzsche refers to as an active or accomplished nihilism – requires first and foremost a healthy body that can incorporate the foreign and partake in a continual process of self-transformation. Nietzsche suggests that nutrition, the practices that support life-affirming forces and engage the process of becoming and transformation, requires an unapologetic embracing of one’s own identity rather than a conception of self that is shaped by the herd mentality of prevailing cultural values.

A Critique of Modern Dyspepsia

For Nietzsche, the digestive process is analogous to the intellectual process of understanding and interpretation, with dyspepsia indicative of the individual or culture that consumes knowledge but does not actively metabolize it in a transformative way. Knowledge is not simply some fact or idea “out there” in the world, but something brought to consciousness and understood within the context of one’s own life – to know is to interpret experience in a manner fitting to one’s own perspective. In his second *Untimely Meditation*, Nietzsche first utilizes digestive language to describe modern culture’s unhealthy relationship with its own past as “a huge quantity of indigestible stones” of knowledge “consumed for the greater part without hunger” and no longer received “as an agent for transforming the outside world.” Such a culture will “perish of indigestion” (Nietzsche and Hollingdale 1997, pp. 78–79). In this early work, Nietzsche views the moral and spiritual health of an individual or society as the cause (not yet the effect) of its “bodily” health and vital energy – if one is morally and spiritually healthy, one can approach knowledge of the past as a cure and an aid to well-being; if taken in the wrong manner,

however, knowledge becomes a culture’s “historical illness.”

In the years 1876–1879, Nietzsche’s struggles with his own illnesses are accompanied by an increase in gastro-rhetoric. In *Human, All Too Human*, Nietzsche casts his own work in the light of a healthy stomach: “Writing ought always to advertise a victory—an overcoming of *oneself* which has to be communicated for the benefit of others; but there are dyspeptic authors who write only when they cannot digest something” (Nietzsche and Hollingdale 1996, p. 248). In terms of lived experience, he comments that “everyone nowadays lives through too much and thinks through too little: they are ravenously hungry but at the same time suffer from colic (dyspepsia), so they get thinner and thinner however much they eat.—He who says nowadays ‘I have experienced nothing’—is an idiot” (Nietzsche and Hollingdale 1996, p. 360). The key to experiencing life is not a distanced, objective, or even scientific reflection on it; rather, the experiences of life nourish thought, while, in a reciprocal manner, thinking enriches and transforms the experience of life: “For as long as one is experiencing something one must give oneself up to the experience and close one’s eyes: that is to say, not to be an observer of it while still *in the midst* of it. For that would disturb the absorption of the experience: instead of a piece of wisdom one would acquire from it indigestion” (Nietzsche and Hollingdale 1996, pp. 385–386). “Wisdom” is the product of healthy digestion and transformation into life rather than the mere consumption and preservation of life’s experiences.

A telling illustration of the connection between good digestion and vital, transformative energy can be found in Nietzsche’s critique of modernity and, most notably, his critiques of selfless, Christian moral values and the “herd” mentality of modern democracy and socialism. In a decadent society, “modern man understands how to digest many things, indeed almost everything,” but in a manner that does not transform him inwardly, but only reduces the external world to consumable material – he is “*homo pamphagus*” (Nietzsche et al. 1997, p. 104). Nietzsche is also skeptical of pessimists and

misanthropes unwilling to embrace the transformative potential of human creativity. Any deep dissatisfaction with existence is usually caused by “some great dietary mistake made by people over a long time” (Nietzsche et al. 2001, p. 124); and the misanthrope “speaks of being sick of people only when one can no longer digest them and yet still has one’s stomach full of them” (Nietzsche et al. 2001, p. 135). These images of the undisciplined eater who lacks a discerning sense of judgment or taste is perhaps the most common of all Nietzsche’s gastric tropes.

Nietzsche’s allegory *Thus Spoke Zarathustra* continues this critique of weak, modern individuals. On the one hand, they represent the herd and the rabble, those without discerning judgment who “are always sick, they vomit their gall and call it the newspaper. They devour one another and are not even able to digest themselves” (Nietzsche 2006, p. 35). In this inability to judge, however, one simply becomes omnivorous and devours everything: the “all-complacent . . . knows how to taste everything—that is not the best taste! I honor the obstinate, choosy tongues and stomachs, which have learned to say ‘I’ and ‘Yes’ and ‘No.’ But chewing and digesting everything—that is truly the swine’s style! To always say hee-yaw—only the ass learned that, and whoever is of its spirit!” (Nietzsche 2006, p. 155). If one wishes to be a free spirit able to undergo a transformation, one must protect the stomach by eating what is best and not what is most available: “their spirit is a ruined stomach: it recommends death! Because truly, my brothers, the spirit *is* a stomach!” (Nietzsche 2006, p. 165). Such a spirit is ready for transformation and the break with tradition, which requires taste, judgment, and critique. Zarathustra criticizes the beggar whose stomach “resists all such raging and hating and foaming over. Your stomach wants gentler things: you are no butcher. Rather, you seem to me a vegetarian and a root man” (Nietzsche 2006, p. 219). This last image not only seems to confirm Nietzsche’s suspicion about vegetarians but also rejects those who are slow to change and cling to tradition.

Nietzsche believes that European culture in the nineteenth century, and most notably German

culture, promotes traditional moral ideas that are hostile to life-affirming change and transformation. These false “free spirits” of Europe have “teeth and stomachs for the indigestible” (Nietzsche et al. 2002, pp. 41–42) and like any herd has a “crude appetite” for whatever is shoved down its throat. Their narrow-mindedness is equated to a slow speed of digestion, and Germans in particular digest in a slow, hesitating manner (Nietzsche et al. 2002, pp. 132, 135). In *On the Genealogy of Morality*, Nietzsche claims the healthy individual can forget and digest, while those who cannot forget or shut off their digestion are “like a dyspeptic—he can get rid of nothing, cannot metabolize it” (Nietzsche et al. 1998, p. 35). Such individuals also misinterpret the origin of “bad conscience” or guilt – understanding its true origin (in material culture, rather than the soul) requires “digestions” and “meditation.” Nietzsche’s entire critique of modern morality, and his belief in the “untimely” nature of his critiques, might be summed up in the following image: “We have probably all sat at tables where we did not belong; and the most spiritual among us (who are the most difficult to feed), are familiar with that dangerous dyspepsia that comes from a sudden insight into and disappointment over our food and dining companions,—the *after-dinner nausea*” (Nietzsche et al. 2002, p. 170). Even though his society is in decline, Nietzsche’s understanding of nihilism (the baselessness of all values) allows him to redeem humanity through its continual transformation – a process that requires an ability to digest what is other and interpret it in light of one’s own transformative perspective or “will to power.”

The Free Spirit of Digestion

If the two flaws of modernity find their alimentary expression in the inability to digest, and in a ravenous but undiscerning appetite for various forms of knowledge, Nietzsche’s remedies are expressed through a vital ability to digest, metabolize, and incorporate what is foreign and through a discerning dietary judgment known as “taste.” This is not merely a matter of nutrition or

aesthetics, but promotes a direct causality between the gastrointestinal health of the body and the spiritual health of an individual or society. Near the outset of *The Gay Science*, Nietzsche asks “Do we know the moral effects of foods? Is there a philosophy of nutrition?” to guide the growth of individual and shared life (Nietzsche et al. 2001, p. 34). Nietzsche not only suggests a reversal of traditional mind-over-matter causality but implicitly rejects any reduction to an absolute causal relation one way or the other. Nietzsche is, above all, simply concerned with the way that power is expressed in human life – the stomach is but one way of illustrating that expression.

For this reason, Nietzsche is able to admire the powerful origins of individuals and institutions he often condemns. In their early, non-decadent forms they illustrate a will to power and vitality of life through the processes of becoming and transformation, such as one finds in “the astonishing crudeness and self-satisfiedness of the church’s intellect during the time it was in process of formation, which permitted it to accept *any food* and to digest opposites like pebbles” (Nietzsche et al. 1997, p. 42). The strong stomach is an organ that allows one to endure pain and transform life’s insipid repast (Nietzsche et al. 1997, p. 166). Invoking an image that also appears in *On The Genealogy of Morality*, Nietzsche’s Zarathustra reflects: “My stomach—it must be the stomach of an eagle? Because what it loves best is flesh of lamb. Certain at least, it is the stomach of a bird. Nourished by innocent things and by a little, ready and impatient to fly, to fly away—that is just my way” (Nietzsche 2006, p. 153). This digestive freedom constitutes a very particular sort of power, as it is open to otherness and yet (somewhat paradoxically) unabashedly egoistic. Digestion in this sense constitutes a form of interpretation: one does not merely passively accept and become what is taken in; nor does one actively destroy and assimilate the other completely into oneself. The model here is reciprocal, with the healthy eater allowing herself to be transformed only to the degree that the process is also transforming and shaped by the eater; and through that transformation, the other

and the self are metabolized, literally, thrown-beyond themselves into something new. Artistic or cultural creation (great works, new paradigms, moral values, etc.) is not *ex nihilo*, but arrives through process of incorporation and transformation that is an interpretation or, in Nietzsche’s more popular terminology, an expression of “will to power.”

The ability to create in this way – an act that ultimately constitutes a form of interpretation guided by a hierarchical (re)ordering of values – relies on a certain degree of taste, an ability to judge, and carefully select what one ingests and what one allows to participate in the transformative metabolism of the self. This ability to discern and judge arises from a certain mode of life, the nourishment and diet of the “tastemakers” (Nietzsche et al. 2001, p. 56). Nietzsche claims that “you must eat, not only with your mouth, but also with your head, so that you shall not perish by the mouth’s love of sweetmeats” (Nietzsche and Hollingdale 1996, p. 278). More than a heightened cultural or artistic sensitivity, there is a level of rational control over what and how much one takes in: rather than coming to the table hungry and at the mercy of one’s appetites, one deals with people and one’s society as if one were building trust in a kitchen whose cook is unfamiliar (Nietzsche et al. 2001, p. 229). In an aphorism (displaying Nietzsche’s not uncommon misogyny) entitled “Stupidity in the Kitchen,” Nietzsche claims that women have no knowledge of philosophy and the effects of food. The stomach, like the soul, should be guided by our reason and discerning will rather than by the loss of its control (Nietzsche et al. 2002, pp. 125–126). These thoughts do not promote rationalism, a tradition in philosophy that Nietzsche clearly opposes; yet, Nietzsche is not simply an irrationalist who wishes to relinquish the will to passivity and emotion. One could argue that for Nietzsche, a healthy will is guided by active and egoistic reasons and motivations – an unapologetic confidence is one’s own tastes and ways of doing things.

This thinker or “free spirit” lives on poor fare, like a dancer: “There is no formula for how much a spirit needs for its nourishment; but if it has

a taste for independence, for quick coming and going, for wandering, perhaps for adventures of which only the swiftest are capable, it would rather live free with little food than unfree and stuffed” (Nietzsche et al. 2001, p. 246). Nietzsche is not advocating, however, a life of the ascetic (whose complete restrictiveness undermines good digestion, as he points out in Treatise III of *On the Genealogy of Morality*). One has to understand how much and what sorts of food to ingest, which virtues and ideas to accept, and which ones to reject: “Each of these choices—of nutrition, of location and climate, and of recuperation—is governed by an instinct for self-preservation that is most clearly expressed as an instinct for *self-defence*. . . . The usual word for this instinct of self-defence is *taste*” (Nietzsche et al. 2005, p. 95). Nietzsche does not propose a simple reduction to Darwinian self-preservation; rather, the “free spirit” validates his own perspective or interpretation through its defense, through a desire to be uncompromising and often untimely.

Is the Stomach the Heart of Nietzsche’s Philosophy?

For Nietzsche, a healthy and vital digestive power involves a discerning openness to new ideas and an ability to incorporate those ideas in a process of becoming: “all of which are necessary in proportion to the degree of its appropriating force, its ‘digestive force,’ to speak metaphorically—and *really*, ‘spirit’ resembles a stomach more than anything” (my italics, Nietzsche et al. 2002, p. 122). Nietzsche certainly problematizes the line between the real and the metaphoric, as neither the spirit nor the body are simply “facts” or givens to be reckoned with. They are themselves modes or ways of interpreting the world that cannot be reduced to a purely physiological explanation of cultural and individual health: “A strong and well-constituted individual digests his experiences. . . . If he ‘cannot cope’ with an experience, this kind of indigestion is just as physiological as that other one—and in many cases in fact only one of the

consequences of that other.—With such a conception one can, speaking among ourselves, still be the strictest opponent of materialism” (Nietzsche et al. 1998, p. 93). This claim is, however, difficult to reconcile with the seemingly more materialistic and reductionist position Nietzsche takes in *Twilight of the Idols*: “It is crucial for the fate of individuals as well as people that culture begin in the *right* place—not in the ‘soul’ (which was the disastrous superstition of priests and half-priests): the right place is the body, gestures, diet, physiology, *everything else* follows from this. . . .” (Nietzsche et al. 2005, p. 221). Such contradictions are not uncommon in Nietzsche’s philosophy and in many ways point to the active and interpretative criteria to which he held even his own thinking.

Ultimately, should the metaphor of digestion be taken only as that – yet another rhetorical device employed by Nietzsche the writer to help illustrate, in a mode other than traditional philosophical argument, how humans relate to the cultural ideas that shape their social environment? Or should digestion be understood in a more literal and existential way – namely, as the physiological basis and source of human cultural production and self-understanding? The status of these digestive tropes is the subject of some academic discussion and mirrors a more general debate in Nietzsche scholarship over the degree to which Nietzsche is a materialist. In *Nietzsche: The Body and Culture*, Blondel argues that Nietzsche’s gastric metaphors are themselves metaphors for interpretation, with interpretation itself serving as an ultimate yet circular principle through which new cultural ideas arise and old ones are either reincorporated or overcome in the “body” politic but not, however, reduced to the physical human body (Blondel 1991, p. 219). In the end, the strength of a culture is associated with its ability to change, grow, and be discerning about what it chooses to “incorporate.” Nietzsche’s metaphors of digestion are thus “a scheme with which to interpret culture as interpretation” (Blondel 1991, p. 229). Medeiros argues that, at least in the practice of reading in *The Gay Science*, devouring and interpretation are interchangeable. Medeiros criticizes

Blondel's strictly metaphoric interpretation and argues that politics, morality, and art should be viewed as extensions of physiological acts (Medeiros 1993, pp. 96–97). Weineck places Nietzsche's digestive tropes in the interpretative middle between consciousness and physiology, suggesting that Nietzsche "re-literalizes" digestion as spirit embodied, replacing Hegel's *Aufhebung* with a form of overcoming and becoming that by design resists its own completion and absolutization (Weineck 2006, pp. 37–39).

How to Become What You Eat

In the figure of digestion, Nietzsche undermines the mind-body distinction so that the process of interpretation is reduced neither to pure cognition nor to pure physiology, illustrating how to digest and metabolize the very distinction between body and mind and nature and culture. Digestion points to a hermeneutic circle of interpretation that, without any absolute foundation, is always on its way to the next interpretation, always in a process of becoming, always metabolizing. Nietzsche's autobiography *Ecce Homo* carries the subtitle "How to Become What You Are." In light of the maxims put forward by two other thinkers of the nineteenth century (Feuerbach's "you are what you eat" and Brillat-Savarin's "Tell me what you eat, and I will tell you what you are"), one could perhaps summarize Nietzsche's meditations on digestion, and perhaps the whole of his philosophy, with the revision: "how to become what you eat." Unlike his contemporaries, Nietzsche does not offer us a description of human existence and understanding nor even a prescription. Life – physical or cultural – always carries with it the risk that accompanies any ingestion, whether of food or ideas. To consume and digest, and thus to think and create, is (somewhat paradoxically) to assert oneself in the act of transforming into something other, to be open to otherness when becoming who one is.

Cross-References

- [Food-Body Relationship](#)
- [Foucault and Food](#)
- [Gustatory Pleasure and Food](#)
- [Vegetarianism](#)
- [You Are What You Eat](#)

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Obesity and Consumer Choice

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Synonyms

Consumer freedom; Free choice; Public health
and obesity

Introduction

Obesity presents a major set of issues relating to health and society. These issues arise at local, national, and international levels, effecting individuals, families, communities, health infrastructure, and on some accounts, even the global climate (Egger and Swinburn 2010). Given the individual and collective costs of obesity, many (Egger and Swinburn 2010) are calling for an organized response to the problem. While there are a number of different ways of responding to obesity, one particularly important and contentious set of responses centers on consumer choice, particularly their food choices. That is, given consumption's causal role in obesity, consumer food choices present a key intervention point to reduce obesity levels. This entry looks at discussions around, in support of and in opposition to, consumer choice as a morally justifiable and practically worthwhile way of reducing obesity.

This entry begins with a background summary of ways that obesity has been characterized, as being overweight, body mass index (BMI), waist-to-hip ratio (WHR) or waist circumference (WC), total body fat, and visceral adipose tissue (VAT). It then looks at individual health concerns about obesity and the changing rates and spreads of obesity in the past few decades. The entry covers the relative importance assigned to obesity, as a problem of individual health, public health, wasted food, and wasted arable land. In order to understand the rise of and ways of responding to obesity, a set of causes are explored, including the “simple model” of too much energy in, not enough energy out; individual genetics; lifestyle; food amounts; food types; food desirability; and food availability and access. Consumer choice is then identified as one way of responding to a number of obesity's causal factors. Consumer choice itself is then characterized in a number of ways covering the range of options to consumers and the consumer's capacity to make decisions regarding their food consumption. The chapter then looks at proposed government interventions in consumer choice to decrease obesity rates and finishes with a summary of reasons for and against government intervention in consumer choice.

Background

Obesity is a major issue. For example, in the United States, three in five members of the adult

population are estimated to be currently overweight, and one in five is estimated to be obese (Pollan 2006, p. 102). While the United States is often held as a paradigm example of the obesity epidemic (Kessler 2009, pp. 3–6), this pattern is common across most western countries and is now being replicated in emerging economies like India and China and in the developing world (Kessler 2009, pp. 111–114; Schlosser 2003, pp. 242–243). The rate and spread of obesity has shifted. Since the 1970s, rates of obesity have risen dramatically (Egger and Swinburn 2010, pp. 10–13; Roberts 2008, pp. 89–90). The distribution of obesity within the population has shifted – where obesity once manifested in adult years, child obesity rates have rose in the period 1980–2000 (Roberts 2008, p. 89) but may have now leveled off (Ogden et al. 2012). Similarly, obesity was once fairly restricted to economically well-off, but is becoming more prevalent in the poor of the developed world (Roberts 2008, p. 96). Finally, those in the developing world are now replicating the obesity rates found in the developed world (Egger and Swinburn 2010, pp. 13–14; Schlosser 2003, pp. 225–252).

These rates of obesity are worrying, not simply because they are increasing but because of the costs to individuals and the increased burden of non-communicable disease to national health-care infrastructure – The US Centers for Disease Control (CDC) put the costs of obesity and its related diseases at US \$75 billion and linked it to 112,000 premature deaths (Roberts 2008, p. 83). Some draw links between obesity in the developed world and starvation in the developing world (Patel 2007), while others draw links between the rise of obesity and climate change (Egger and Swinburn 2010, pp. 52–64). In short, many see obesity as one of the major health and environmental concerns of this century.

Part of the problem with obesity is that it is a “complex problem,” with many associated causes (Roberts 2008, p. 84) and many possible ways of treating the problem. As such, obesity raises a set of correlated empirical, conceptual, and ethical questions – What is it? What causes it? How can societies respond? How should societies respond? Should societies respond at all?

Given that obesity is caused in part by certain patterns of food consumption are typically implicated in the recent rise of obesity, consumer choice is seen as one key way of intervening to treat the problem (Egger and Swinburn 2010, pp. 80–83). “[O]ur bodies are far more efficient at gaining weight than at losing it. Health officials have concluded that prevention, not treatment, offers the best hope of halting the worldwide obesity epidemic” (Schlosser 2003, p. 243). However, even if this is practically feasible, as this entry will show, such interventions – especially if centrally organized through government sponsored programs – in consumer choice are controversial and face opposition.

What Is Obesity?

How has obesity been characterized? Firstly, and most obviously, obesity means a person is overweight: the obese person has more weight than is normally considered healthy. However, as this simple description shows, obesity is more than simply being overweight. Obesity refers to some deviation from a normal weight range that correlates with some associated health concerns. A sensible definition of obesity must include something more than “overweight”; it must have some measure of normal weight range and the associated deviation and must have some explanatory association with health.

One of the most commonly used measures is body mass index (BMI). This was first described by Adolphe Quetelet in the late nineteenth century (Egger and Swinburn 2010, p. 20). However, the BMI is a coarse indicator and may not necessarily correlate with health concerns – rugby players, for example, can display a BMI in the obese range, while being exemplars of good diet and peak physical health (Egger and Swinburn 2010, pp. 20–21). More recent measures include the waist-to-hip ratio (WHR) and waist circumference (WC). In WHR, men and women are said to be obese when their waist is larger than their hips by a ratio of greater than 1 or 0.9, respectively, or display a WC of 102 and 94 cm, respectively (Egger and Swinburn 2010, pp. 21–22).



Though perhaps a more reliable indicator of health concerns like the BMI, WHR, and WC are still a coarse correlative measure. However, being overweight is itself not necessarily the major concern. Instead, people should be focusing on the actual physiological risks that typically come with obesity, such as the visceral adipose tissue (VAT), in which internal fat around organs such as the kidneys and liver stomach has shown a strong correlation with insulin resistance and Type 2 diabetes (Egger and Swinburn 2010, p. 22).

The multiple definitions of obesity also point to the complexity of *dealing* with obesity; given the lack of consensus on definitions, consensus in responses would be surprising. For the purposes here, the general description of obesity, “some deviation from a normal weight range that correlates with some associated health concerns,” will be used to investigate responses to obesity.

Why Is Obesity Important?

Despite the multiple descriptions of what obesity is, there does seem to be a loose consensus that obesity is a major problem. Why are people concerned about these changing rates and patterns of obesity? Obesity is typically understood to correlate with health concerns. Obesity is may be an indicator, or a cause, of health concerns such as diabetes, heart disease, and cancer (Egger and Swinburn 2010, pp. 23). It is seen as important for the direct impacts that it has on individual health. In addition to the personal cost, obesity is a major public health issue. For instance, the annual costs to the American health care and economy in the mid-2000s by the CDC were said to be US \$61 billion and US \$56 billion on direct medical cost and indirect costs including wages, respectively (Roberts 2008, p. 91). Given its increased incidence in childhood and its emergence in the developing world, the burden of obesity is expected to continue increasing.

A further concern is the waste of food and land. If obesity is a result of overeating, then such food is a waste and one that is especially problematic given the amount of people currently

suffering from under-eating (Patel 2007, pp. 1–6). Similarly, given concerns about global climate change (Egger and Swinburn 2010, pp. 54–59) and reduced access to arable land, some hold that obesity is indicative of an unfair use of resources and arable land (Roberts 2008, pp. 144–174).

What Are the Causes of Obesity?

The simplest explanation for obesity is that people are taking too much energy in and not putting out enough energy, that is, eating too much and not exercising enough. This produces an oversupply of calories, which are then converted to fat, producing weight gain. When this imbalance is persistent through time, a person becomes obese (Egger and Swinburn 2010, pp. 10–18; Kessler 2009, pp. 7–8). However, such a description is simplistic. It does not identify causal elements nor explain why obesity spreads and rates have shifted so dramatically in recent decades (Egger and Swinburn 2010, pp. 19–27; Roberts 2008, pp. 88–91). Individual genetics are sometimes assigned a particularly important causal role; however, as with the energy imbalance explanation, assigning causal responsibility to genetics alone does not explain the shift in rates (Egger and Swinburn 2010, pp. 16–17).

One key element is changing lifestyle. Many now live lives that are much more sedentary than in any other time in human history. Many jobs are now minimally demanding physically, travel is typically by car or other transport, and when home people are more inclined to sit than be physically active (Pollan 2006, p. 110; Roberts 2008, p. 94). However, given the variation of lifestyles around the world, lifestyle alone is not likely to be the main causal factor.

In line with the simple idea that there is too much energy going in, i.e., overconsumption, increased consumption itself is posed as a major cause. Eric Schlosser writes “[w]hat has changed is the nation’s way of eating and living. In simple terms: when people eat more and move less, they get fat” (2003, p. 240), a point mirrored by Paul Roberts (2008, pp. 83–84). As one example of

increased consumption, Roberts has stated that the serving sizes in recipe books have increased across the past decades (Roberts 2008, pp. 100–101).

Further to this, the actual content of what people are eating has changed substantially in recent decades (Pollan 2006, pp. 109–119; Roberts 2008, pp. 29–56). Schlosser writes that “[w]hat we eat has changed more in the last forty years than in the previous forty thousand” (Schlosser 2003, p. 7). For instance, while beef consumption in the United States was at 90 lb per person in 1976, by the mid-2000s it was 68 lb per person (Schlosser 2003, p. 142), to be replaced by chicken, largely due to the development of the chicken “nugget” (Pollan 2006, p. 114). Annual patterns of individual potato consumption have shifted heavily toward chips/fries, from 81 lb of fresh potato and 4 lb of french fries in 1960 to 49 lb of fresh and in excess of 30 lb of french fries (Schlosser 2003, p. 115). Similarly, restaurant/takeaway food represents 50 % of food spending (Schlosser 2003, p. 4). Importantly for obesity, these food types are highly processed, leading to substantial increase in consumption of refined sugars, particularly high-fructose corn syrup (HFCS) (Pollan 2006, pp. 103–14; Roberts 2008, p. 92) and saturated fats (Egger and Swinburn 2010, p. 35; Roberts 2008, p. 97), which have been associated with raised insulin levels, decreased insulin sensitivity, and VAT (Egger and Swinburn 2010).

Recent work in the area of obesity suggests that rise in sugars, fats, and salt in processed foods contributes to increased consumption (Kessler 2009, pp. 12–17). Prior to the modern era, sugars, fats, and salt were in limited supply so humans evolved a strong flavor preference for these (Egger and Swinburn 2010, p. 35; Roberts 2008, pp. 84–89). Former commissioner of the US Food and Drug Administration (FDA) David Kessler has recently argued that humans are hard-wired into finding foods with a mixture of sugar, salt, and fats highly desirable (2009, pp. 3–64). As such, increasing the content of sugars, fats, and salt in processed food increases the desirability of such foods. Similarly, in recent times, advertising and placement of foods, particularly

processed foods high in sugars, fats, and salt, have increased in sophistication and penetration (Schlosser 2003, pp. 43–55), leading to increased desirability for those advertised foods (Kessler 2009, pp. 50–54).

A further element is that the environmental conditions around consumption have changed. Availability and access to these processed foods has increased. Food distribution points such as schools, offices, and supermarkets make processed foods highly available (Schlosser 2003, pp. 51–57). Secondly, processed foods are often cheaper than fresh/unprocessed foods (Harrison et al. 2010; Pollan 2006, pp. 95–97). Further, the time taken between desiring to eat the food and consumption of the food is short (Kessler 2009, p. 95). Finally, the “cognitive environment” is similarly colonized by such food types: children are heavily targeted by fast-food company marketing (Schlosser 2003, pp. 42–47). Product placement in cultural and sporting events is common (Kessler 2009, p. 199), and Kessler explains that, given the sugar, fat, and salt content of such foods, mere mention is enough to trigger a desire to consume it (Kessler 2009, pp. 3–64).

What Is Consumer Choice?

Given that obesity is potentially harmful to individuals and can place great burdens on public health systems, many propose that there is a *prima facie* case for governmental intervention in food consumption. For instance, Egger and Swinburn state that “[i]nitiatives that identify the *population*, not the individual, as the unit of intervention are...likely to have the most impact on obesity and chronic disease” (Egger and Swinburn 2010, p. 39). One such point of intervention is at the product/consumer interface, for instance, reducing the size of serving plates and packages, what Richard Thaler and Cass Sunstein call “choice architecture” (Thaler and Sunstein 2009, p. 44).

There are a number of ways to conceptualize consumer choice, and these different conceptions bear upon both the sorts of government



interventions used to reduce obesity and how permissible they are. Beginning at the consumption element, consumer choice can be thought of as options – the range of food types available to consumers or, equally, the range of supplier types distributing food to consumers. However, consumer choice can also be considered within more common elements of philosophy, particularly the capacity to make decisions, knowing what those decisions mean, and reflectively endorsing those decisions.

Choice as Options

Often, consumer choice is equated with a range of options that the consumer can select between. For instance, consumer choice can be considered as the access that a consumer has between brand types in stores. It may also be considered as the range on a menu that they select from. Similarly, consumer choice can be considered as the range of different food types that a consumer has access to. A contrast can be made here between consumer choice as selecting between soda brands, between soda sizes, and between soda and juice. Importantly, some argue (Patel 2007, pp. 12–14) that given the monopolization of food suppliers and distributors, the actual difference between these options is limited. For instance, in the United States, the majority of beef that people eat (80 %) comes from four main suppliers (Pollan 2006, p. 63; Roberts 2008, p. 74). Given such monopolies, the decisions made by these beef suppliers about the content in their food products impact heavily on the actual choices of the consumers (Patel 2007, pp. 12–14).

Choice as Capacity to Make Decisions

Within standard bioethics, a medical procedure must be consented to by the patient, and for this consent to be meaningful, the patient must be properly informed about their choices. Similarly in consumption, an informed consent model of choice might be offered in which a person must know the content of their choice in order for that

choice to be meaningful. This may then require that the consumer know the food type that they are consuming – its ingredients and various production methods. Kessler argues that breaking “sugars” down into multiple entries on a list of ingredients gives a false idea to the consumer of how much sugar they are consuming (Kessler 2009, p. 103).

On a similar informed consent line – where obesity is concerned – the consumer needs to properly understand the correlation between a given food option and obesity. Kessler argues that people don’t properly know what it is when they are eating (Kessler 2009, pp. 101–110). The recent development of “traffic light” systems on food packaging is one way of giving consumers access to easily recognizable indicators of a food’s content and its potential association with obesity (Egger and Swinburn 2010, p. 101).

A third way of conceptualizing consumer choice is whether the individual actively endorses their decisions. Brian Wansink describes a host of perceptual and environmental triggers that impact on food types, serving sizes, and consumption patterns (Wansink 2006). In a similar line of thought, Kessler argues that the sugar, fat, and salt content of processed foods, mentioned earlier, have the capacity to override people’s capacity for reflective decisions (Kessler 2009, p. 58–60). Rebecca Brown has argued that, in order for a consumer to be held properly responsible for their food decisions, they must not only be properly informed of the impact of their food choices but be able to reflectively endorse such decisions (Brown 2013). Many point out that given their limited cognitive capacity and limited social development, children are both unable to make properly informed decisions and to reflect upon these decisions (Pollan 2006, pp. 109–110; Roberts 2008, pp. 83, 105; Schlosser 2003, pp. 43–57).

Government Intervention in Food Choice

Given the costs individually, nationally, and globally, people argue that there is

a governmental responsibility to intervene in the food choices made by consumers (Egger and Swinburn 2010, p. 35). There are, however, a range of different interventions that a government can make.

One intervention point is in the market, through changes to taxation and subsidies of obesity causing foods, such as the Danish tax on saturated fats, introduced in 2011, but removed in late 2012 BBC (2012). Paul Roberts and Michael Pollan have both argued that many fast food and highly processed foods are unnaturally cheap as a result of tax subsidies and government support of certain food types and production methods (Kersh and Morone 2002, pp. 150–151; Pollan 2006, pp. 200–201; Roberts 2008, pp. 135–136). In order to reduce obesity levels, they both argue, such subsidies should be reduced or removed, making processed foods more expensive and less accessible, and so reduce consumption.

In line with the informed consent model of consumption, many regions have particular food labeling requirements. As mentioned, common examples of this are the traffic light system or “calorific score” which some governments have made mandatory on all takeaway food, i.e., the New York City requirements for calorie labels on menus (Grynbaum 2012).

A key battleground revolves around advertising. Many writers and activists promote bans on advertising especially to children and to require more advertising of healthy choices. For instance, Schlosser discussed the US attempts to ban advertising fast foods to children in the early 1980s (Schlosser 2003, pp. 45–46) Gary Egger and Boyd Swinburn describe a similar attempt made in Australia in the early 2000s (Egger and Swinburn 2010, pp. 96–103). In reference to food availability, Schlosser describes attempts limit to the access of fast-food suppliers to vulnerable areas such as the provision of vending machines and fast-food distributors in schools (Schlosser 2003, pp. 51–57).

Rather than directly banning certain food types and distributors, Richard Thaler and Cass Sunstein describe what they call “liberal

paternalistic interventions” to improve healthy choices. For instance, they argue that it is not necessary to constrain negative choices but to make healthy choices easier and more attractive. One example they cite is to make fresh fruit easier to reach than processed foods (Thaler and Sunstein 2009).

A more direct approach can involve directly prohibiting the sale of certain food types and/or distribution options. For instance, in 2012, New York City attempted to bring in a law that prohibited the sale of supersized soda serves. However, due to opposition, at the time of writing, this direct attempt at intervention in New York City was unsuccessful (Davies 2013; Olson 2013). The reasons for and against government intervention in consumer choice are discussed below.

Reasons for and Against Governmental Intervention via Consumer Choice

As many of these reasons have been mentioned already, this section will summarize reasons for government intervention in food choices. Firstly, given the role of consumption in individual health and given the aim to decrease individual burden of disease (also mentioned below), a government has a duty to protect individual’s health. Note that this is not a universal argument, as certain libertarian positions would restrict the role of government to the nightwatchman. Robert Nozick is perhaps the paradigm example of this position (Nozick 1974). Second is the increased burden on public health. Thirdly, reducing unnecessary consumption can lead to decreased use of arable land and water and may decrease pollution (Egger and Swinburn 2010; Patel 2007). Finally, due to the increased intensity of high-throughput food industry, some argue that obesity indirectly places a heavy burden on workers (Schlosser 2003, pp. 169–190) and animals (Singer and Mason 2006).

As mentioned, at the time of writing, New York City had failed in its attempt to introduce laws banning the sale of supersized soda serves



(Davies 2013; Olson 2013). Given the reasons people give to reduce obesity, why would interventions be unsuccessful? There a set of related reasons that people raise against organized interventions in consumer choice, with governmental intervention seen as particularly problematic: individual freedom; personal responsibility; practical failure; and unfairness.

The first opposition comes from the idea of individual freedom. If freedom is about choices, then a reduction of options is a reduction of individual freedom. Any attempt to reduce the range of options available to consumers is unjustified governmental interference in individual liberty. For instance, Professor Russell Roberts states “The government should stay out of personal choices I make. . . My eating habits or yours don’t justify the government’s involvement in the kitchen” (Quoted in Kersh and Morone 2002, p. 142). Justice Tingle who ruled that the New York City ban on large-sized soda drinks saw the ban as “eviscerating” the separation of powers between elected officials and the unelected board who proposed the ban (Davies 2013).

Similarly founded in personal liberty, another set of reasons come from personal responsibility. This is derived, in part at least, from the idea that a person must endorse their choices for those choices to be meaningful. By reducing the set of options that a person can make, governmental interventions reduce the capacity for that individual to actively endorse their own choices. By making the government responsible for such choices, such interventions limit the individual from taking responsibility for their obesity. “A return to the discarded idea of changing individual behavior may be necessary. One way or another, the public. . . must be persuaded of a number of points. Whether or not they recognize their own role in it, they need to understand that obesity is a national health problem. . . Not just their own welfare is at stake” (Callahan 2013, p. 37). One proposal is to use social stigmatization against obesity to motivate individuals away from obesity: “[y]et it is hard to imagine that much progress can occur toward

solutions for obesity unless we bring some form of social pressure to bear against it” (Callahan 2013, p. 38). Such social disapproval is argued by some to be necessary for effective control of private behavior (Kersh and Morone 2002, pp. 143–144).

Another position against certain government interventions are the likelihood of failure. Daniel Callahan points to evidence various methods of reducing obesity, particularly simple individual dieting have been so far unsuccessful (Callahan 2013, pp. 35–36). One criticism of the New York City soda ban was that it was arbitrary and capricious, in that the ban only related to some drink types and not others (Olson 2013). A further set of reasons against such direct government interventions are that they unfairly place burdens on certain industries and food growers (Grynbaum 2012).

Summary

This entry describes the problem of obesity, characterizes different ways of conceptualizing obesity, and raises a series of causes for it. Looking at consumer choice as a key causal element in obesity, the entry surveys different aspects of consumer choice and then covers a series of arguments in support of and in opposition to government interventions into consumer choice as legitimate methods to control obesity.

Cross-References

- ▶ [Food Addiction](#)
- ▶ [Food and Choice](#)
- ▶ [Food and Health Policy](#)
- ▶ [Food Ethics and Policies](#)
- ▶ [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)
- ▶ [Food Waste](#)
- ▶ [Industrial Food Animal Production Ethics](#)
- ▶ [Industrialized Slaughter and Animal Welfare](#)
- ▶ [Informed Food Choice](#)

- Obesity and Responsibility
- Political Consumerism: Consumer Choice, Information, and Labeling
- Private Food Governance

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Obesity and Responsibility

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Synonyms

Childhood obesity and responsibilities

Introduction

Obesity is defined by the WHO as “abnormal or excessive fat accumulation that may impair health.” It is a step beyond overweight, although the two are often addressed together: In practice, overweight and obesity are often defined by reference to body mass index (BMI), which is the weight of a person in kilograms, divided by the square of their height in meters. A BMI of over 25 is considered overweight, while a BMI over 30 is obese. As a measure of obesity, however, BMI has its critics, for reasons such as the fact that it does not distinguish between lean mass and fat mass and that it may not accurately account for the relevance of height differences.

The WHO estimates that obesity has nearly doubled worldwide since 1980; in 2008, 35 % of adults were estimated to be overweight and 11 % were obese. This problem has been particularly acute in the Western world: In the United States, over one third of adults are obese, while across the European Union, the figure varies between less than one tenth and almost a quarter. Childhood obesity rates are equally worrying: In Europe, approximately one fifth of children and adolescents are overweight; one third of these are obese. In the United States, roughly 17 % of children and adolescents are obese.

Obesity is regarded as both an individual and social problem because it is associated with a number of health risks, such as diabetes, high blood pressure, heart disease, and some cancers. It gives rise to a number of ethical issues including responsibility for food choices, the role of the



food industry, and public health advice. Obesity in children adds an extra dimension to the ethical issues. These include advertising to children but also intergenerational justice, in so far as concerns have been expressed that life expectancy may decline as a result of changes in the incidence of obesity. In relation to this group, however, it is arguably the case, more so than with other social groups, that the class of people buying and preparing food is not identical with those consuming it, making the identification of responsibilities, especially parental responsibilities, more complicated.

The range of courses of action available to counter obesity gives rise to ethical issues specific to each one: from attempts to “nudge” people into making particular choices, regulation of advertising, the role of the diet industry, functional foods, to gastric surgery as arguably the most extreme intervention. Celebrities increasingly are drawn upon to endorse particular courses of action, as in other sectors of the market. In addition to specific issues, however, some of which raise concerns about the extent of coercion involved, there are generic ones concerning stigmatization and discrimination.

Ten Have et al. (2011) have set out some of the ethical dilemmas associated with obesity interventions:

effects on physical health are uncertain or unfavourable; there are negative psychosocial consequences including uncertainty, fears and concerns, blaming and stigmatization and unjust discrimination; inequalities are aggravated; inadequate information is distributed; the social and cultural value of eating is disregarded; people’s privacy is disrespected; the complexity of responsibilities regarding overweight is disregarded; and interventions infringe upon personal freedom regarding lifestyle choices and raising children, regarding freedom of private enterprise or regarding policy choices by schools and other organizations.

Value Judgments

One issue which needs to be addressed at the outset is the current prevalence of negative value judgments made about obesity. It cannot

be taken for granted that the judgment that obesity is a bad thing is noncontroversial; widespread prejudice against obesity may be a result of social norms or aesthetic factors. It is well known that at different times and in different societies, a high weight has been or is a sign of social success or status. In the present context in Western societies, however, the opposite tends to be the case, with celebrity role models (with a few exceptions) being if anything underweight. This in itself gives rise to ethical issues, leading to concerns about young people developing eating disorders in the desire to be thin (see “► [Body Image, Gender, and Food](#)”).

There are thus costs associated with weight at either end of the spectrum, with lack of clarity about what is a desirable “norm” in the light of social context. At the very least, however, many people who are obese do not want to be (whether they would were it more socially acceptable is perhaps a question to be explored elsewhere).

Causes of Obesity

From one point of view, the cause of obesity appears simple: Where the intake of energy is not balanced by the expenditure of energy, over time this will result in excess weight and eventually obesity. This view appears to have been established firmly by the nineteenth century (Bray 1990). The picture is more complicated than that however: Causal factors involved in producing this imbalance are multiple and varied. The influence of different factors is frequently disputed, but it is broadly accepted that obesity results from the complex interplay of genetic, behavioral, and environmental factors. Gene-environment interactions, in particular, are believed to play an important part in explaining obesity, and much research is ongoing in this field at the time of writing.

Beyond consideration of the causes of obesity in general, special attention has recently been focused on trying to explain the rapid rise in obesity rates across the world in the past 30 years. Although there is evidence to suggest that some people do have genetic factors that make it more

difficult for them to lose weight, the overall change at a population level has occurred too fast to be explained by genetics, so examination of this issue has focused on possible ties between social change, the environment (including the “obesogenic environment”) and human diet.

The “obesogenic environment” hypothesis points to a complex matrix of factors which combine to make it harder for individuals to avoid obesity. Essentially, in certain areas, fast food has become ubiquitous, while exercise has been eliminated, for example, by the use of mechanized transport. The related idea of “food deserts” suggests that it has become impossible for the inhabitants of certain (predominantly urban) areas to access healthy food (see “► [Food Deserts](#)”).

Some accounts have attempted to place the blame on specific foods or ingredients, such as high fructose corn syrup. Others point to contaminants or toxins as being to blame: BPA, found in plastic bottles, for example; PCBs; PFOA; and tributyltin as cited by Guthman (2012). On the other hand, Lakdawalla et al. (2005) argue that obesity is a result of economic progress, relating to both falling relative food prices and a shift away from manual labor.

Discussion of possible causal explanations of obesity is important, as the purported causes of obesity tend to play a dominant role in ethical discourse surrounding the topic. This of course has implications for the allocation of responsibility – not just causal responsibility or blame, but responsibility or duty to act, by reducing levels of obesity or ameliorating the associated problems.

There is clearly much work to be done, however, in picking apart the causal factors implicated in obesity, as emerging research in the field of epigenetics points to enduring, transgenerational obesogenic effects of certain environmental factors. This might indicate additional parental or at least maternal responsibilities.

Responsibilities

In parallel with the simplest causal explanation being an imbalance between energy intake and

energy expenditure, the default account of responsibility focuses on individual food choices. From this point of view, obesity is the result of freely made decisions by individuals (e.g., eating fast food instead of salad; driving instead of walking). It follows that the responsibility for dealing with the consequences of obesity should also rest with the individual: His or her food choices need to change (see “► [Ethical Assessment of Dieting, Weight Loss, and Weight Cycling](#)” and “► [Food and Choice](#)”).

There are at least two different types of problem with this kind of explanation: First, it ignores the *context* in which choices are made; second, it overlooks the *dimensions* of choice. Reflection on context shows the extent to which choices may be subject to external influences which cast doubt on the possibility of a “free” choice. Constraints range from availability of (varied) food, stress, sleep deprivation, time pressures for shopping and preparing, the costs of “healthy” choice, peer group pressure, and the influence of advertising.

Turning to the dimensions of the making of a choice itself, what is at issue here includes information and knowledge. Information about the constituents and calorific values of food is important. In spite of advances in food labeling, however, consumers know, from scandals such as that of horse meat passed off as beef, that what they read on a label is far from 100 % reliable. Information on calories can also be misleading in so far as labeling overlooks facts about fiber and the difference in energy values between raw and cooked foods. It has to be acknowledged that some information relevant to food choice is quite complicated, such as the difference between different types of fat and between omega 3 and omega 6, and this situation is not helped by regular changes in publicly available dietary advice about whether food x or y is good or bad for you (see “► [Food Labeling](#)”).

Making a choice is not simply a matter of having relevant information. Those who give prominence to the role of individual choice might see weakness of will as the main enemy of “healthy” informed choice. Information is also subject to interpretation, however, in the light of



a person's values and the type of person they see themselves as being. A choice to be a meat-eater, vegan, or vegetarian, for example, may be a significant aspect of a person's identity. Stereotypes such as "Real men don't eat quiche" may actually be internalized.

These aspects of an individual's relationship with food are found more broadly in different food cultures. The slow food movement, for example, is likely to affect individual food choices in a different way from a culture that views food as basically fuel rather than a social bonding mechanism.

The allocation of responsibility to individual choice has been identified by Tsjalling Swierstra (2011) as one of a number of competing discourses. He labels it the behavior discourse. By contrast, the environment discourse, related to the obesogenic environment hypothesis discussed above, proposes that the numerous choices which lead to obesity are not in fact freely made, but are decided for us in large measure by the environment. If fast-food restaurants are the only food vendors around, and there are no footpaths to walk on, then we are bound to adopt unhealthy behaviors. Responsibility, both causal and moral, is therefore shifted to institutions that have the power to change the structural determinants of adiposity.

Swierstra's final discourse, the body discourse, claims that obesity is primarily as a result of our body's natural functioning. This discourse separates out causal and moral responsibility by ruling out the existence of a blameworthy actor. Internal genetic factors and the working of one's metabolism may affect weight in ways that are beyond the individual's control.

Obesity: Proposals for Action

Some have drawn attention to how the lack of clarity in regard to the causal relationships surrounding obesity may allow relevant actors to avoid taking responsibility (Harris et al. 2009). It is common to describe causation in terms of a "chain" indicating that all that is needed to

solve the problem is to find the weakest link and allocate responsibility accordingly. The mesh of interrelated factors leading to obesity does not appear fit well into this trope, and waiting for it to be untangled may delay action longer than is acceptable.

Therefore, in addition to causal responsibility, it is important to consider what can be done about the problems brought about by obesity and which actors may have the ability to mitigate any harms arising (Holm 2007; Kersh et al. 2011).

Individual Responsibility Revisited

Many see individual choice as the target here, with proposals ranging from coercion to persuasion and empowerment. The most draconian measure may be use of the taxation system to direct choice. Coercive measures are also possible within a health-care setting, with denial of treatment unless weight is lost: Justification may be given in terms of the reduced chances of successful treatment in the absence of weight loss. The aim of "empowering" individuals to make healthy choices was exemplified in the UK Department of Health's White Paper *Choosing Health* (2004). This strategy depends on the view that individuals can and will make healthy choices if they are given appropriate information.

Taxes intended to reduce obesity may not only hit the poorest hardest but also have a side effect of increasing malnutrition. The work of Thaler and Sunstein has highlighted a number of problems with the individual responsibility paradigm. Mindful of the threat to personal autonomy of restricting choice, they propose a less intrusive method of regulatory involvement, relying on the "nudge" (Thaler and Sunstein 2008). Measures could include rearranging how options are displayed in food outlets and ensuring that people are given a minimum level of information (see "► [Grocery Store Design](#)").

These considerations raise the question of what the proper role of government is in this area. This is relevant not only to the issues around individual choice but also to effects on the potentially obesogenic environment. From a neoliberal perspective, the role of government in relation to food is simply to ensure food safety and to

facilitate the provision of information to individuals on which they can base their choices. In this regard, the regulations surrounding food tend to be different from those affecting drugs, where both safety and efficacy are an issue (although the dividing line between food and drugs is not completely clear-cut).

Regulation of safety has to have regard to particular subgroups of the population, e.g., children and pregnant women, and regulation of advertising to children might be regarded as an aspect of its safety remit, in so far as pushing “unhealthy” foods onto children might cause actual harm.

There are, of course, competing interpretations of what the proper role of government *should* be, from different philosophical viewpoints. In so far as government tries to affect food choice beyond ensuring safety, it might be regarded as unduly paternalistic. In contrast to the neoliberal vision, however, a position that has a concept of the common good to be pursued might argue that the role should encompass more than safety and the promotion of certain values, such as social justice. This might lead, for example, to the facilitation of certain lifestyle choices, including fairness regarding food styles (Korthals 2001).

At the time of writing, it seems that concerns about obesity are trumping other considerations, whether this is construed as part of a broadly understood safety remit or through consideration of social and economic costs. The scope for action of government is also, however, affected by competing economic and political interests, such as the protection of the food industry as a key player in the economy of a modern society.

The Food Industry

The food industry plays an important role in relation to obesity. It has been a leading driver in the changing food environment, from the increasing prevalence of fast food and ready meals to the use of pesticides. Despite the nominal freedom of individuals in deciding what they eat, the food industry plays a crucial role in creating the structure within which individuals must make their choices.

Food Marketing

The role played by marketing in setting the tone for what people eat may be a particularly relevant justification for imposing some level of responsibility on this sector. Despite the ideal of perfectly rational consumers making informed choices, consumers are often swayed by what may be perceived as irrelevant factors. Marketing has the power to affect consumer choice not only by providing or withholding information about products but by how the information is packaged and at which consumers the information is targeted. The role of food marketing in defining consumer perceptions of food “healthiness” is also important to consider. What once may have been purely within the realm of public health authorities has been encroached upon gradually by ubiquitous marketing campaigns emphasizing the benefits of one food or another.

In particular, the way that food is marketed to groups who may be particularly susceptible to manipulation, such as children and those in developing countries, may raise some concerns (Harris et al. 2009; Witkowski 2007). The makers of fast food and sweetened drinks have been especially astute in targeting these two groups.

In some countries, regulators have taken action to limit advertising aimed at children for these reasons. Advertisers may be precluded from advertising certain classes of food completely or at certain times of day. The possibility of such regulations being introduced may act to bring about more responsible behavior by the food industry (see “► [School Lunch and Gender](#)”).

Corporate Social Responsibility

Corporate social responsibility (CSR) has emerged in the last 60 years as an acknowledgement of the impact of corporations on society and the potential for corporations to make their impact positive. In the food industry, CSR has come to the fore as issues such as the use of genetically modified crops, animal welfare, and the treatment of workers have been prominent topics of debate (Maloni and Brown 2006).

In the wake of a series of popular critiques of the role of the food industry in relation to obesity,



some firms have sought to improve their image by taking some steps to address it. This has included not only promoting the health benefits of their products but also trying to make their products healthier, for example, through the increasing use of whole grains, and to encourage individuals to make healthy choices by providing information and promoting physical activity or voluntarily assuming some responsibility by undertaking to decrease obesity rates (Herrick 2009).

There are numerous examples of this in action, from recent moves to project a healthier image and to be seen to empower consumers by companies such as Coca-Cola and McDonalds, to the sponsorship of physical activities for children or the voluntary reduction in fat levels in some products.

There has, however, been some criticism of these strategies. It is unclear what merit there is in some of the health claims made by companies, especially where these claims stem from only one aspect of the product. Encouraging individuals to make healthy choices may be seen as merely trying to shift blame for obesity away from food and the food industry (Herrick 2009) (see “► [Corporate Social Responsibility and Food](#)”).

Functional Foods

When changing the products is seen as an alternative to manipulating choice, this might be regarded as a “technical fix,” looking for opportunities for products that counteract obesity because of their effects on the body, such as “functional foods” (Choudhary and Grover 2012). These are not the same as “miracle diet” products. The constant search for the quick-result diet has been a phenomenon of long standing, but the consensus of opinion is that long-term lifestyle change is necessary to counteract obesity. Manufacturers of functional foods focus on ingredients which are part of a normal healthy diet (such as chillies) but around which products can be made which may speed up metabolism or reduce hunger (Chadwick et al. 2003). This might be seen as less of a *responsibility* for the food industry, rather more of a marketing *opportunity* (see “► [Functional Foods](#)”).

Epigenetics

Beyond the possibility of a technical fix, recent advances in our understanding of epigenetics have suggested that science may have important new insights to offer in this field. Although genetics does not have the complete answer to why some people become fat and others do not, there are genetic factors implicated in obesity, and these may be triggered, or not, by environmental factors. Epigenetics examines factors over and above the genome that may affect gene expression and understands the influence of environment to be far beyond the obesogenic environment hypothesis. Significant factors may relate even to maternal behavior prenatally. It remains to be seen what the implications of this rapidly developing science will be. It has the potential for opening up a new area for thinking about responsibility in relation to obesity, if parents are considered responsible for behavior during pregnancy and early childhood which might affect the propensity to obesity in their children (Chadwick and O'Connor 2013).

Parental Responsibility

The question of parental responsibility for obesity in relation to their children is multifaceted, and it is not possible to explore every aspect of it here. Parents have a significant influence over not only what their children eat and what physical activity they are involved in while they are young (and the degree of influence will vary greatly with the age of the children), but over the attitudes of their children towards food and exercise later in life (Holm 2008; Perryman 2011). Because of this, it may be considered appropriate to impose some responsibility for childhood obesity on parents.

It is important to remember, however, not to overstate this. While women during pregnancy are already expected to limit consumption of alcohol, for example, in general obesity fits uncomfortably into the broader scheme of parental responsibility. Generally, parents are allowed a high degree of freedom in choosing how to bring up their children (although parenting decisions are often – at least morally if not legally – required to be made in the best interests of the child).

It may only be thought permissible to impose particular duties on parents where there is a clear, objective risk of harm to children. Given the uncertain and primarily distant nature of the health risks attached to obesity, and the subjective nature of some value judgments surrounding obesity, it may be inconsistent with the freedom of conscience allowed to parents to curtail their range of choices.

Summary

Obesity is a complex moral issue: It is clear that there are health problems associated with it, and yet much of what people think about obesity is clearly motivated by subjective aesthetics or prejudice. It is also apparent that although we can identify a number of factors which are causally linked to obesity, food intake, exercise, genetics, and environment, how these factors work together has yet to be established.

Against this background, a number of debates have developed: whether obesity should be treated as an individual failing, as a result of environmental factors or genetically predetermined; whether responsibility for dealing with the "obesity epidemic" should fall to individuals, governments, or the food industry; and even about whether obesity should be seen in a positive, negative, or neutral light.

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Occupational Risks in Agriculture

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Synonyms

Accidents in agriculture; Health and safety; Workplace risks

Introduction

In literature and the visual arts, the very notion of an idyll means a depiction of rural life, describing life and work on a farm as healthy, gratifying, and in harmony with nature. Children's books, in particular, abound with rustic idylls where children play freely, undisturbed by the dangers of modern life.

Real farmwork was, and still is, very dissimilar from these representations. Agriculture is more dangerous than most other occupations. Old hazards like sickles and bolting horses may have become less common, but they have been replaced by new ones such as pesticides and tractor rollovers (ILO 2010).

A third of the world's labor force works in agriculture. In the richer countries, only around 2–3 % of the workforce work on farms, most of them on highly mechanized farms. In poor countries, more than half of the workforce work in agriculture. About 40 % of the world's farmers and agricultural workers are women (ILO 2012, p. 99). Child labor is more common in agriculture than in any other economic sector. One hundred and thirty million children, about 60 % of the world's child laborers, work in agriculture (Diallo et al. 2010, p. 13).

Agriculture is a particularly hazardous occupation in both industrialized and developing countries. In countries with well-functioning statistics, the death rate due to occupational accidents in agriculture is usually at least twice as high as the national average, and agriculture is one of the sectors with the highest death toll.

According to ILO estimates, at least 170,000 agricultural workers are killed in workplace accidents each year (ILO 2009). This figure is uncertain since reporting of accidents and occupational disease in agriculture is often highly incomplete, in particular in third world countries.

Accidents

Some of the causes of agricultural accidents have been with us since ancient times. *Domestic animals* can kick, bite, knock down or step on a worker, or press her against a wall or a fence, sometimes with fatal outcome. The risk is enhanced when the animal is agitated or panicking and when the worker and the animal are inside the same tight workspace such as a small stall or pen. Humane treatment of animals reduces the risk of dangerous behaviors. Barns and collection chutes can be constructed to separate workers from animals. Milking, immunization, trimming of hooves, and other operations that require close contact with the animal can be performed in containment facilities that protect the worker against kicking and biting.

In tropical and subtropical areas, *wild animals* are major causes of occupational accidents. Large mammals that look for food in the farmland can be dangerous, in particular when one tries to drive them away. In Africa, the hippopotamus is particularly dangerous for farmworkers. Snakebites are also common in tropical areas.

In mechanized agriculture, *tractors* cause a large number of injuries. In many industrialized countries, a majority of the fatalities in agriculture are due to tractor accidents. Rollover accidents are the most common type. It is also common for workers standing behind a tractor to be run over when it is reversed. The risk of accidents can be reduced by educating drivers, keeping bystanders and in particular children away, and avoiding driving on slopes. Safety equipment such as seat belts and protective frames (roll over protection structures, ROPS) substantially decrease the risk for drivers.

A wide variety of *other machines* contribute to making farming a dangerous occupation.

Machines containing accessible moving parts and cutting edges can cause cuts, fractures, amputations, and crushings with disabling or fatal consequences. Harvesters are among the most dangerous of these machines. Many accidents occur when clearing blockages or performing maintenance or repairs. In the third world, *hand tools* such as machetes used for cutting sugar canes cause many serious cutting wounds.

Fall accidents are common on farms, resulting for instance from poorly maintained stairs and ladders and from work on roofs, silos, or the top of vehicles without protective equipment. *Traffic accidents* are common when rural workers travel between fields for instance on trucks. *Electric accidents* and *fires* are other causes of accidents in agriculture.

Occupational Diseases

Diseases caused by biological material have a long history in agricultural production. The inhalation of *dusts from grains and other plant material* can give rise to respiratory diseases. The smallest particles (less than .005 mm) go unnoticed since they cause no immediate irritation but they are the most dangerous ones since they penetrate into the alveoli, the small sacs that are the terminal ends of the branching tree of pulmonary ducts. Many types of bioorganic dust can give rise to inflammatory diseases of the lung. Probably the most common of these are farmer's lung (moldy hay) and byssinosis (cotton dust). Others are bagassosis (moldy molasses), coffee worker's lung (coffee bean dust), malt worker's lung (moldy barley), tobacco worker's lung (moldy tobacco), and winegrower's lung (moldy grapes). The so-called hay fever is an allergic reaction to grass pollens that tend to be prevalent at the time when hay is being harvested. The risk of these diseases can be substantially decreased if adequate measures are taken to decrease exposure.

Gases formed during crop storage can also be toxic. Silo-filler's disease is a dangerous acute condition resulting from inhalation of nitrogen dioxide formed from fresh silage. Work inside a grain storage facility is also associated with

other dangers such as grain dust explosions and suffocation due to lack of oxygen or engulfment in avalanching grain. Grain storage bins should never be entered without careful protective measures including a body harness with a lifeline or a boatswain's chair.

Dust from domestic animals, usually from dander (particles of shed skin and fur), can give rise to allergic rhinitis. Dust from droppings and feathers of birds give rise to bird fancier's lung (bird-breeder's lung), a serious and potentially fatal form of allergic lung disease.

In large-scale, high-density animal production, workers can be exposed to high concentrations of *gases from animals*, arising from flatulence and from the decomposition of urine and fecal matter. Important such gases are methane, ammonia, and hydrogen sulfide. Ammonia and hydrogen sulfide both give rise to irritation of the eyes and nose. Hydrogen sulfide is a treacherous gas since its smell of rotten egg disappears at the higher concentrations that are acutely fatal. Hydrogen sulfide from slurry pits has caused many deaths.

In livestock production, farmworkers can be affected by various *zoonoses*, i.e., infections transmittable from animals to humans. Some of the most well known of these are summarized in Table 1.

Farmworkers can also contract *zoonoses from nondomestic animals*. Contacts with snail-infested water, for instance, in rice fields, can give rise to schistosomiasis (bilharzia), a disease caused by a parasitic worm carried by snails. Barefoot walking and lack of sanitation contribute to the risk of hookworm infection that is a major public health problem in particular in Africa and Asia. Bites and stings from spiders such as ticks, scorpions, and in particular insects such as mosquitoes, flies, and fleas are other major causes of disease.

Malaria kills more than 600,000 persons each year, about 97 % of them in Africa (WHO 2011). The impacts of agricultural practices on malaria incidence are complex. In some areas, increased irrigation has created stagnant waters that augment mosquito breeding and therefore increase the risk of malaria. On the other hand, higher



Occupational Risks in Agriculture, Table 1 Some major zoonoses, i.e., infections that are transmitted from animals to humans

Anthrax	A bacterial disease that spreads by spores. Cattle and other herbivorous mammals can contract it through ingestion of the spores while grazing. It spreads to humans through contact with diseased animals or consumption of flesh from them. The disease has high mortality
Bovine tuberculosis	A form of tuberculosis that is usually transmitted through unpasteurized milk or through contact with infected animals. In areas where milk is not pasteurized, it is a common source of tuberculosis in humans
Brucellosis	A bacterial fever disease that is transmitted from cattle through unpasteurized milk or infected tissues such as placentas
Campylobacteriosis	A bacterial disease that causes diarrhea and fever. It is usually transmitted through unpasteurized milk or contact with infected poultry or livestock
Cryptosporidiosis	A disease caused by a protozoon (single-celled organism) that gives rise to diarrhea in humans. It can be contracted through feces from infected cattle or water that has been contaminated with such feces
Leptospirosis	A bacterial disease with symptoms such as fever and diarrhea. It is commonly transmitted to humans from animal urine via contaminated water
Psittacosis (parrot fever)	A form of bacterial pneumonia that is spread by droppings from parrots but also from other birds such as hen and duck
Q fever	A bacterial disease that is transferred to humans from milk, urine, feces, amniotic fluid, or placenta from infected cattle and other domestic animals
Rabies	A life-threatening viral brain infection that is almost always contracted through bites from infected dogs. It kills more about 55,000 persons every year, 95 % of them in Africa and Asia. Preventive vaccinations of both dogs and humans are efficient means to prevent the disease

prevalence of cattle in developing areas seems to decrease the risk of malaria since the mosquitoes tend to feed on blood from cattle rather than humans.

Most zoonoses can be efficiently controlled with proper preventive measures such as animal vaccination, human vaccination, sanitation, and safe disposal of animal waste. Due to the lack of such measures, zoonoses are a much heavier burden on farmworkers in developing than in industrialized countries.

Pesticides are by far the most serious toxic risks in agriculture. Pesticides are divided into groups according to their targets. The most important of these groups are herbicides (against unwanted plants), insecticides (against unwanted insects), fungicides (against unwanted fungi), and rodenticides (against unwanted rodents). As a rough rule of thumb, insecticides and rodenticides tend to be more dangerous to humans than most herbicides and fungicides. The majority of acute pesticide poisonings involve insecticides. Due to the prevalence of pest insects in tropical and subtropical climates, insecticides have a larger role in

third world countries than in industrial ones where their use is also better controlled.

For most pesticides the dominant route of entry into the body is skin penetration. Mixing and loading of pesticides often leads to massive exposure of the hands and arms. Manual spraying that is standard in third world countries also leads to substantial skin exposure, in particular as it is often performed with leaking and otherwise deficient equipment. The legs of farmworkers are often exposed to pesticides from recently treated plant surfaces.

The other two routes of entry are inhalation and ingestion. Inhalation is often substantial for workers performing hand spraying. In addition, wind drift leads to inhalation by people in the vicinity, including children. Ingestion is often the result of insufficient hygiene, such as when food is eaten or cigarettes smoked with contaminated hands.

The symptoms of poisoning are different for different pesticides. Common acute symptoms are headache, skin irritation, and flu-like respiratory symptoms. High doses can be fatal. Some

pesticides give rise to chronic poisoning, and some have been shown to be associated with cancer.

Due to lack of reporting routines in the most affected countries, the number of pesticide poisonings is extremely difficult to estimate (Litchfield 2005). The International Labour Organization (ILO) and the World Health Organization have made quite different estimates. The ILO estimates that about 17,000 (unintentional) fatal poisonings with pesticides take place each year, comprising 10 % of the fatalities in the agricultural sector. The WHO estimates around 40,000 such fatalities annually (Rice 2000).

In addition to their implication in occupational fatalities, pesticides are also death-bringing in another way, namely, through suicides. Pesticides are the dominant means of suicide in many third world countries, and globally they are the most common suicide method. It has been estimated that around 300,000 suicides with pesticides are committed every year (Gunnell et al. 2007). Most of these suicides have a strong impulsive component, and there are strong reasons to believe that reduced access to highly lethal pesticides would lead to a substantial decrease in the number of suicides (Eddleston et al. 2006). (It has been hypothesized that by causing depression, occupational poisoning with organophosphate pesticides may increase the risk of suicides. That has not been scientifically substantiated.)

Agricultural workers are also affected by several *climate-related diseases*. In particular in tropical areas, the combination of high temperatures, high ambient humidity, and hard physical labor can lead to heat stress and heat stroke. Lack of drinking water further increases the risk of heat stress. In the same areas, exposure to ultraviolet sunlight increases the risk of skin cancer and cataracts.

Musculoskeletal disorders such as back pain and arthritis are common among farmworkers and may be associated with hard physical labor. Prolonged exposure to *vibrations* from tractors and other machinery gives rise to the hand-arm vibration syndrome that is characterized by numbness and temporary loss of feeling in the

fingers, in serious cases loss of dexterity and strength. Exposure to vibration is also associated with increased risk of spinal disk herniation and myocardial infarction.

Noise from animals, in particular, in swine confinement buildings, can reach levels that give rise to hearing loss. The same applies to noise from tractors and machines such as chain-saws and grain dryers.

Ethical Issues and Challenges

Agriculture differs from other sectors of the labor market in ways that have ethical implications for health and safety work. In this section some of these implications will be summarized in the form of five challenges for agricultural health and safety.

To a large extent, farmwork is performed by self-employed farmers. In many countries farmers are among the most underprivileged laborers, but they seldom form organizations like trade unions or take part in coordinated, collective activities. When an industrial worker is exposed to unacceptable working conditions, there is a factory owner who can be required to pay for the necessary improvements. When a self-employed farmer is subject to similar conditions, there is no one else than the farmer who is expected to pay, and often his or her means do not suffice to cover the costs.

If the government or an independent organization demands improvements in the working conditions of an industrial worker, then these demands cannot be accused of being paternalistic. The improvements will have to be made by the employer, who is then required to change the working conditions of others, not himself. In contrast, demands to improve the working conditions on small farms can be labeled as paternalistic; such demands interfere in the farmer's decisions on his own working conditions and they do so for his own good.

The difference is not quite as sharp as it was now presented. There are cases of paternalism in health and safety work in large industries. The best example of this is demands that workers use



personal protective equipment; it is primarily for their own sake that government agencies and – often – the employer require them to do so. There are also cases when health and safety measures by a self-employed farmer have a justification that goes beyond his or her own interests. One example is vaccination of cattle against zoonoses. By vaccinating his or her own herd, the farmer contributes to decreasing the risk for colleagues to be affected by the diseases in question. But in spite of these exceptions, health and safety work encounters the problem of paternalism much more often in agriculture than in other sectors. *The first challenge is therefore to find ways to prevent accidents and occupational diseases no less efficiently in agriculture than in other sectors, while respecting the special situation of self-employed farmers.*

Throughout the world, agriculture still tends to be a family business to a much larger extent than other ways to make a living. The limit between a private household and the same family's farm is less clear than the corresponding limit in other small companies. As a consequence the distinction between family relations and labor relations is similarly unclear. This may seem idyllic, but it means, for instance, that if the wife of a traditional farmer has a subjugated role, then she is dominated by the same man both at work and at home – doubly oppressed but in a single relation.

Probably largely because of the family-based organization, the role of women as agricultural workers has often been neglected even by health and safety authorities. Tools, machines, workstations, and equipment have been constructed to suit the male worker. It has not been a priority to make working conditions compatible with pregnancy and breastfeeding. Day-care facilities are seldom available, in spite of being the only practicable way to keep children away from the dangerous production areas where their mothers work. In summary, the traditional view of agriculture as a family business led by a man has made female farmworkers and their working conditions next to invisible. *The second challenge is to give the same weight to the interests of female and male farmworkers in spite of strongly*

entrenched traditions that keep women in a subordinate position.

Most farms are both a home and a workplace, with no clear line between the two functions. Therefore, children who grow up on farms grow up in a workplace. This has at least two important consequences. First, they are exposed to the dangers of the workplace. Kicking, biting, and bolting animals; infectious diseases spread by the same animals; insects spreading other diseases; reversing or overturning tractors, harvesters, and other cutting machines; dangerous hand tools; slurry pits with their dangerous gases and the risk of drowning; equally perilous grain storage bins; and not least pesticides – all these workplace dangers are also dangers to the children who grow up on farms. From the viewpoint of preventive health, it is regrettable that some of the most accident-ridden workplaces, namely, farms, are also the only workplaces that are the homes of hundreds of millions of children.

The other consequence is that child labor is more common in agriculture than in any other occupation. In many third world countries, children drop out of school or never turn up there because their work is needed in the fields. Even in industrial countries where child work on industrial workplaces has been almost completely abolished, young children can be found working on family farms with dangerous machines and animals. In the United States, children as young as 4 or 5 have been found driving a tractor alone (Frank et al. 2004). Hundreds of thousands of the agricultural workers in the United States are immigrant children, some of them as young as 7 or 8 years old, who work under conditions similar to those found in the third world. Many of them work with sharp tools and dangerous machines. Green tobacco sickness, i.e., nicotine poisoning due to dermal absorption from tobacco plants, is particularly damaging to children's health, and the same applies to pesticide exposure (Human Rights Watch 2010). Due to idyllic misperceptions of farmwork, in the United States and elsewhere, the public tolerance of child work seems to be higher if it takes place in farms than in other sectors. *The third challenge is to protect children from work and workplace dangers in*

agriculture in spite of the fact that they live on agricultural workplaces and are brought up in a tradition where child labor is considered normal.

A large proportion of the farmworkers who are not self-employed are instead hired on a temporary or seasonal basis. Workers with uncertain employment tend to consider themselves not to be in a position to make demands or refuse dangerous work. They are also more seldom unionized than workers with permanent employment. This means that in many countries, most agricultural work is done by either self-employed or temporary workers, two groups that are mostly unorganized. In agriculture, trade unions have often failed to play the important role as promoters of workplace health and safety that they have in industrial workplaces.

In many countries, a large part of the agricultural workers are immigrants with less legal protection than citizens. The United States has been estimated to have between three and five million migrant farmworkers, about 80 % of whom have immigrant status. A typical attitude among them to unsatisfactory working conditions is that “nothing can be done about it” (Magaña and Hovey 2003). *The fourth challenge is to ensure that the health of migrant and temporary workers in agriculture is fully protected, in spite of their uncertain status that makes many of them unwilling to make demands or to have contact with authorities.*

Agricultural products are commonly used as textbook examples of the advantages of free trade. It does not seem rational for farmers in a subarctic climate to grow oranges in heated greenhouses when these fruits can instead be imported from countries where they grow in the fields. But trade in agricultural products is far from free. Current trade agreements tend to require openness in developing countries while at the same time institutionalizing the subsidies and protections that industrialized countries have created for their own agricultural sector (Gonzalez 2002). The demands of fairness combine with those of economic rationality to support the rectification of such asymmetries. On the other hand, it is not unproblematic to transfer

agricultural production from countries with acceptable working conditions to countries with dangerous and oppressive conditions. *The fifth challenge is to combine trade policies with health and safety policies in ways that are beneficial to the underprivileged farmers and farmworkers in developing countries.*

Summary

Both in industrialized and developing countries, agriculture is more dangerous than most other occupations. Accidents with animals, tools, and vehicles are common, and a wide variety of occupational diseases result from chemical and biological exposures. Pesticide poisonings are a particularly serious problem in many developing countries. Children are directly exposed to many of the hazards in agriculture, partly because they are used as workers, partly because they live on farms. Many farmworkers are either self-employed or migrant, two categories of workers that are seldom well organized and often have difficulties in getting heard. The health and safety of poor farmworkers and their families is a neglected problem in need of much more attention throughout the world.

Cross-References

- ▶ [Biosecurity and Food Systems](#)
- ▶ [Corporate Social Responsibility and Food](#)
- ▶ [Fair trade in Food and Agricultural Products](#)
- ▶ [Food and Class](#)
- ▶ [Restaurant Workers](#)

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Oxford Centre for Animal Ethics

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Introduction

The Oxford Centre for Animal Ethics (www.oxfordanimalethics.com), founded in 2006 by its director Professor Andrew Linzey, is an

independent Centre with the aim of pioneering ethical perspectives on animals through academic, research, teaching, and publication. The Centre is the world's first dedicated to pioneering ethical perspectives on animals. An independent “think tank” for the advancement of progressive thought about animals, the Centre has more than 100 advisers and 60 fellows drawn from a variety of academic disciplines throughout the world.

Aims and Vision

The Centre aims to put ethical concern for animals on the intellectual agenda and contribute to an enlightened public debate about animals. It believes that the rational case for animals is frequently understated within academia and misrepresented in the media. By creating a worldwide association of accomplished academics from all disciplines who want to pioneer ethical perspectives on animals, the Centre intends to create a new intellectual force – a select fellowship – able to make the ethical case for animals.

Philosophy

The Centre

- Is inspired by the work of ethicists and philosophers who have pioneered new perspectives on animals
- Is informed by scientific work indicating that animals are sentient and possess complex systems of awareness
- Seeks to relate these insights to how we treat animals today
- Questions the “old view” of animals as simply things, machines, tools, commodities, or resources, put here for our use
- Holds that all sentient beings have intrinsic value and should be treated with respect

All fellows are required to uphold the philosophy of the Centre. The Centre's *raison d'être* is that we cannot change the world for animals without changing our ideas about them, hence the Centre's strapline: “Helping people think differently

about animals.” The Centre’s view is that academics should help lead the way in furthering ethical attitudes and contributing to informed public debate. Consideration for appointment as a fellow is by invitation or nomination only. The Centre is opposed to violence and illegality and does not appoint fellows who advocate illegality or violence.

Achievements

Since its inception in 2006, the Centre has pioneered three major projects.

The first is the creation of the *Journal of Animal Ethics (JAE)*, the first named journal of its kind in the world. Published in partnership between the Centre and the University of Illinois Press, the *JAE* is an academic journal of progressive thought about animals. It is a focus of inquiry, argument, and exchange dedicated to exploring the moral dimension of our relations with animals, and its aims are to put animals on the intellectual agenda and to stimulate discussion within academic and professional institutions. The *JAE* is multidisciplinary in nature and international in scope, and peer-reviewed, covering both theoretical and applied aspects of animal ethics – of interest to academics from the humanities and the sciences, as well as professionals working in the field of animal protection. The *JAE* comprises full-length scholarly articles, “argument” pieces in which authors will advance a particular perspective (usually related to current affairs) or respond to a previous article, review or research report, as well as review articles and reviews. The editors are Professors Andrew Linzey and Priscilla N. Cohn, and Clair Linzey is the associate editor. Guidelines for authors and further details of the *JAE* are available here <http://www.press.uillinois.edu/journals/jane.html>.

The second is a book series on animal ethics in partnership with Palgrave Macmillan. The Palgrave Macmillan Series on Animal Ethics (PMSAE) explores the challenges that animal ethics poses, both conceptually and practically, to traditional understandings of human-animal relations. Specifically, the Series:

- Provides a range of key introductory and advanced texts that map out ethical positions on animals
- Publishes pioneering work written by new, as well as accomplished, scholars
- Produces texts from a variety of disciplines that are multidisciplinary in character or have multidisciplinary relevance

Already 12 volumes have appeared, including *An Introduction to Animals and the Law* (2010) by Joan E. Schaffner, *An Introduction to Animals and Political Theory* (2010) by Alasdair Cochrane, *Animals and Public Health* (2011) by Aysha Akhtar, *Animal Suffering: Philosophy and Culture* (2012) by Elisa Aaltola, and *Animal Cruelty, Antisocial Behaviour and Human Aggression* (2012) by Eleonora Gullone.

More information about the current books in the Series is available here <http://www.palgrave.com/products/SearchResults.aspx?s=PMAES&fid=1837>. The series editors are Professors Andrew Linzey and Priscilla Cohn.

The third is the establishment of an annual Oxford Summer School in Animal Ethics (OSSEA). Starting in 2014, the OSSEA will provide an annual international focus where scholars from around the world can meet, share ideas, and move the subject forward. It will be the first Oxford Summer School in animal ethics, indeed the first annual venture of its kind in any university in the world. Each year, a topic will be selected for consideration with the contributions forming a book collection and/or published as articles in the *JAE*.

The Director

The Revd Professor Andrew Linzey is a member of the Faculty of Theology in the University of Oxford and Honorary Research Fellow of St Stephen’s House, Oxford. He is also Honorary Professor at the University of Winchester and Special Professor at Saint Xavier University, Chicago. In addition, he is the first Professor of Animal Ethics at the Graduate Theological Foundation, Indiana.



Professor Linzey previously held the world's first academic post in Theology and Animals – at Mansfield College, Oxford (1992–2000), and subsequently at Blackfriars Hall, Oxford (2000–2006). In 2001, he was awarded a DD (Doctor of Divinity) degree by the Archbishop of Canterbury in recognition of his “unique and massive pioneering work at a scholarly level in the area of the theology of creation with particular reference to the rights and welfare of God’s sentient creatures.” This is the highest award that the Archbishop can bestow on a theologian and the first time it has been awarded for theological work on animals. Professor Linzey has defined the field of animal theology first with his book *Animal Rights: A Christian Assessment* in 1976, with his subsequent books *Christianity and the Rights of Animals* (SPCK and Crossroad 1987), *Animal Theology* (SCM Press and University of Illinois Press 1994), *Animal Gospel* (Hodder and Stoughton, and Westminster John Knox Press 1998), *Animal Rites* (SCM Press and Pilgrim Press 1999), and *Why Animal Suffering Matters* (Oxford University Press 2009). He is the foremost theologian on animals and Christianity.

The Deputy Director

Clair Linzey graduated first in her class with First Class Honors from the University of St Andrews, Scotland (2002–2006), with a Master of Arts in Theological Studies. She was awarded the Monrad Scholarship and William Honeymoon Gillespie Scholarship to study at Harvard Divinity School, where she gained her Masters in Theological Studies from Harvard University in 2008. While at Harvard Divinity School, Clair won a place on their International Summer Field Education Placement. She spent the summer in Nicaragua where she taught in a rural school and traveled the country learning about its history and the growth of liberation theology. This, combined with her lifelong commitment to animal protection, resulted in an interest in ecological and liberation theologies in South America. She is currently pursuing a PhD under Professor Mario Aguilar at the University of St Andrews on the

Ecological Theology of Leonardo Boff with special consideration of the place of animals.

The Associate Director

Professor Priscilla N. Cohn began teaching Philosophy at Bryn Mawr College where she gained her PhD on the work of Heidegger. She has taught philosophy for more than 35 years and was made full Professor in Philosophy at Pennsylvania State University in 1982 and subsequently Professor Emeritus at Abington College at Pennsylvania State University in 2001. She has pioneered courses in animal ethics and lectured on five continents.

She has published seven books, including *Contraception in Wildlife*, Book I., edited with E. D. Plotka and U. S. Seal, in 1996 and *Ethics and Wildlife* in 1999, both published by the Edwin Mellen Press. Her interest in wildlife is reflected in her work as the founder and director of PNC, Inc., a nonprofit animal rights foundation that organized the first international conference on contraception in wildlife in the USA and initiated and funded the first PZP fertility control study on white-tailed deer. She has been a board member of The Fund for Animals and Humane USA PAC.

Josep Ferrater Mora (1912–1991)

The Centre is dedicated to the memory of the celebrated Catalan philosopher Josep Ferrater Mora. His prodigious scholarship is widely acclaimed, and the Centre honors his name because of his outstanding contribution to humanitarian thought, particularly in the area of animal ethics. Praised as the most important Catalan philosopher since Raymond Lull in the thirteenth century, Josep Ferrater Mora, known in the Spanish-speaking world as José Ferrater Mora, is celebrated as the most profound and original Spanish thinker in the second half of the twentieth century.

Ferrater’s collection of essays entitled *Mariposas y supercuerdas: Diccionario para nuestro tiempo*, published posthumously in 1994

(*Butterflies and Superstrings: A Dictionary for Our Time*), comprises his articles condemning Spanish fiestas and bullfights. In his *La llamada "fiesta nacional"* (The So-Called "*National Fiesta*"), Ferrater rejects the three main claims used to defend bullfights: that they are spectacles, that they reveal a special relation between the matador and the bull, and that they are traditional. Writing at a time when there was little, or no, public opposition to fiestas and bullfights, Ferrater's article provoked widespread consternation in Spain.

Andrew Linzey and Clair Linzey

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growth, productivity, and health. This relates to a second permaculture principle, which is to observe and interact with the natural systems upon which a community depends for survival. By observing and interacting with systems, and especially food systems, permaculture design optimizes energy flow and designs for multifunction and for redundancies in food production systems. For example, a chicken provides multiple functions in a permaculture system: it provides nitrogen to the soil via manure; it provides eggs and eventually meat to humans; it provides insect control, thus helping eliminate the need for chemical-based pesticide inputs brought in from outside the system; it helps aerate roots via scratching; and it provides entertainment and natural beauty. With the use of a mobile chicken coop, a flock of chickens can quickly clear a field of weeds while also helping add nitrogen-rich manure to the soil. The field is then ready for polyculture planting, with each plant being part of a larger functional design. For example, plants are planted in “guilds,” so that they help provide synergistic support and nested function for one another. A blueberry bush might have nitrogen-fixing legumes planted under it, while beneficial flowers might be planted around it that can attract pollinating insects, and after they fall the leaves of the bush becomes part of a compost pile so that nutrients are able to be applied back into the system. Designing for redundancies means that along with chickens, a system may also include ducks, geese, or turkeys; and besides blueberries, a system may also contain bramble bushes or other fruit-bearing bushes. These two principles – observing and solving for pattern and system efficiencies and designing for function and redundancy – form the basis of permaculture design for any system and especially for agroecosystems that provide humans with food, fuel, and fiber.

Another core permaculture design principle is designing systems so they can catch and store energy. This may include using south-facing walls to capture radiant heat, using solar energy for power and to heat water, harvesting rain water, and building swales and hedgerows.

Another principle is based upon understanding a permaculture system as being a closed system, so that the goal is to produce no waste, especially toxic waste. In a closed system, the waste of one process becomes the energy to create another process. Compost is the ideal example of this aspect of permaculture design.

A further principle is to create edge and zone habitats where creativity can occur. Related to the principle of observing patterns in nature, permaculture design recognizes that zone/edge ecosystems in nature are the most creative; for example, coral reefs, estuaries, and wetlands contain very high levels of biodiversity and nutrient cycling. This relates to designing by zones, with zones closest to a house or common area containing flora and fauna that are used the most and that need the most attention, such as greens and culinary spices. The further out from this zone, typically called zone one, then the design changes, so the farthest zone, typically called zone five (most permaculture systems at the farm or community level contain five zones), contains sustainable timber production. The ideal goal of permaculture in terms of food production is to create edible forests that are populated by stone fruits and nut trees. These are long lasting and resilient and provide multiple functions. In tropical and subtropical areas, they also provide a year-round supply of calories, and they create habitat for other species. These and other principles help permaculture designers work towards achieving their goal, which is to capture sunlight energy and cycle this through closed-loop design systems based on nature’s patterns where the continual output is increased yield of food items and the sustainable use of natural capital.

Permaculture Ethics

While permaculture aims to design sustainable, resilient permanent cultures that are built upon perennial food production, there is also a very clear ethical element permeating permaculture. This ethic is based upon mixing insights gleaned from ecology, sustainability, sustainable

agriculture, environmental philosophy, traditional ecological knowledge, and Marxist political economy, with other intellectual tributaries adding to the overall ethical milieu of permaculture. The result of this ethical component is that many in the global permaculture movement are critical of industrial agriculture and the industrial economy and they are concerned with issues like excessive human population growth, species extinction and loss of biodiversity, and loss of indigenous cultures. The ethic is formulated as “Care for the Earth, Care for People, and Fair Share.” It may also be expressed as “Earth Care, People Care, Fair Share.” This ethical mantra recognizes that the earth is a finite system, and everything needed to survive is generated from sunlight entering our earth’s system. Thus, basing a permaculture design on these ethics works to ensure that the earth, from which everything else derives, is healthy, and at the same time, everyone in a community (from local to global) is cared for and has access to healthy food and adequate resources because they are equitably shared. By designing edible landscapes of polyculture guilds, multifunctional flora and fauna, and by farming and growing these in ways that minimize inputs of chemical fertilizers and pesticides and that instead promote system resilience, permaculture aims to generate food security.

Summary

Permaculture has gained in popularity in the last 10 years, with a proliferation of blogs, magazines, and workshops devoted to teaching permaculture design and principles. There has also been a proliferation of online websites devoted to permaculture and online videos that teach permaculture techniques. There is a loosely affiliated global permaculture network that hosts trainings in permaculture design and a residential training typically lasts 1–2 weeks. People pay to attend these trainings and receive a certification in permaculture design. They are then able to offer trainings to other people interested in learning about permaculture. Permaculture has guilds,

organizations, training centers, and networks in most every country. The Transition Town movement has grown out of permaculture, and there are many intentional-based communities and ecovillages based upon permaculture design and ethics, including Crystal Waters in Australia, which was founded by Mollison and Holmgren. The goal of all of these trainings, groups, teachers, and communities is to create resilient, permanent human cultures built upon the ethical foundations of permaculture.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Climate Change, Ethics, and Food Production](#)
- ▶ [Ecotopia](#)
- ▶ [Expertise in Agriculture: Scientific and Ethical Issues](#)
- ▶ [Food and Class](#)
- ▶ [Food Security](#)
- ▶ [Food Waste](#)
- ▶ [Multifunctional Agriculture](#)
- ▶ [Saving Seeds](#)

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Pest Control

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Synonyms

Agricultural pollution; Agrochemicals; Integrated pest management; Pesticides; Pests

Introduction

Pest control is the human-directed effort to reduce the population and impact of any species that harms agricultural production and food storage. A pest species can be arthropod (insect and mite), vertebrate (animal), plant (weed), or plant pathogen. A control strategy may be chemical, mechanical, or biological. A chemical control is the spraying of a pesticide. Mechanical control consists of some kind of physical disturbance of the pest species or its habitat (e.g., plowing weeds or removing all crop residues which provide refuge for insect pests). Biological control is the manipulation of beneficial organisms to reduce the impact of pest species. This entry chiefly addresses arthropod (insect and mite) pests in agriculture and insecticides and their alternatives in crop production.

Pest control emerged as an ethical issue with industrialization of agriculture and the associated development of pesticide technologies. Health and environmental problems were popularized by publication of Rachel Carson's (1962) *Silent Spring*, which takes its title from the collapse of bird populations due to pesticide poisoning. *Silent Spring* was the first major book to raise serious questions about the industrialization of agriculture. Carson's argument brought invisible agrochemicals into public view, documenting how pesticides used to produce food were also poisoning human health and the environment. There are thousands of pesticide products using many different biological mechanisms to kill or

control different kinds of pests, rendering categorical statements about the harm or safety of pesticides meaningless. Some classes of pesticides pose grave risks to human health, but those risks vary widely by pesticide, type and duration of exposure, and prior health condition. Pesticides contaminate surface and groundwaters. Organisms that depend upon freshwater ecosystems are particularly vulnerable to pesticide contamination: fish, mammals, and aquatic invertebrates.

Carson made normative claims upon society and its institutions on the basis of ecological principles, arguing that many pesticides should be banned and that ecologically rational alternatives to pesticides exist and should be used. She criticized the atomistic and anthropocentric worldview that gave rise to indiscriminate pesticide use, and its assumption that human beings could and should master nature. Her work led to the creation of the US Environmental Protection Agency and the banning of some classes of harmful pesticides. *Silent Spring* is the most influential book in this topical field and laid down fundamental ethical arguments in pest control that continue to be debated today.

Pesticides are powerful technologies, yet they are very simple to use. The propensity of pesticides to cause undesired negative consequences on people and the environment has made them the most controversial agricultural technology – until transgenic crops were developed. Pesticides persist as an ethical problem because they are an economically rational but ecologically irrational technology, with direct economic benefits accrued by the private user yet many diffuse negative impacts on human health and public goods that are difficult to economically quantify. Their continued use reflects the broader pattern of utilitarian thinking in industrial agriculture (Thompson 1995). This ethical problem connects activities in fields, factories, homes, and government.

Scientists have demonstrated that ecologically informed alternatives exist or could be developed to take the place of pesticides; however, these require additional labor to assess the actual threat posed by pests. Although slow to be realized and

fitful, some progress in the voluntary reduction of harmful pesticides has been made, from the development of less hazardous chemicals to the greater use of integrated pest management strategies (see below). Were the full range of off-site negative impacts of pesticides charged to farmers, their economic calculus would shift and more reductions in use could be achieved. However, the use of pesticides in aggregate does reduce the cost of food to consumers. This essay begins with an overview of pests and the pesticide complex, followed by discussions of the human health and environmental impacts of pesticides. Ecological and political controversies surrounding pesticides are then presented, followed by a discussion of more sustainable alternatives.

Pests and Pesticides in Agriculture

A tiny fraction of the world's arthropod, plant, and plant pathogen species damage and destroy agricultural crops, although estimating the economic cost of pests is notoriously difficult. Worldwide, approximately three billion kilograms of pesticides are applied annually, worth US \$40 billion. Data on US pesticide use and costs is strongest and illustrates the economic calculus. Roughly one sixth of the global total is applied in the USA (Pimentel 2005). The majority of US pesticides are herbicides used to control weeds in annual crops, but most insecticides are applied to horticultural and perennial crops. There is roughly a four-to-one economic return to the agricultural producer on pesticide costs. Despite significant pesticide use, US agriculture loses up to 37 % of its yield due to pests, roughly a third attributable to arthropod, plant, and plant pathogens (Pimentel 2005). Many of these pests are indigenous to the region of a crop's center of evolutionary origin and have found their way to new crop production regions. Other pest species have moved over from related host plants to attack introduced agricultural crops.

The global pesticide complex consists of all aspects of pesticides' lifecycles, from conception to human and environmental fate (Galt 2008). This complex is extraordinarily complicated,

and data to accurately characterize it is thin and uneven. Across the developing world, data is scarce if it exists at all. A tiny fraction of applied pesticides makes physical contact with intended target pests. Research has found that between 0.001 % and 0.3 % of the amount sprayed reaches pests (Pimentel 1995). The human and environmental fate of the other 99 + % of pesticides dominates the ethical debates about pest control. Pesticides break down into their chemical components in the environment and thus become less hazardous. Pesticides developed in the post-World War II era were highly persistent, causing environmental harm over years or decades. When these were banned by governments, some of the pesticides that took their place were more acutely hazardous, but much less persistent. Over the past generation in the developed world, new pesticides have been developed that are less hazardous and affect a smaller subset of insects. Some progress has been made in developing alternative delivery technologies, but these have generally been in a few high value crops.

Human Health Impacts

Ethical consequences of pesticide use may be roughly divided into human and environmental impacts. Some social groups are at much greater risk of exposure to pesticides and their negative effects than others. Those most at risk are those who handle and apply pesticides regularly, followed by farmers and farmworkers, their families, rural communities, and consumers. Estimates of pesticide poisonings range between one and five million every year worldwide (Harrison 2011). Those who mix, handle, and apply are routinely exposed to hazardous materials. Many farmworkers who prepare and apply pesticides are unable to understand the full risks of handling or mishandling pesticides (Wright 1990). Protective gear is mandated by government regulation in industrialized countries, but in the developing world, many pesticide applicators do not use this. Farmers and farmworkers who do not apply pesticides may be exposed to them by drift or direct contact on crops.

Government regulation in industrialized countries restricts the access of workers to recently sprayed fields until they are assumed to have broken down chemically.

Families of farmworkers are exposed when their parents return home with clothes contaminated by chemical residues. Children's health is more vulnerable to pesticides due to their biological development processes. Rural communities are disproportionately exposed to pesticides due to their proximity to farms. Pesticide residues have been found on some fresh produce, even though this is regulated. In developed countries pesticide residues in produce are generally very low and generally considered to pose trivial health threats, although studies have shown that residue testing of imported produce may be inadequate (Galt 2009). Activist critics of pesticides have appealed to consumer anxieties about pesticide residue.

The global pesticide complex is now highly differentiated, reflecting the broad trends in economic globalization (Galt 2008). Industrialized countries began regulating, restricting, and banning pesticides in the 1970s; however, many of the pesticide-manufacturing companies operate in many countries. After they were banned in Europe and North America, hazardous pesticides continued to be manufactured there, but were exported to developing world farmers, where regulations were weak or nonexistent. Some of these pesticides were subsequently found on produce imported back to countries where they were banned, a phenomenon popularized as the "Circle of Poison" (Weir and Schapiro 1981). This popular conceptualization has persisted, despite scholarly criticism of it as overly simplistic and inaccurate (Galt 2008). Wright (1990) demonstrated that public concern about pesticide residues prompted growers in Mexico to replace persistent pesticides with acutely toxic chemicals, decreasing the risk of pesticides making their way into the USA on food, but increasing the health risks to farmworkers. Thus, consumer concern about pesticides had the perverse effect of exposing politically vulnerable farmworkers to more dangerous farming practices. Wright's work illustrates the critical

dynamic of power and knowledge in efforts to reduce pesticide impacts. Subsequent pesticide manufacturing has shifted to the developing world, and a divergence of pesticide use depending upon whether the product will be exported for the regulated international market, or marketed domestically with little if any regulation (Galt 2009).

Pesticide drift is the airborne movement of pesticides into residential areas. Drift is invisible, often odorless, and ephemeral (Harrison 2011). It can result in severe injury or even death. The normal application of pesticides routinely results in drift that may travel meters or many kilometers and thus contact human beings, other living organisms, other crops, soil, or water. Pesticides may be carried far by winds or in fog. Drift incidents are characterized by many pesticide companies and regulatory agencies as "accidents," suggesting that they could not be anticipated and no one is responsible for them. Critics describe drift as routine, an anticipatable consequence of pesticide use, and accuse regulatory agencies of disregarding patterns of negative health consequences on workers and communities. Poor, rural communities are at the greatest risk of pesticide drift, rendering this an environmental justice issue. Anti-drift activism appears to be on the rise (Harrison 2011).

Contact with some classes of pesticides poses dangers to human health. Some pesticides can cause direct injury (e.g., harm to lungs or skin), systemic health problems (e.g., harm to endocrine, or immune systems), cancer, or in some cases, death. These symptoms may be immediate or slow to develop. Mothers exposed to low doses of some pesticides can pass chemicals to children in utero and thus cause substantial harm to the child's neurological system, with lifelong health implications. There are substantial epistemological challenges to proving scientifically that a specific pesticide exposure event (whether in the field, from drift, or residue on produce) resulted in a human health consequence. Toxicological investigations of pesticides are frustrated by the diversity of biological mechanisms of different classes of pesticides, the different means and duration of exposure, the accumulation of

harmful chemicals from many sources over a lifetime, the complexity of human bodily responses to synthetic chemicals, and the interaction of all of these factors.

The Ecological Dimension

Pest control was revolutionized by the discovery and use of DDT, a synthetic compound that became widely used during World War II (Perkins 1982). Prior to DDT, insecticides had been less effective and were costly relative to the control they provided. DDT is a broad spectrum contact insecticide, meaning that it kills most kinds of insects upon exposure, often immediately. It was initially believed to be safe to use on human beings and provided substantial benefits during the war by killing lice on human refugees and mosquitos bearing diseases, especially malaria. The discovery of DDT launched the production of a class of insecticides with similar attributes that became widely used for decades. DDT was also used in mass outdoor spraying campaigns to control mosquitos in many countries.

The rapid adoption of these insecticides in the postwar years profoundly shaped the pest control practices, the farming practices more generally, the science of entomology, and the agrochemical industry (Perkins 1982). Older, less effective and more harmful pesticides were virtually abandoned. Research into and practice of mechanical biological control entered a period of decline. Farmers who quickly adopted these techniques gained economic advantage over their neighbors. Insecticides dominated research in entomology, and fueled a dramatic expansion of the farm chemical input industry. The economic advantage of these insecticides substantially accounts for this, but persistent pesticide use also reflects a broader social attitude of faith in technological progress that discourages critical questions about undesirable consequences (Perkins 1982).

Carson brought to public attention the ecological principles that made indiscriminate use of insecticides self-defeating. The DDT family of insecticides initially killed all insects, including

natural enemies (beneficial insects such as predators and parasitoids that would naturally suppress pests). Their lethal action was generally immediate and impressive to observe. However, populations of plant-eating insects generally recover more quickly from insecticide treatment than beneficial insects, which are generally more vulnerable to pesticides. No longer held in check by natural enemies, insect pest populations may be higher several weeks after pesticide treatment than before. This phenomenon is termed a pest outbreak. Pesticide resistance is the ability of a population of pests to survive pesticide treatments that had previously controlled that population. Resistance develops in a population through a natural selection process that favors the reproduction of organisms that are less susceptible to the specific lethal effect of the pesticide, and these are able to pass on their genetic traits to their offspring. Resistance causes pesticides to fail. More than 500 pest species have populations that manifest resistance. In an attempt to compensate for these problems, farmers may use even more pesticides, thus paying more for less benefit, and accelerating the process of resistance, a process known as the pesticide treadmill (van den Bosch 1978).

Carson's *Silent Spring* is one of the most influential expressions of environmental philosophy ever published, due to the topic, her evocative language using powerful imagery, and her broader critique of science and government. She described in scientific and poetic terms how new insecticides were pushing popular bird species (e.g., bald eagle, brown pelican) to the brink of extinction. Using normative language, she drew attention to the irreversibility of species extinction. Carson raised philosophical questions about human thinking about new technologies. She criticized the indiscriminate use of pesticides, but also the broader scientific paradigm that promoted them. She decried the seeming inability of pesticide users to recognize its serious environmental consequences and called for more investment in biologically based alternative pest control techniques. She also raised broader questions about scientists and politicians and their paradigm (or institutional patterns of thought),

asking why they disregarded widespread problems caused by indiscriminate use of insecticides.

Political Controversies

Silent Spring prompted a nationwide debate in the USA about pesticides, technological progress, environment, and regulation. Carson's testimony before the US Congress made several normative claims about pesticide use, regulation, and policy, and these were carried forward by advocacy groups and in lawsuits over subsequent decades. She argued individuals should have a right to protection from poisons introduced by others into the environment; only those able to understand the hazards of pesticides should be allowed to purchase and use them; regulatory institutions should be independent of political influence and safeguard public health and the environment; the government should fully support the development of safe, ecologically based alternatives. Carson criticized the US Department of Agriculture for its failure to question the indiscriminate use of pesticides and to investigate the health and environmental consequences. Critics dismissed Carson as a hysterical woman lacking scientific credentials and accused her of ignoring the benefits of pesticides in the control of insect-borne disease. So powerful was Carson's work that it provoked immediate public pressure on elected officials for greater environmental protection. It galvanized civil society groups who brought new ideas about the environment and scored legal and legislative victories by linking popular ideas in society with political advocacy. The US Congress created the US Environmental Protection Agency (EPA). To address charges that the US Department of Agriculture suffered from a pro-pesticide bias, the congress passed the Federal Environmental Pesticides Control Act in 1972 to transfer responsibility for pesticide registration and regulation to the EPA. The move to ban DDT began in some European countries in the 1960s, and a high profile lawsuit led to a ban on DDT in the USA in 1972. Carson's critique was picked up in many

countries, prompting pesticide restrictions and the creation of environmental agencies.

Despite Carson's influence on public opinion, pesticide use continued to rise over subsequent decades. To carry forward *Silent Spring's* critique, entomologist Robert van den Bosch wrote *The Pesticide Conspiracy* (1978), charging the entire pesticide research, manufacture, sales, and use system of suffering from a conflict of interest. He described a "pesticide mafia" of agrochemical manufacturing companies, university and public officials, and large growers who found it to their personal financial interest to promote pesticides in violation of the public interest. He railed against their collusion and claimed that they purposefully sabotaged alternative research and strategies, subsequently labeled as van den Bosch's "corruption" hypothesis (Perkins 1982). Activist criticism of pesticides has fostered anti-farming attitudes among the public. Subsequently, much of the energy of antipesticide activism has shifted to contest transgenic crops, extending analogous ethical criticisms to that technology.

DDT and associated products were banned worldwide as an agricultural pesticide by the 2004 Stockholm convention, although it is still used in farming in some countries. In 1996, the US Congress passed the Food Quality Protection Act, the most significant reform of the nation's pesticide laws since the creation of the EPA. It mandated a major, thorough analysis of pesticides, including those previously exempted from review, informed by risk analysis, and improved understanding of medical toxicology and the role of cumulative health impacts. After *Silent Spring*, pesticide use in the USA continued to rise, although chiefly through greater use of herbicides in corn and annual crops, and has remained relatively stable over the past generation. The intent of the Food Quality Protection Act – and others like it in the EU and elsewhere – was to favor "softer" (less hazardous) pesticides, and some progress has been made. Manufacturers have developed pesticides that are more selective and less persistent; products that attract pests into trap to kill them, thus precluding the need for spraying and synthetic insect pheromones which interfere with insect reproduction (Warner 2007).

In the USA, farmers use roughly \$10 billion in pesticides annually, and this provides approximately \$40 billion in the value of crop protection. However, Pimentel (2005) estimates that they result in approximately \$9 billion in harm on public health and the environment. Thus, those who profit the most from the production, sale, and use of pesticides receive almost all the economic benefit, and the costs are imposed on other people and the environment. This uneven distribution of costs and benefits underpins the ethical assertions that public funding of alternatives to pesticides is a matter of justice (Pimentel 2005).

Scientists and policymakers have long recognized that some introduced (nonnative) species can become highly destructive pests. To detect and exclude them, public authorities regulate international trade and inspect imported goods, especially fresh produce. If new potential pests are detected, imported goods are destroyed or turned away, a practice known as agricultural quarantine. If introduced pests become established, they may require ongoing control, often with pesticides. Eradication is the effective removal of all pests in a new region to prevent recurring costs associated with control. Eradication of introduced pests becomes highly controversial when pests establish in residential or urban landscapes, because this requires the application of pesticides in areas where nonfarming regions for the benefit of agriculture. Eradication is costly and rarely successful, but when it does succeed, the aggregate economic benefit is substantial.

The Search for Alternatives

Biological control is the action of natural enemies in maintaining a pest's density at a lower average than would occur in their absence. As a pest control strategy, classical biological control is the importation and introduction of natural enemies to control pests, generally introduced arthropods and weeds. Biological control entered the popular imagination in the late nineteenth century with the successful control of a nonnative California

citrus pest, the cottony cushiony scale. An American entomologist in Australia discovered that the vedalia beetle, a natural enemy, effectively controlled the scale in its native habitat. He shipped beetles to the USA to be released in citrus orchards, and they quickly reproduced and provided control of the pest (Perkins 1982). When successful, classical biological control is an ideal pest control strategy because the introduced natural enemy population provided recurring suppression of pests. Classical biological control is a public interest science because its beneficiaries are farmers and society as a whole, but it depends upon the ongoing investment of public funds. Biological control was virtually abandoned as a science in the DDT era, but enjoyed a surge in interest after an endorsement by Carson (Warner 2007).

However, in the 1950s, a band of entrepreneurial entomologists in California developed a framework for controlling pests now known as Integrated Pest Management (IPM). Originally developed with insect pests, IPM has subsequently been expanded to include all pests, including weeds, vertebrates, and pathogens. The scientists who pioneered IPM did so to help growers make pesticide use more pragmatic, but subsequently appealed for its adoption to serve the public interest (Perkins 1982). IPM built upon the ecological principles in biological control (e.g., predator–prey relationships, population dynamics, and habitat manipulation) to recommend pesticides only when pest populations rise beyond an economic threshold at which the cost of the pesticide will be exceeded by pest damage. Its developers used the term “integrated” because they recognized that biological control alone as a strategy was not necessarily economically practical, but that when integrated with other techniques, it can be. IPM assumes an understanding of the ecological relationships between crop, pest, natural enemies, and human decision making. IPM recommends pesticides but only in ecologically informed ways.

The rise of ecologically informed alternative agricultural paradigms poses a challenge to continued reliance on manufactured pesticides. Organic agriculture, when true to its ideals,

follows an alternative farming philosophy and uses alternative farming practices. Organic farming practices pest control. It uses certain forms of pesticides that are less hazardous and derived from naturally occurring substances. Experienced organic farmers frequently report they have few problems with insect pests, but that weeds are difficult to control with organic techniques.

Agroecology is defined as the application of ecological concepts and principles to the design and management of sustainable food systems (Gliessman 1998). Thus, it seeks to mimic the function and structure of “natural” ecosystems, by enhancing nutrient cycles, natural pest control, and the biodiversity of farming systems (Warner 2007). Agroecologists criticize reliance on monoculture because this production system causes pest outbreaks and relies upon agrochemical inputs to remain productive. Monoculture generally increases per acre production of one crop, but the resulting farming system is inherently brittle and unstable. The logic of monoculture generally precludes serious consideration of farming systems that mimic natural ecosystems.

Summary

Pest control is a foundational component of industrial farming. A tiny fraction of the world’s arthropod, plant, and plant pathogen species damage and destroy agricultural crops, but their economic impact is considerable. The rapid adoption of DDT-related insecticides after World War II profoundly shaped the pest control practices, the farming practices more generally, the science of entomology, and the agrochemical industry. Although controversial and contested, pesticide use is driven by the economic advantage it provides to the users, even though substantial (but difficult to measure) costs are imposed on workers, rural communities, and the environment.

Rachel Carson’s *Silent Spring* made agricultural pollution – and pesticides specifically – visible to society by decrying its widespread

impact on wildlife. *Silent Spring* is among one of the most influential expressions of environmental philosophy ever published, due to the topic, her evocative language using powerful imagery, and her broader critique of the paradigm and human values that gave rise to the pesticide industry. She brought to public attention a most disturbing irony: the agriculture upon which human society depends for sustenance was poisoning the environment and human beings. Indiscriminate use of chemical technologies risked the planet and future generations. Carson pointed to “extraordinary array of alternatives,” based on ecological science. “Much of the necessary knowledge (of alternatives) is now available but we do not use it” (Carson 1962, p. 11).

Cross-References

► [Agricultural Ethics](#)

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Peter Singer and Food

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Synonyms

Animal suffering; Factory farming; Preference utilitarianism; Speciesism; The ethics of eating; Vegetarianism

Introduction

Peter Singer became well-known internationally after the publication of *Animal Liberation* in 1975. His research is strictly connected with food and eating as he investigates the area of well-being of nonhuman animals in order to prevent their suffering. He wrote many relevant books in this field: *Animal Factories* (with coauthor Jim Mason in 1980); *In Defence of Animals*, a collection of essays by philosophers, scientists, and activists in the Animal Liberation Movement, published in 1985; and the more recent *The Way We Eat. Why our food choices matter* (with coauthor Jim Mason in 2006). According to philosopher Helga Kuhse, Singer is “almost certainly the best-known and most widely read of all contemporary philosophers”; yet he has also been hailed as “one of the world’s 100 most influential people” and “among the most influential philosophers alive,” but he has also been brandished “the most dangerous man on earth,” accused of being a “public advocate of

genocide” for his theories about abortion, euthanasia, and infanticide. Born in 1946, Peter Singer grew up in a fairly typical “heavy meat-eating” Australian family. As a graduate student at Oxford University in 1971, he became a vegetarian after learning about factory farming; from then on, he focused his research, his teaching, and his philosophy on the importance of preventing suffering by a “preference utilitarian” perspective, in order to extend ethics beyond sentient beings. (For this reason his moral point of view is commonly known as “extensionism.”) As he wrote in his seminal book, which became the Animal Liberation Movement manifesto, “the aims of the movement can be summed up in one sentence: to end the present speciesist bias against taking seriously the interests of nonhuman animals” (Singer 1985). The fundamental moral issue of eating for Singer is not merely the fact that humans kill animals for food; rather, it is more the idea that the animals just have unhappy lives and humans are really doing this for something that they do not need to eat.

Eating Ethically

Eating is an ethical issue as it deals with animal well-being and suffering. But this habitude should not be generally considered as a “raising ethical issue,” because “eating is even more essential than sex, and everyone does it, usually more than once a day” (Singer 2005). The first step in moral evaluation of eating and food choices is to increase everyone’s consciousness: the most evident problem – as Singer pointed out – is that humans are generally ignorant of the abuse of living creatures that lies behind the food they eat. They do not usually care, indeed, about the way the food they eat is produced, about the way nonhuman animals live and suffer in the industrial factories, as humans do not consider the environmental consequences of their feeding and the political cost of their choices at the market. As Singer wrote: “When we eat – or more specifically, when we pay for what we eat, whether at a farmer’s market, a supermarket, or

a restaurant – we are taking part in a vast global industry. [...] Food production affects every person on this planet and untold billions of animals as well. It is important, for the sake of the environment, animals, and future generations, that we see our food choices as raising serious ethical issues and learn the implications of what we eat” (Singer 2005). Hence, on the one side, consumers have an ethical responsibility not only to choose accurately but also to be aware of the way their food is produced; on the other side, the big brands have a corresponding obligation to be more transparent about their suppliers, in order to make their customers informed about what they are eating. But in many cases the biggest food companies themselves do not know how they perform on these issues, betraying a profound lack of ethical responsibility on their part.

This human lack of interest for animal suffering is caused, for Singer, by a sociological shift, linked to the ethics of globalization and by the western and Christian tradition, which both accepted the idea that animals are essentially resources for human use and benefit: they should be considered as merely means or products – an interesting interpretation of this issue is suggested by Camosy, who unconventionally points out the possibility to match the Christian thought with Singer’s philosophy (Camosy 2012). In Singer’s words: “For most humans, especially those in modern urban and suburban communities, the most direct form of contact with nonhumans animals is at meal time: we eat them” (Singer 2009). Moreover, “the use of animals for food is probably the oldest and the most widespread form of animal use. There is also a sense in which it is the most basic form of animal use, the foundation stone on which rests the belief that animals exist for our pleasure and convenience. If animals count in their own right, our use of animals for food becomes questionable – especially when animal flesh is a luxury rather than a necessity” (Singer 1993). Therefore, according to Singer, eating should be a moral issue because it concerns the possibility of someone’s suffering, and, from a benthamian/utilitarian point of view, “if a being suffers, there can be no moral justification for refusing to take that suffering into consideration” (Singer 2001).

Utilitarianism and Vegetarianism

In his early writings Peter Singer showed the possibility to ground a vegetarian philosophy on a utilitarian moral perspective: “I am a utilitarian. I am also a vegetarian. I am vegetarian because I am a utilitarian. I believe that applying the principle of utility to our present situation – especially the methods now used to rear animals for food and the variety of food available to us – leads to the conclusion that we ought to be vegetarian” (Singer 1980). The reason is quite simple: Singer is a utilitarian, and utilitarians typically focus on the moral imperative to improve well-being (or happiness or “utility”) and to avoid pain (or physical suffering). The fundamental moral issue in eating is, as observed above, animal treatment: “What are the implications of utilitarianism for our treatments of animals? When we apply utilitarianism to the issue of how we should treat animals, one vital point stands immediately. Utilitarianism, in its classical form, aims at maximizing pain and maximizing pleasure” (Singer 1980).

The focal point in this approach is, thus, the possibility to experience and feel pain and pleasure: “The capacity for suffering and enjoying thing is a pre-requisite for having interests at all, a condition that must be satisfied before we can speak of interests in any meaningful way [...] If a being suffers, there can be no moral justification to take that suffering into consideration. No matter what the nature of the being, the principle of equality requires that its suffering be counted equally with the like suffering [...] of any other being. If a being is not capable of suffering, or of experiencing enjoyment or happiness, there is nothing to be taken into account. This is why the limit of sentience [...] is the only defensible boundary of concern for the interests of others” (Singer 2001).

Emphasizing sentience is the first step, in Singer’s thought, towards an extensionist ethics, as it should causes the end of an anthropocentric “speciesistic” approach; granting a moral status to nonhuman animals – at least to some of them – also means considering them as individuals capable of choosing and acting with a purpose and

a project. The first and the main purpose for a sentience being is – according to Singer – to experience (and cause) pleasure and to avoid suffering, unless there is a sufficient justification: this is one of the most basic moral principles, shared by virtually everyone. In this respect everyone can correctly say with Singer that almost all nonhuman animals are morally significant entities: they have moral standing like humans and unlike stones. Referring to Bentham, indeed, Singer wrote: “the question is not, Can they reason? nor, Can they talk? but, Can they suffer? That is indeed a crucial question to ask whenever we are talking about beings who are capable of suffering and one that is clearly relevant to how we should treat both humans and nonhuman animals. Can they suffer? Can they enjoy life? If so, they have interests that we should take into account, and we should give those interests equal weight with the interests of all other beings with similar interests” (Singer 2009). Here Singer’s argument, though appealing, is quite weak because of its arbitrary starting-point grounded in self-interest: “Is there any reason why we should accept that ethical judgments can arise only by way of universalizing self-interested decision-making?” (Buckle 2005).

A utilitarian focus on well-being is, moreover, classically understood as a balancing act: since it is not always possible to enjoy maximal well-being – in many cases, indeed, one’s interests conflict with another one’s – everyone should act in order to balance interests and perhaps to maximize happiness while minimizing suffering: “The only principle of equality I hold is the principle that the interests of every being affected by an action are to be taken into account and given the same weight as the like interests of any other being [. . .]. The principle of equality of interests merely makes it explicit that, because the principle of utility is the sole basis of morality, no other principle will limit the application of the principle of utility, or affect the way in which it operates. [. . .] As I said in *Animal Liberation* – The basic principle of equality does not require equal or identical *treatment*; it requires equal *consideration*” (Singer 1980).

Yet the consistent application of the abovementioned principles seems to lead directly to vegetarianism or, at least, to the avoidance of factory-farmed meat. The argument here is disarmingly simple and linear:

1. In modern factory farms, animals who are raised and slaughtered for food suffer considerable pain (Singer and Mason 1980).
2. Humans could easily nourish their selves without eating nonhumans animals.
3. The only reason to eat flesh is the enjoyment of how they taste.
4. The gustatory pleasure is not a sufficient justification for causing torment and suffering.
5. So, it is morally wrong to produce and consume such products.

That is to say: “If we are prepared to take the life of another being merely in order to satisfy our taste for a particular type of food, then that being is no more than a means to our end” (Singer 1990). But, as Cora Diamond points out, a similar approach is to a certain extent reductive and constraining, because it “makes it hard to see what is important either in our relationships with other human beings or in our relationship with animals” (Diamond 2004).

The utilitarian’s argument for vegetarianism is quite simple – but surely more effective – than the one proposed by Tom Regan and the promoters of animal rights, as it shows how pleasure and suffering are strictly connected with sentience, without introducing any other elements (such as “duty” or “right”) in order to protect interests.

This is, precisely, one of the most criticized arguments by Singer’s opponents: the same reasons that lead someone to reject unfair treatment for animals are not strong enough to encourage changes in his lifestyle: “Critics allege that while utilitarians and consequentialists generally may oppose conventional animal productions, their theoretical basis for opposition doesn’t warrant individual dietary change” (Almassi 2011).

Vegetarianism: Change Your Philosophy, Change Your Life

Once one has clarified the reasons why it would be immoral to eat meat, it is necessary to translate these reasons into concrete ways of acting, in

order to change things. But Singer's thought is quite different from traditional vegetarianism, as it focuses not so much on the need to not eat meat, but rather on the moral obligation to prevent pain and suffering of nonhuman animals: "Some writers [...] think of vegetarians as immoral absolutists, who will stick to their belief in the immorality of eating meat no matter what. Thus Cora Diamond writes: – one curious feature of the Peter Singer sort of argument ... is that your Peter Singer vegetarian should be perfectly happy to eat the unfortunate lamb that has just been hit by a car –. Why is this curious? Is it only curious on the assumption that vegetarians must think it *always* wrong to eat meat" (Singer 1980).

Peter Singer, thus, is not an absolutist vegetarian: he embraces vegetarian philosophy as the only possible way to support the interests of a larger number of sentient beings; in this respect, "the answer is to boycott all meat and eggs produced by large-scale commercial methods of animal production, and encourage others to do the same. Consideration for the interests of animals alone is enough justification for this response, but the case is further strengthened by the environmental problems that the meat industry causes" (Singer 1998). Even more: "*Merely* becoming a vegetarian, without doing anything else to change our treatment of animals, may have no effect at all. But I do not advocate this passive form of vegetarianism. I advocate vegetarianism as something which underpins, makes consistent, and gives meaning to all our other activities on behalf of animals" (Singer 1980).

Ethics, Food, and the Environment

Human choices about food are intrinsically moral for another important reason: they should have a more or less negative impact on the environment: "Environmentalists are increasingly recognizing that the choice of what we eat is an environmental issue" (Singer 1998). The reason is quite simple: "Animals raised in sheds or on feedlots eat grains or soybeans, and they use most of the food value of these products simply in order to maintain basic functions and develop unpalatable parts of the body like bones and skin. To convert eight or nine kilos of grain

protein into a single kilo of animal protein wastes land, energy, and water" (Singer 1998). Nowadays, agriculture is a major source of greenhouse-gas emissions and also one of the sectors most at risk from climate change: these are the two most important topics to be taken into account when it is necessary to express a moral judgment; grazing ruminant animals, like cattle and sheep, also contribute significantly to climate change. The moral question goes as follows: are humans still able to afford this luxury on a crowded planet with a growing human population? The more realistic answer is negative: "Intensive animal production is a heavy user of fossil fuels and a major source of pollution of both air and water. It releases large quantities of methane and other greenhouse gases into the atmosphere. We are risking unpredictable changes to the climate of our planet – which means, ultimately, the lives of billions of people, not to mention the extinction of untold thousands of species of plants and animals unable to cope with changing conditions – for the sake of more hamburgers. A diet heavy in animal products, catered to by intensive animal production, is a disaster for animals, the environment, and the health of those who eat it" (Singer 1998).

Obesity: Weigh More, Pay More

For a similar reason, it is possible to consider even obesity as an ethical issue, because an increase in weight by some imposes costs on others; these costs are not only "financial costs" but also "environmental" ones: this is the main reason that brings Singer to the ethical condemnation of obesity. The author reports a number of examples to strengthen his thesis: the higher environmental impact of fuels for transports, for example, an increase in the use of jet or train fuel implies higher greenhouse-gas emissions, which could make worsen the condition of global warming, and the necessity to build new infrastructures – when people get larger and heavier, indeed, fewer of them fit onto a bus or train; moreover, hospitals must order stronger beds and operating tables, have to build extra-large toilets, and so on.

These facts are enough, in Singer's mind, to condemn obesity and to justify public policies

that discourage weight gain, for example, by taxing foods that are disproportionately implicated in obesity. These policies may also help in obtaining two positive consequences: discouraging their consumption by people who are at risk of obesity and using revenue raised to offset the extra costs that overweight people impose on others. In a utilitarian perspective, obesity is an ethical matter, that is to say it should be considered not only as a personal issue but as a universal one: valuing both human well-being and environmental health, human weight is everyone's business.

Factory Farming and Animals Treatment

"The case against using animals for food is at its strongest when animals are made to lead miserable lives so that their flesh can be made available to humans at the lowest possible cost. Modern forms of intensive farming apply science and technology to the attitude that animals are objects for us to use. In order to have meat on the table at a price that people can afford, our society tolerates methods of meat production that confine sentient animals in cramped, unsuitable conditions for the entire duration of their lives. Animals are treated like machines that convert fodder into flesh, and any innovation that results in a higher "conversion ratio" is liable to be adopted. [...] If we do not change our dietary habits, how can we censure those slaveholders who would not change their own way of living?" (Singer 1993). As Singer and Mason showed in their recent book *The Way We Eat*, in the United States alone, many billions of animals are killed each year for human consumption, almost all of them raised in "factory-farm" conditions in which their well-being is systematically sacrificed. A minimal decent life for animals, indeed, is not possible in CAFOs (Concentrated Animal Feeding Operations), because the main purpose of factory farms is to reduce expenditures and thereby maximize profits. As Singer wrote, it is not an individual's problem, but rather a political (and economical) one: "The real ethical issue

about factory farming's treatment of animals isn't whether the producers are good or bad guys, but that the system seems to recognize animal suffering only when it interferes with profitability. The animal industry always says that producers take care of their animals because what is good for the animals is good for the producer" (Singer and Mason 2006).

However, the real Singer's purpose is to shed light on the condition of animals in factory farms in a very effective way, in order to make everyone think about the real standard of living of nonhuman animals (Singer 2010). In this regard, he shows how about 90 % of US breeding sows spend today most of their lives locked in really tight cages, unable to turn around, and kept on short tethers; he highlights how, in the same way, veal calves are confined for all their lives in individual stalls that do not permit them to turn around, lie down, or stretch their limbs. The same goes for chickens, which cannot move around "not because they are overstocked, but because it hurts their joints so much. Sometimes vertebrae snap, causing paralysis. Paralyzed birds or birds whose legs have collapsed cannot get to food or water and [...] die of thirst or starvation" (Singer and Mason 2006).

In this regard, the factory farm is nothing more than the application of technology to the idea that animals are means to human's ends.

Food and Policies

For Singer's purposes the philosophical thought should be made into political activism and militancy: this is the reason why humans should begin to see the purchase and consumption of factory-farm products, whether by an individual or by an institution like a university, as a violation of the most basic ethical standards of how they should treat animals and the environment. This is, nowadays, one of the big moral issues, and human beings are – in Singer's mind – superficially overlooking it, focusing merely on issues like the use of embryos for research and gay marriage.

The issue should be analyzed and solved in social and political terms: the problem may not be

with citizens' attitudes, but rather that, at the federal level, the political system allows big industries too much power to frustrate the needs of popular majorities. Americans, indeed, seem to care just as much about animal welfare as Europeans do: thus, how is it possible to explain the gap between Europe and the United States on farm animal welfare? Looking at the political systems: as demonstrated by Singer, while in Europe the concerns of voters about animal wellness have been successful in persuading members of national parliaments, in the United States, similar concerns have had no noticeable effects on the Congress. While in Europe there are national legislations and EU directives that respond to the concern of animal welfare, in the United States there is no federal legislation and very little state legislation on this concern. The reason is quite simple for Professor Singer: in the US electoral politics, money counts for more than the opinions of voters.

Another fundamental moral issue with a huge political impact deals with agriculture: "No other human activity has had as great an impact on our planet as agriculture. When we buy food we are taking part in a vast global industry. Americans spend more than a trillion dollars on food every year. That's more than double what they spend on motor vehicles, and more than double what the government spends on defense" (Singer and Mason 2006). This moral issue is two-sided: on the one side, customers have the moral obligation to buy locally and in season in order to save energy and transportation costs and to discourage the global market; on the other side, it is needed to prevent the purchase of agricultural land in developing countries by rich ones with international policies.

Summary

In Singer's thought, eating is an ethical and a political issue together: it is an ethical issue as it deals with animal wellness and suffering; it is, indeed, a political issue since it concerns international policies regarding the environmental impact and the climate change, in large part

influenced by our food choices. In this perspective, vegetarianism seems to be the only possible way to support the interests of a larger number of sentient beings in order to realize the preference utilitarian moral imperative.

Cross-References

- [Agricultural Ethics](#)
- [Agricultural Science and Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Christian Ethics and Vegetarianism](#)
- [Climate Change, Ethics, and Food Production](#)
- [Environmental Ethics](#)
- [Farmer Types and Motivation](#)
- [Industrial Food Animal Production Ethics](#)
- [Meat: Ethical Considerations](#)
- [Obesity and Responsibility](#)
- [Population Growth](#)
- [Trade Policies and Animal Welfare](#)
- [Vegetarianism](#)

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Plant-Based Diets and Scientific Value Judgments

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Synonyms

Ethics; Nutrition; Philosophy; Plant-based diet; Value judgments; Vegan diet; Vegetarian diet

Introduction

Diets containing animal products predominate in the developed world. Fewer than 10 % of persons in the USA follow a vegetarian-inclined diet; fewer than 3 % are strict vegetarians who consume no meat, poultry, or fish; and less than 1 % are vegans who consume no animal products (Vegetarian Times 2008). Furthermore, diets in the developed world are often characterized by heavy consumption of animal products—up to 250 pounds annually (Daniel et al. 2011). As the developing world industrializes, industrial

animal agriculture is expanding, and dietary patterns are shifting towards the heavy consumption of animal products characteristic of the West (Delgado 2003). Despite these facts, the consumption of animal products has become the object of much moral scrutiny over the past few decades, because of animal welfare concerns, environmental concerns, public health concerns, and nutritional concerns. A key supposition in moral arguments for partially or completely plant-based diets is that human beings can sustain healthy lives without animal products. Were diets excluding animal products significantly damaging to human health, then arguments for morally obligatory plant-based diets would be seriously weakened.

A large amount of nutritional science about plant-based diets, defined here as strict vegetarian or vegan diets, has accumulated in the past few decades, much of which indicates that plant-based diets are not only capable of meeting human nutritional needs but can actually provide health benefits as compared to omnivorous diets (see, e.g., American Dietetic Association 2009; Fraser 2009). However, plant-based diets are also associated with certain putative health risks, the most significant being the risk of protein deficiency, vitamin D and B12 deficiency, iron deficiency, and calcium deficiency – though these health risks are not necessarily unique to vegan diets (American Dietetic Association 2009 and Dunn-Emke 2005). These risks may be invoked in discussions of food ethics as counting against the moral obligatoriness of plant-based diets for some or even all persons, either because such persons cannot obtain the necessary nutrients, can obtain them only with difficulty, or cannot reasonably be expected to have the knowledge to appropriately plan a plant-based diet (see, e.g., George 1994).

Furthermore, in recent years there has been an increased interest in the so-called Paleolithic diets (e.g., there are now a number of journals that study such “Paleo” diets), which are explicitly based on the premise that humans are best adapted evolutionarily to consuming a large portion of their calories from meat and also to avoiding certain foods such as starches (see, e.g., Cordain 2002). Because of these issues the

nutritional adequacy of plant-based diets cannot be assumed as an uncontroversial starting point in discussions of food ethics, despite scientific agreement in general terms about their potential nutritional adequacy.

When engaging discussions about plant-based nutrition, it is important to view claims critically, since they often appear to be influenced by covert value judgments or framing assumptions. At times these value judgments and framing assumptions are evident in published philosophical or scientific literature; they also appear in conversation with sufficient frequency to merit examination. This entry reviews some of these value judgments and assumptions and shows how they may affect discussions about the nutritional adequacy of plant-based diets, particularly in Western countries such as the USA where omnivorous diets predominate. The goal is not to settle debates about the nutritional adequacy of plant-based diets but rather to improve the quality of discourse about nutrition and food ethics by alerting the reader to what might be hitherto unnoticed, but potentially contestable, judgments present in the nutritional assessment of plant-based diets.

Are the Risks of Plant-Based Diets Scrutinized More Closely than the Risks of Omnivorous Diets?

The adoption of animal products into the diet of modern humans or our ancestors is not something that occurred only after a comprehensive risk analysis was performed and indicated that such products pose no risk; in fact no dietary pattern is free of risk. When considering the nutritional adequacy of plant-based diets, then, the appropriate determination is one of risks and potential benefits *as compared to alternative dietary patterns*. Such determinations cannot be made appropriately if all relevant risks and potential benefits are not considered or are considered in a biased fashion whereby some are selectively under- or overemphasized. A number of considerations suggest that plant-based diets may commonly be subject to differently stringent evaluation than omnivorous diets.

One such consideration is that the possible healthfulness of plant-based diets tends to be called into question while the possible healthfulness of diets containing animal products does not. For example, the American Dietetic Association (ADA) has published a position paper examining the nutritional adequacy of vegetarian diets (American Dietetic Association 2009) but has not published a position paper examining the nutritional adequacy of omnivorous diets. While the ADA statement is favorable to vegetarian diets, including total vegan diets, the very fact that such a position paper exists demonstrates a presupposition that the nutritional adequacy of plant-based diets cannot be assumed—either by the ADA, or by the American public more generally, to whom the ADA statement might be addressed. While academic articles examining specific health risks associated with the consumption of animal products can be found in the nutritional literature (see, e.g., Sinha et al. 2009; Hebels et al. 2012), such articles do not appear (in most cases) to have prompted significant doubt or worry, either among nutritionists or the general public, about whether it is *possible* or *difficult* to be healthy on an omnivorous diet. Rather, the risks associated with the consumption of animal products are usually considered in isolation or else coupled with recommendations to change specific aspects of an omnivorous diet, such as increasing the percentage of fruits and vegetables, decreasing overall meat consumption, or replacing red meat with poultry or fish, rather than eliminating animal products from one's diet entirely (see, e.g., Sinha et al. 2009; Popkin 2009).

In contrast, academic articles specifically examining or even questioning the overall healthfulness of plant-based diets *at a categorical level* are comparatively easier to locate (Waldman et al. 2005; Weaver et al. 1999; Haddad et al. 1999; Ingenbleek and McCully 2012). Whereas the risks of consuming certain types or amounts of animal products may motivate discussion of how persons consuming animal products can be healthier, the risks of plant-based diets are often discussed in the context of whether persons following plant-based diets *can* be

healthy or *how difficult* it is for them to be healthy. This difference in rhetorical framing is subtle but important. Even where nutritional assessments of plant-based diets conclude that they can meet humans' nutritional needs, the rhetorical posture often seems to be that such diets require positive nutritional justification: they are assumed to be risky, or at least of questionable healthfulness, until shown otherwise. As one article puts it: "The adequacy and nutritional effect of diets based entirely on plant foods is still under investigation" (Haddad et al. 1999). Hence, plant-based diets per se may be thought to require positive justification in a way that omnivorous diets per se are not, even though there are nutritional concerns relating to both dietary patterns and even though there is consensus that plant-based can be healthful for persons in all life stages.

Furthermore, when the potential advantages of plant-based diets over omnivorous diets are discussed, they are usually framed as *potential benefits* of plant-based diets, rather than *potential risks* of omnivorous diets. Again, this difference in rhetorical framing is subtle but important: it gives the impression that plant-based diets are perhaps associated with some desirable things, rather than the impression that omnivorous diets are associated with undesirable things. In contrast, were these differences framed as risks of omnivorous diets, the rhetorical effect would be one of portraying omnivorous diets as possibly harmful in comparison to plant-based diets, with the predictable upshot of conditioning debates about food ethics in terms of the permissibility of imposing risk on one's self, one's children, or the public's health by eating animal products.

While plant-based diets are associated with some risks, 33 % of adults and 17 % of children in the USA are obese (CDC 2012), and the USA is currently struggling with a significant public health burden from a number of chronic diseases directly linked to diet in general and the consumption of animal products in particular (Walker et al. 2005). Plant-based diets compare favorably to omnivorous diets as concerns body mass index, hypertension, type 2 diabetes, certain types of cancer, and all-cause mortality

(American Dietetic Association 2009; Fraser 2009). In light of these facts, the relative overemphasis in the academic literature on the risks of plant-based diets as compared to the risks of omnivorous diets may indicate a subtle cultural bias (Varner 1994a, b).

A second potential indicator of differential scrutiny between plant-based and omnivorous diets is the rhetoric of "appropriate planning." Any dietary pattern can be unhealthy if not planned appropriately. The overwhelming preponderance of omnivorous diets and the public health burden of diet-related diseases in the USA suggest that many persons following omnivorous diets are not planning them appropriately. Nonetheless, the importance of appropriately planning a plant-based diet often seems to be overemphasized as compared to omnivorous diets. For example, one prominent nutritionist has claimed that it is "unethical for people to bring up their children as vegetarians, *unless they take great care to know what they're doing*" (Singer and Mason 2007, at 226; see also George 1992). Similar statements concerning omnivorous diets are not generally made. Critics of plant-based diets might respond that more knowledge is required to appropriately plan plant-based diets as compared to omnivorous diets, but this is questionable. For example, it is not obvious that any special expertise is required to heed the ADA's recommendation that "an assortment of plant foods [be] eaten over the course of a day" to provide adequate protein intake and variety (ADA 2009). As Gary Varner observes, "anyone who can learn the meaning of 'legume' and find the vitamin section in the supermarket can understand how to follow [plant-based nutritional] guidelines" (Varner 1994a, p. 35).

A third way in which plant-based diets may be subject to differential scrutiny is that their specific risks may be overemphasized while their specific benefits are underemphasized. Varner (1994a, b) has described how discussions of plant-based diets in the nutritional literature tend to devote more space to their risks than their potential benefits, sometimes ignore important research relating to their benefits, and may

overemphasize the evidence supporting risks while calling into question the evidence supporting their benefits. Though more recent nutritional literature generally does a better job of discussing the benefits of plant-based diets, the overall amount of attention paid to risk as compared to benefit still seems disproportionate in many instances.

There are at least two reasons why the risks of plant-based diets may be scrutinized more closely than omnivorous diets. One possible reason is self-interest: most persons in the USA and developed world consume large amounts of animal products and may be reluctant to change their preferred dietary pattern. A relative overemphasis of the risks of plant-based diets provides a reason against changing dietary patterns, since a person's own health can be cited as a reason not to adopt a plant-based diet. A second reason derives from what has been termed the cultural theory of risk selection. Sociologists and psychologists studying risk perception have long observed that both individual and group attitudes towards risk are variable and conditioned by a number of factors in addition to the probability or nature of an adverse outcome (see, e.g., Douglas and Wildavsky 1983; Finkel 2008). Such factors include social values and the familiarity of the risk in question. When risk-bearing activities or situations are unfamiliar, or when such activities or situations do not conform with widely shared social values, risks tend to be regarded as higher. Consistent with these observations, the statistical normalcy of omnivorous diets and the fact that moral views often underlying plant-based diets are not widely shared at present both may result in plant-based diets receiving added scrutiny as compared to omnivorous diets.

Framing Assumptions and Value Judgments in the Assessment of Dietary Risk

In addition to the general level of scrutiny given to plant-based and omnivorous diets, an examination of the nutritional literature indicates that framing assumptions and value judgments also

significantly impact the nutritional evaluation of plant-based diets. One type of framing assumption concerns the way in which plant-based diets are defined. Studies of plant-based nutrition have, until very recently, frequently used as study populations the so-called new vegetarians, such as macrobiotics, who are persons following particular and often restrictive versions of plant-based diets based on religious principles. Such persons may eschew certain plant-based food sources and/or supplements. Not surprisingly, studies of plant-based nutrition carried out in such populations may document certain nutritional deficiencies, such as vitamins D or B-12 deficiency (Varner 1994a).

Even where nutritional studies do not focus on special subgroups of persons following plant-based diets, they often focus on the diets that people *happen* to eat and not the diets they *should* be eating from a nutritional planning standpoint. For example, a recent study found that vegans had a 30 % higher risk of bone fracture than omnivores, but upon closer inspection, it turns out to be the case that many of the vegans in the study were not taking in adequate calcium and that the increase in fracture incidence for vegan diets disappeared after calcium intake was controlled for (Appelby et al. 2007). These kinds of findings are important for documenting the risks of inappropriately planned plant-based diets, but they cannot be generalized to plant-based diets per se. Nonetheless, there is a historical tendency in the academic literature to identify “new vegetarians” with *all* vegetarians (Varner 1994a), and this tendency is still evident in some recent published work (see Finch and Stanford 2004, p. 11).

Contestable value judgments may be involved in the definition of dietary risk itself. In some cases, dietary risk associated with plant-based diets is assessed based on dietary intake or bioavailability of key nutrients such as iron, calcium, or sulfur-containing amino acids (Lönnerdal 2009; Ingenbleek and McCully 2012). However, this can be a problematic way to assess risk. For example, the lower bioavailability of nonheme iron in plant foods may be compensated for in some cases by the comparatively higher iron content in these foods. For many consumers in

developed countries for whom food availability is not an issue, simply increasing the amount of a food consumed can also compensate for lower bioavailability.

Furthermore, dietary intake might not always be a good criterion for risk assessment by itself.

As concerns iron, for example, increased absorption and decreased excretion can help to compensate for decreased dietary intake (American Dietetic Association 2009). Moreover, the adequacy of actual dietary intake needs to be assessed against an appropriate standard. For example, persons following plant-based diets may need less calcium than is generally recommended, since calcium requirements increase with protein intake, since persons following plant-based diets generally consume less protein than persons following omnivorous diets, and since the US RDA for calcium was set based on an assumption that most persons would be following Western diets high in animal protein (Lanou 2009; see also Bhatia 2008).

In other cases, the risks of plant-based diets are defined by reference to biochemical indicators of questionable importance. For example, studies may assert that plant-based diets are associated with a risk of iron deficiency based on the finding that persons following such diets have lower serum ferritin levels than persons following omnivorous diets (Lisowska et al. 2006). While serum ferritin is often considered an important indicator of overall iron stores, vegetarians or vegans with low serum ferritin levels often have normal serum iron levels, as well as normal hemoglobin levels. Furthermore, the ADA notes that the “incidence of iron-deficiency anemia among vegetarians is similar to that of nonvegetarians” (American Dietetic Association 2009). Hence, the attribution of iron deficiency risk to persons following plant-based diets on the basis of low ferritin levels is questionable, as “the physiologic significance of low serum ferritin concentrations is uncertain at this time” (Craig 2009, p. 1629S).

Contestable value judgments may also be involved in dietary risk assessment because the risks of one dietary pattern may be assessed without reference to the risks of alternative dietary patterns. Dietary calcium intake provides a good

example. One recent commentary (e.g., Weaver 2009) recommends dairy intake as an essential part of a healthy vegetarian diet, since in the author’s view persons are unlikely to achieve adequate calcium or potassium intake without it. This is a contestable claim, not least because the author explicitly defines “vegetarian diet” as one that does not include soymilk, despite the fact that fortified soymilk is widely available and can (notwithstanding calcium present in other plant foods or supplements) provide similar levels of calcium to cow’s milk, which provides the majority of calcium in standard Western diets.

A counterpoint response notes that the consumption of dairy products may be associated with a number of diseases, including prostate and ovarian cancer, some autoimmune disease, allergy, and otitis (Lanou 2009). Furthermore, Western countries, in which omnivorous diets predominate, and which have the highest protein and calcium intakes, also have the highest incidence of osteoporotic bone fracture, something known as the “calcium paradox.” Some commentators recommend a shift to an appropriately planned plant-based diet for *optimal* bone health (Lanou 2009; Anderson 1999).

Serum ferritin provides another example. The lower serum ferritin levels sometimes documented in persons following plant-based diets have been cited as a risk of iron deficiency. However, there is some evidence that serum ferritin levels are positively associated with cardiovascular disease (You and Wang 2005). Heme iron, but not nonheme iron, has also been associated with cardiovascular disease (Geissler and Singh 2011). Hence, the lack of heme iron in plant-based diets, and also the lower serum ferritin levels sometimes seen in persons following plant-based diets, can also be viewed as a possible benefit compared to omnivorous diets.

The framing of a risk can influence a person’s perception of its magnitude. For example, the aforementioned 30 % increase in fracture risk seen in vegans as compared to omnivores was reported as a relative risk. When this is translated to an absolute risk, the risk difference between vegans and omnivores was about 1 % (Appelby et al. 2007). When presented this way,

the overall magnitude of the risk looks much less serious than when presented as a 30 % increase.

Finally, it should be emphasized that as concerns vitamins D or B12, their metabolites, calcium, and iron, studies may report conflicting results. For example, some studies find that persons following plant-based diets have low serum ferritin levels (Lisowska et al. 2006), while others do not (American Dietetic Association 2009). Even where unplanned or poorly planned diets are concerned, evidential value judgments are involved in determining whether sufficient evidence exists to say that a putative risk is real.

Naturalness and Evolution

Arguments about naturalness and evolution may also play a role in the nutritional assessment of plant-based diets. Both strong and weak forms of this argument are recognized. The weak form holds that even if supplements or fortified foods are capable of meeting nutritional needs on a plant-based diet, we should prefer omnivorous diets because supplements are unnatural, whereas sourcing these nutrients from animal products is natural. This form of argument is really just an application of the “natural is good” argument to the realm of nutrition. The argument that what is good or right can be defined in terms of what is natural, or that what is natural provides a good *criterion* for identifying goodness or rightness, has been substantially criticized in the philosophical literature and so will not be reviewed in any detail here. For example, it is arguably “natural” for humans to be both violent and prejudiced towards persons not like them, but both of these tendencies are arguably bad from a moral standpoint. Furthermore, it may be recommended that persons following omnivorous diets take vitamin supplements in some circumstances, and many foods (e.g., breakfast cereals) are vitamin fortified. Hence, arguments from naturalness may apply equally to plant-based and omnivorous diets.

A strong form of the naturalness argument holds that humans are best adapted from an

evolutionary standpoint to eating meat and that the substitution of other protein sources and/or supplements for meat in the diet will be less healthful. This argument does not equate naturalness with goodness per se but rather holds that the most appropriate diet for humans is the one that is most conducive to our health or flourishing; that what is most conducive to our health or flourishing can be discovered through an examination of humans’ ancestral dietary patterns and/or other evolutionary considerations; and that an examination of these evolutionary considerations shows a meat-containing or even meat-rich diet to be best.

This is the form of argument underlying the so-called Paleolithic (or Paleo) diets. Specific components of Paleolithic diets may include high intake of lean animal protein; high intake of fresh fruits and vegetables, particularly green, leafy vegetables; the elimination of starchy vegetables, dairy, and all grains from the diet; increased intake of nuts and seeds; and the elimination of processed foods altogether (Cordain 2002). The present concern is with plant-based versus omnivorous diets, so the relevant question is whether large amounts of lean animal protein are nutritionally superior to plant-based protein with or without appropriate supplements.

There are two lines of argument supporting Paleolithic diets. The first is the empirical observation that modern, developed countries show high incidences of a number of chronic diseases not seen in less developed countries or in contemporary hunter-gatherer societies. The second is the supposition that humans are best-adapted genetically to eating a diet closely approximating what our ancestors ate prior to the development of domestic agriculture and therefore that the chronic diseases seen in developed nations are attributable to deviations from this diet (Cordain 2002). Limited direct empirical data support the conclusion that Paleolithic diets may help to lower blood pressure, decrease body mass index, and control blood sugar, particularly in persons who are obese and/or diabetic, compared to no dietary change (Lindberg 2012). However, it is not presently clear which components of Paleo diets are most responsible for these

benefits – such benefits may, for example, be attributable to overall caloric restriction instead of animal protein. Furthermore, most of the arguments supporting Paleolithic diets are indirect and not based on direct empirical data.

A number of counterarguments raise doubts about the plausibility of Paleolithic nutrition. First, the lack of “diseases of civilization” seen in modern hunter-gatherer societies, despite sometimes high intakes of animal protein and fat, may be attributable to a very active lifestyle and not the benefits of diet itself – a point which proponents of Paleolithic nutrition often indirectly note themselves. Second, proponents of Paleolithic nutrition may make contradictory claims concerning evolutionary adaptation, for example, by endorsing “thrifty gene” hypotheses to explain humans’ storage of excess carbohydrates as fat while also maintaining that Paleolithic diets did not contain significant carbohydrate (Knight 2011).

Third, theories of Paleolithic nutrition are premised on the idea that humans’ genetic evolution stopped in Paleolithic times, but this is not necessarily true (Knight 2011). Fourth, Paleo proponents typically hold that hunter-gatherer societies consumed large amounts of protein and little if any starch. However, only a few hunter-gatherer societies, such as the Eskimo, obtained most of their nutrients from animal sources. In most cases plant foods, including starchy plant foods, formed a large part if not the bulk of hunter-gatherer diets (Milton 2000; Mercader 2009). Fifth, direct empirical evidence casts doubt upon the idea that an ideal diet contains large amounts of animal protein. As already discussed, a large amount of nutritional science shows that plant-based diets, when appropriately planned, can meet humans’ nutritional needs and furthermore that plant-based diets offer benefits as compared to omnivorous diets concerning cardiovascular disease, body mass index, type 2 diabetes, certain types of cancer, and all-cause mortality (American Dietetic Association 2009; Fraser 2009). These comparative benefits appear also to apply to low-carbohydrate plant-based diets versus low-carbohydrate omnivorous diets (Knight 2011).

Sixth, the underlying logic of Paleolithic nutrition may involve some fallacies. It is not unreasonable to think that the ideal human diet will depend on the nature and limitations of our physiology and furthermore that the nature and limitations of our physiology will in turn depend on the environmental context in which we evolved. However, proponents of Paleolithic nutrition often talk of the diet that humans were “designed” or “meant” to eat (see, e.g., Cordain 2002). This argument seems to confuse evolution with teleology. Evolution does not work towards ideal ends. Certain phenotypic traits and behaviors will be more conducive to survival and reproduction than others, but an organism may survive and reproduce without flourishing; and what is conducive or necessary to survival and reproduction will change with context.

Notwithstanding associated risks, animal protein can be a good source of both macro- and micronutrients, and in an ancestral environment where certain micronutrients such as vitamin B-12 or polyunsaturated fatty acids (PUFAs) were not abundant, animal protein may have helped to protect against risks of nutrient deficiency or poor cognitive development (Finch and Stanford 2004). However, the fact that animal protein is a good source of nutrition in an environment of relative nutrient scarcity does not mean that it is a necessary or ideal source of nutrition in an environment where key nutrients are otherwise obtainable.

The so-called meat-adaptive genes also highlight the importance of environment in determining adaptive value. Meat consumption in the ancestral environment posed risks of infectious disease and hypercholesterolemia. Some evolutionary biologists have proposed that humans evolved certain genes, such as the genes encoding Lipoproteins and Apolipoproteins, to better deal with these risks. For example, the *ApoE4* allele increases inflammatory responses and is thought to have been protective against infectious food-borne illnesses. However, this gene also predisposes persons to certain degenerative diseases later in life, including Alzheimer’s disease and cardiovascular disease (Finch and Stanford 2004). Because the average human lifespan in

the ancestral environment was much shorter than we presently enjoy in developed countries, such predispositions to degenerative disease would not have been a significant issue in the ancestral environment, though they are certainly an issue now. Furthermore, now that we have easier means of controlling food-borne illness (through safer production and knowledge about appropriate preparation and cooking), the benefit that ApoE4 provided in the ancestral environment no longer seems as relevant.

Other versions of these genes, which evolved later, are thought to have promoted humans' development of larger cranial capacity and longer lifespan than other species, by enabling the more efficient binding and transport of animal fats (Finch and Stanford 2004). Some commentators who highlight the importance of animal source foods in the human diet point to their "very important role in the evolution of our species" (Popkin 2009). However, the fact that animal source foods played an important role in human evolution, even if accepted as true, does not imply that the consumption of animal products is nutritionally ideal *now*. The genetic adaptations in question have already evolved – humans already have these genes, regardless of what dietary pattern they follow – and furthermore, humans cannot direct their own evolution. There is no reason to expect that the continued consumption of large amounts of animal protein will somehow result in further adaptations that are beneficial to human health or development.

Acceptable Risk and Risk-Potential Benefit Judgments

Though the assessment of nutritional risk associated with plant-based diets may involve contestable value judgments, it is nevertheless true that plant-based diets are associated with *some* risks. Since plant-based diets are also associated with potential benefits as compared to omnivorous diets, i.e., since omnivorous diets are also associated with risks, an ultimate judgment of nutritional adequacy or favorability for each dietary pattern must take into account both risks and

potential benefits. These risks and potential benefits should be assessed without bias, but even when bias is absent the resulting judgments are still evaluative in the sense of involving prudential judgments about the goodness or badness of certain outcomes, the magnitude of respective risks and potential benefits, and thresholds for when risks should be considered acceptable. The questions of when dietary risks are acceptable, or when potential benefit outweighs risk, are beyond the scope of this entry. However, it should be emphasized that establishing that plant-based diets carry certain risks shows neither that such diets are not nutritionally adequate nor that plant-based diets are adequate but compare unfavorably to omnivorous diets. Given that appropriately planned plant-based diets can meet all nutritional needs *and* that such diets show health benefits as compared to omnivorous diets, it might be asserted that appropriately planned plant-based diets have a favorable risk-potential benefit profile as compared to appropriately planned omnivorous diets in the ideal.

However, this conclusion may be premature, since the omnivorous diets used in comparisons may need to be differentiated more in terms of the type and amount of animal products consumed. Furthermore, as concerns certain risks and benefits, additional data will prove helpful, e.g., as concerns the relationship between ferritin and cardiovascular disease or the significance of low serum ferritin. Moreover, it may be useful to assess not only the comparative risk-benefit profile of adequately planned diets but also the risk-benefit profile of plant-based and omnivorous diets as they tend to be consumed in less than ideal circumstances. At present, these are open questions.

Summary

Discussions about the nutritional adequacy of plant-based diets often seem to presuppose certain framing assumptions or value judgments. These concern the following: (1) the level of scrutiny of the risks of plant-based diets as compared to the risks of omnivorous diets; (2) framing assumptions in the way plant-based diets are

defined; (3) value judgments in the way dietary risk is defined, for example, as concerns bioavailability, serum biochemical markers, or relative versus absolute risk; (4) value judgments about what is natural being good, or about the ideal nature of ancestral dietary patterns; and (5) value judgments about acceptable risk and overall risk-potential benefit profiles. It is important to be aware of these value judgments, since they condition the nutritional assessment of plant-based diets. Furthermore, the discussion here suggests that in many cases, value judgments or framing assumptions involved in the nutritional assessment of plant-based diets may be contestable and may explicitly or implicitly give the impression that such diets are riskier than they actually are.

Cross-References

- [Carnism](#)
- [Meat: Ethical Considerations](#)
- [Vegetarianism](#)

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Plato and Food

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Synonyms

Gluttony; Hedonic calculus; Socratic ethics;
Temperance; Tripartite soul

Introduction

Plato (429–347 BC) is one of the greatest literary and philosophic minds of the Western intellectual

tradition. His wide-ranging philosophic legacy includes foundational contributions to the fields of ethics, psychology, political science, aesthetics, educational theory, epistemology, and metaphysics. In an often-quoted statement regarding his philosophic significance, Alfred North Whitehead writes, “The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato.” In light of Whitehead’s claim, one should expect that there are significant contributions to the newly emerging field of the philosophy of food to be found in Plato’s writings. A summary of these contributions, which will be discussed in this entry, includes the problem of gluttony and the correlate virtue of moderation, the diet of the ideal city, and the harmonious order of the three parts of the soul (appetitive, spirited, and rational).

Interpreting Plato’s Work

Plato’s unique writing style presents the reader with some of the most engaging works in the history of philosophy, as well as some of the most difficult to interpret. His surviving works include 36 dialogues and 13 letters. There is ongoing scholarly debate whether some of these (especially the letters) may be erroneously attributed to him; that said, scholars are in general agreement about a core list of dialogues as being authentic in light of their stylistic and substantive consistency. The discussion that follows will primarily be focused on Plato’s *Republic*, *Gorgias*, and *Protagoras* though there are relevant ideas regarding food ethics that run throughout his works. In particular, the dialogue *Charmides* is especially relevant insofar as it is devoted to an investigation of the virtue of moderation. The references to Plato’s works in this entry, as well as in most translations and secondary works about Plato, will be to the Stephanus line numbers rather than to page numbers to facilitate finding a precise passage across different editions.

Unlike other intellectual figures, Plato presents his ideas in dramatic dialogues, whose

literary form poses several problems in their interpretation (see Klein (1965) and Rutherford (2000) for a full account of what is entailed in interpreting Plato dramatically). Some of the problems inherent in interpreting the Platonic dialogue include situating arguments within the dramatic context, interpreting the use of literary devices (irony, character types, myth, and allegory), and assessing the ultimate status of provisional arguments that are either affirmed or rejected in the course of the dialogue. The tendency of older Platonic scholarship was to disregard the literary aspect of the dialogue in order to distill definitive arguments that could be attributed to Plato. In a provocative passage from one of the more trustworthy letters, Plato cautions against this tendency: “No treatise by Plato exists or will exist, but those which now bear his name belong to a Socrates become fair and young” (Plato 1929, 2.314c). Plato is suggesting that if there is a philosophy to be attributed to him, one should pay careful attention to the argument proffered by Socrates; however, there remain several problems with either positing that Plato is simply writing down the ideas of his teacher or that the Socrates who appears in the dialogues is Plato’s mouthpiece. Since Socrates wrote nothing, it is impossible to untangle his ideas from those advanced by Plato, though the artistry and philosophic rigor of the Platonic dialogues attest to Plato being more than a disciple of his teacher regardless of the extent to which he was influenced by him. Although Socrates is the principle and most convincing speaker in the majority of the dialogues, several of Plato’s most important dialogues (*Sophist*, *Statesman*, and *Laws*) feature principle speakers other than Socrates. Additionally, one must consider the philosophic merits of the arguments proffered by the interlocutors even if these are on the surface rejected. Recent Platonic scholarship has become more sensitive to interpreting his ideas in light of these dramatic and literary concerns. This caution is particularly valuable in an area of inquiry like the philosophy of food that attempts to formulate Plato’s contributions to this narrow subject divorced from the larger philosophic project. In this entry, arguments will be attributed to the

specific character (Socrates, Callicles, and Glaucon) who forwards them and will only be attributed to Plato when it is warranted by the dialogue read as a whole.

The Problem of Gluttony

While modern culture may regard gluttony merely as a health issue, Plato treats the malady as a central concern throughout his works with widespread implications for his ideas on ethics, psychology, and epistemology. For Plato, individuals whose souls are primarily directed to appeasing their appetites for food, drink, and other bodily pleasures suffer from disordered souls that are incapable of apprehending truth as illuminated by the good and thus are hindered from realizing their own best interests. The problem is epitomized in the famous cave allegory from the *Republic*. Plato’s Socrates offers a ruthless diagnosis of the human condition through an analogy to prisoners unaware of their own enslavement: “Picture men dwelling in a sort of subterranean cavern with a long entrance open to the light on its entire width. Conceive them as having their legs and necks fettered from childhood, so that they remain in the same spot, able to look forward only, and prevented by the fetters from turning their heads” (Plato 1969, p. 514a–b). Just after recounting the story, Socrates provides an interpretation of the symbolism of the chains that bind the prisoner:

Observe then that this part of such a soul, if it had been hammered from childhood, and had thus been struck free of the leaden weights, so to speak, of our birth and becoming, which attaching themselves to it by food and similar pleasures and gluttonies turn downwards the vision of the soul—If, I say, freed from these, it had suffered a conversion towards the things that are real and true, that same faculty of the same men would have been most keen in its vision of the higher things, just as it is for the things toward which it is now turned. (Plato 1969, p. 519a–b)

The following conclusions (which will subsequently be discussed) can be drawn from this passage: (1) Plato considers gluttony or intemperance to be such a pervasive condition that it

typifies most men's souls, (2) the overweening desire for pleasure prevents individuals from apprehending the rational world of ideas, and (3) there is a complementary passion for knowledge that is accessible to an individual that is able to master his or her appetites for bodily pleasure.

Why would Plato believe that the problem of intemperance is so pervasive as is suggested by the cave allegory when modern psychology regards the food, drug, or sex addict as manifesting extreme behaviors rather than the norm? Although the representation of the gluttons as chained prisoners suggests that the individual is largely passive in the acculturation process by which this psychological disposition has been habituated, Plato affirms that people are rational creatures who intentionally pursue what they believe to be in their best interests. The glutton is thus not intentionally engaging in self-destructive behavior, since as Socrates affirms in *Protagoras*: "no one willingly goes after evil or what he thinks to be evil; it is not in human nature" [...] (Plato 1924, p. 358c–d). If people are rationally seeking their own good, then why would gluttons or other kinds of addicts indulge their appetites to the point of endangering their health?

Since Plato assumes that humans are rational creatures, he concludes that self-destructive behavior must arise out of a misperception of the effects of these actions. Most people, in fact, are mistaken about their best interest by overvaluing the pleasure they will derive from immediate gratification without regarding the long-term consequences of their actions. Socrates proposes in *Protagoras* that this problem could be rectified if individuals employed a more objective system for reckoning pleasures and pains than what seems good in the moment:

Is it not the latter [appearances] that leads us astray, as we saw, and many a time causes us to take things topsy-turvy and to have to change our minds both in our conduct and in our choice of great or small? Whereas the art of measurement would have made this appearance ineffective, and by showing us the truth would have brought our soul into the repose of abiding by the truth, and so would have saved our life. (Plato 1924, p. 356d–e)

Socrates' idea of employing an objective system to weigh the long-term costs and benefits of a desire shows the obvious flaw in the glutton's rationale. Since individuals innately seek their own good, they would not value the immediate pleasure they derive from something if they were able to weigh this against its potentially fatal side effects. Socrates illustrates the point in *Hipparchus* by noting that a dinner of poison, no matter how delectable it may be, is not nourishment: Do you include [as an example of profiting from something] a case where, after enjoying a banquet at which one has had much good cheer without any expense, one acquires an illness? (Plato 1927, p. 231b). Although people believe that they are the best judge of themselves, Socrates argues in several passages that people would need the knowledge of a physician to know with certainty that a food was actually nutritious (Plato 1924, p. 313d; Plato 1925, p. 464d).

Although Plato explains gluttony as resulting from ignorance, he recognizes the rationale that overindulgent individuals employ to justify their lifestyles. In the dialogue *Gorgias*, Callicles argues that the man who is able to satisfy his desires is far from a slavish couch potato – an exemplar of manly virtue and more self-actualized than the common man: "natural fairness and justice, I tell you now quite frankly, is this – that he who would live rightly should let his desires be as strong as possible and not chasten them, and should be able to minister to them when they are at their height by reason of his manliness and intelligence, and satisfy each appetite in turn with what it desires" (Plato 1925, pp. 491e–492a). Callicles goes on to claim that temperance is only promoted as a virtue by those weak individuals who are without the resources and power to fulfill their desires (Plato 1925, p. 492a–b). Nobody would, according to Callicles, restrict his or her desires when he or she had the ability to indulge them without restraint.

Socrates attempts to discredit Callicles' ennobling of the unbridled pursuit of pleasure by arguing that hedonists' insatiable desires actually cause them more pain than individuals who are able to satiate their desires. In a poetic image in

which the various desires are compared to different liquids which the individual is burdened with the task of filling up in their respective jars, Socrates contrasts the temperate individual with the gluttonous and licentious: “One man, when he has taken his fill, neither draws off any more nor troubles himself a jot, but remains at ease on that score; whilst the other finds, like his fellow, that the sources are possible indeed, though difficult, but his vessels are leaky and decayed, and he is compelled to fill them constantly, all night and day, or else suffer extreme distress” (Plato 1925, pp. 493e–494a). Although Callicles retorts that individuals who are constantly filling their jars will derive greater pleasure through the continuous activity of inflow, Socrates notes that this sense of pleasure is only achieved by the simultaneous feelings of pain caused by the deprived state of hunger or thirst: “you say one enjoys oneself, though in pain at the same moment, when you say one drinks when one is thirsty?” (Plato 1925, p. 496e). In a similar discussion in *Republic*, Socrates clarifies that the pleasures and pains associated with the appetites are only a result of their oscillation from the opposing state; consumption of food regardless how delectable it may be is not as pleasurable when one is not hungry. He then contrasts the ephemeral quality of bodily pleasure with the pleasures to be derived from filling the soul with unwavering knowledge: “If, then, to be filled with what befits nature is pleasure, then that which is more really filled with real things would more really and truly cause us to enjoy a true pleasure, while that which partakes of the less truly existent would be less truly and surely filled and would partake of a less trustworthy and less true pleasure” (Plato 1969, p. 585d–e). In several passages, Socrates attempts to redirect the desire for bodily pleasure into a desire for learning and truth.

Socrates’ most ruthless condemnation of the glutton comes in his examination of the individual who is diagnosed as suffering from a tyrannical disposition of the soul. In the previously examined passages, gluttonous individuals are considered only insofar as they torture their own souls by engaging in a ceaseless pursuit of desire. In contrast, the over indulgence in food

and drink in tyrannical souls acts as a gateway to their complete disregard for all decency in an unabandoned pursuit of illicit activities:

When under the tyranny of his ruling passion, he is continuously and in waking hours what he rarely became in sleep, and he will refrain from no atrocity of murder nor from any food or deed, but the passion that dwells in him as a tyrant will live in utmost anarchy and lawlessness, and, since it is itself sole autocrat, will urge the polity, so to speak, of him in whom it dwells to dare anything and everything in order to find support for himself and the hubbub of his henchmen, in part introduced from outside by evil associations, and in part released and liberated within by the same habits of life as his. (Plato 1969, pp. 574e–575a)

Although this might at first seem to be an extreme description of an individual who is as depraved as the one described by Socrates, Plato is actually providing a subtle understanding of how addiction afflicts the soul in such a manner as to subvert all respect for common decency.

The Diet in the Ideal City

In the previous section, Plato’s treatment of the psychological and ethical implications of the vice of gluttony was examined. The core argument of Plato’s *Republic* will now be examined to understand the complementary virtues of temperance and justice. Since the inner workings of the soul resist direct apprehension, Socrates proposes that he and his discussion partners investigate the order and disorder of various political regimes under the notion that an individual and a state are similarly constituted. The subtleties of normal and abnormal psychology are thus made manifest by comparison with an ideal regime and several deviant regimes that correspond to different psychological types. The diet of the citizens in the various regimes that are proposed will turn out to be a crucial part of the overall discussion.

Socrates begins his project of political theorizing by imagining a city that is devised solely to satisfy the conditions of utmost necessity. He designates this city as healthy since the citizens in it will only consume those goods that are necessary to preserve their lives. With particular

focus on their diet, Socrates describes the healthy city in the following manner:

First of all, then, let us consider what will be the manner of life of men thus provided. Will they not make bread and wine and garments and shoes? And they will build themselves houses and carry on their work in summer for the most part unclad and unshod and in winter clothed and shod sufficiently? And for their nourishment they will provide meal from their barley and flour from their wheat, and kneading and cooking these they will serve noble cakes and loaves on some arrangement of reeds or clean leaves, and, reclined on rustic beds strewn with bryony and myrtle, they will feast with their children, drinking of their wine thereto, garlanded and singing hymns to the gods in pleasant fellowship, not begetting offspring beyond their means lest they fall into poverty or war? (Plato 1969, p. 372a–c)

As Socrates notes at 373c, this first city is completely vegetarian (Dombrowski 1984). In one of the most famous lines of the entire dialogue, Glaucon vigorously protests against the diet that Socrates proposes for the city as being too bland: “No relishes apparently, for the men you describe as feasting” (Plato 1969, p. 372c). Socrates ironically responds to Glaucon’s demand for more appetizing and indulgent cuisine with relishes and desserts that are just as nutritious as the city’s staple diet of barley cakes:

I forgot that they will also have relishes—salt, of course, and olives and cheese and onions and greens, the sort of things they boil in the country, they will boil up together. But for dessert we will serve them figs and chickpeas and beans, and they will toast myrtle-berries and acorns before the fire, washing them down with moderate potations and so, living in peace and health, they will probably die in old age and hand on a like life to their offspring. (Plato 1969, p. 372c–d)

Interestingly, Socrates seems not only to identify the citizens’ diet as being responsible for their physical health but also the city’s political stability.

Socrates refers to this first city as healthy and true; however, its ultimate significance in the argument is disputed by both readers and scholars alike. Many find in the description a Utopian ideal of individuals living in harmony with nature and cooperatively sharing in a mutually beneficial community in which all the citizens’ needs

are met even if this be at a minimal standard of living. McKeen (2004) notes that this sort of harmonious living without any formal political institutions is an impossible ideal. In contrast, Bloom (1991, p. 346) notes that the absence of philosophy from the city makes it ultimately undesirable as a Platonic ideal. Finally, Reeve (1988, pp. 176–178) notes that the city does not share its consumables in the manner of a family or a commune but rather is an association of self-interested moneymakers who exchange their wares in the marketplace solely for their own advantage.

Glaucon certainly does not regard the healthy city to be any sort of ideal (Bloom 1991, p. 346; Burnyeat 1999). He is not in the least humored by Socrates supplementing their diet with nutritious desserts and denounces the entire city on account of its cuisine as beneath what is fitting for humans: “If you were founding a city of pigs, Socrates, what other fodder than this would you provide?” (Plato 1969, p. 372d). Like Callicles, Glaucon identifies consumables as signifiers of one’s social status and thus is genuinely offended that a city that is supposed to exemplify virtue would have its citizens eating nuts and berries while lying in a pile of leaves. His original request for relishes is really the demand for the comforts of civilized living: “They must recline on couches, I presume, if they are not to be uncomfortable, and dine from tables and have made dishes and sweetmeats such as are now in use” (Plato 1969, p. 372d–e). This time Socrates does indulge Glaucon’s request as he introduces luxuries into the first city that transform it into a second regime known as the feverish city: “For there are some, it appears, who will not be contented with this sort of fare or with this way of life; but couches will have to be added thereto and tables and other furniture, yes, and relishes and myrrh and incense and girls and cakes—all sorts of all of them” (Plato 1969, p. 373a). Recognizing that desire without restraint will be insatiable, Socrates continues to introduce more and more luxury goods into the feverish city culminating in the declaration that they will now need physicians to attend to the diseases that will inevitably arise from the city’s unhealthy diet and, even

more troubling, they will now need warriors to wage war on their neighbors in order to pillage their neighbor's resources and expand their own borders (Plato 1969, p. 373d–e).

The introduction of the warrior class and their ultimate assumption of a ruling position within the city will transform the feverish city into a third regime, which represents the ideal for which Socrates was seeking. Socrates establishes order within this city by enacting a three-class structure consisting of rulers, auxiliaries, and craftsmen that each has a role in contributing to the overall harmony of the city. The immoderate and insatiable citizens of the feverish city will now be restrained by laws that are imposed by the philosopher-kings and enforced by the spirited auxiliaries. This three-class structure reveals the analogous three parts of the soul: "One part, we say, is that with which a man learns, one is that with which he feels anger. But the third part, owing to its manifold forms, we could not easily designate by any one distinctive name, but gave it the name of its chief and strongest element; for we called it the appetitive part because of the intensity of its appetites concerned with food and drink and love and their accompaniments, and likewise the money-loving part, because money is the chief instrument for the gratification of such desires" (Plato 1969, pp. 580e–581a). As was evident in the feverish city, the appetites are incapable of discerning one's best interest since they know no restraint and only seek to pursue additional pleasure. This condition allows individuals to be easily seduced in choosing the culinary artist's delicacies even when they are in need of the physician's medicine. Internal harmony is only achieved when individuals are able to regulate their appetites by the rule of reason aided by the spirited faculty (Plato 1969, pp. 443d–444e).

Although the healthy city's vegetarian diet and moderate lifestyle may, at first glance, seem to be the most appealing regime presented in the *Republic*, especially when compared with the immoderate and bellicose feverish city, the true order of the soul only is revealed by the third regime in which the unhealthy excesses of the second regimes are purged.

Summary

As may be seen in this entry, the vice of gluttony and its complementary virtue of temperance are featured prominently in Plato's writings. Individuals that are afflicted by gluttony not only suffer physical harm as a result of their diets and lifestyles but also from a psychic disorder that is further responsible for instigating illicit behaviors and ultimately a complete disregard for all ethical standards. As long as the individual remains afflicted by a gluttonous soul, he or she is prevented from apprehending the true reality and thus hindered from realizing his or her own best interest. Although Plato considers the physical, psychological, and ethical merits of a vegetarian diet, he ultimately endorses the city that is ruled by philosopher-kings and not the healthy city as his ideal polity. Moreover, it is through the class structure of this third regime that the three parts of the soul are revealed. Just as the city achieves justice and moderation through the rule of reason, so too will the individual achieve psychic harmony when his or her reasoning faculty rules over his or her appetites with the aid of the spirited part. In the final analysis, Plato is a harsh critic of the ill effects of immoderation; however, rather than simply restraining desire, he seeks to redirect it to a salutary passion for the love of wisdom.

Cross-References

- ▶ [Asian Cuisine: Ethical Considerations](#)
- ▶ [Food Addiction](#)
- ▶ [Gluttony](#)
- ▶ [Gustatory Pleasure and Food](#)
- ▶ [Vegetarianism](#)
- ▶ [Virtue Theory, Food, and Agriculture](#)

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Political Agronomy

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Synonyms

Agricultural research; Conservation agriculture; Contested agronomy; Political ecology; System of rice intensification

Introduction

Agronomy, in the Anglophone tradition, is usually understood as the application to crop production of knowledge and technology developed from the plant and soil sciences. Through both formal and informal research and practice, new agronomic knowledge and technology are

created that can be used to address “technical” problems within existing production systems, develop new systems, and/or to further specific social, political, economic, technical, and/or commercial objectives. Any aspect of this process may be contested, from the identification of a problem or the configuration and performance of a new technology or system through to the vision (implicit or explicit) of a desirable future world that underpins it. With **politics** understood broadly as social relations involving authority or power, the term **political agronomy** refers to the study of relationships and processes which link political, economic, and social forces and factors to the creation and use of agronomic knowledge and technology. Political agronomy studies differ from other studies of agricultural science and technical change within agriculture by problematizing the creation and use of agronomic knowledge and technology in terms of asymmetric power relations, contestation, and struggle. Used in this way, political agronomy relates to and draws from the fields of science and technology studies (STS) (Sismondo 2012) and political ecology (Robbins 2011).

Following Sumberg et al. (2012b), while the creation and use of agronomic knowledge and technology are by their very nature “political,” beginning in the mid-1970s, what had been a relatively stable context for agronomy and agronomists began to change. Over the course of the following three decades, this context changed dramatically, making the political nature of agronomy more apparent. The new context for agronomic research can be understood in terms of change in three closely related elements: society (changing ideology, new roles, new actors, new spaces), agriculture and the associated food economy (increasing scale, global consolidation, new systems of regulation), and agricultural science (new foci, new tools, change in where and by whom it is carried out and who it is funded by). For much of the twentieth century in Europe and North America, agronomy functioned as a technical discipline focused on the critically important but largely practical matter of improving crop production. In this context, but particularly following the growth of state planning and

economic management in the 1930s, politics around agronomy and agronomic research was dominated by the state, which set policy priorities, funded research, and promoted the uptake of resulting technologies. With the state as “principal” and research agronomists in universities and state-funded institutions as “agents,” there was a strong unity of purpose, with modernization at its core, between the state, the discipline of agronomy, and farming communities. This unity of purpose and the practical, problem-solving orientation of agronomy meant that as a discipline it experienced little of the heated debate that shook some other academic fields to their cores (cf. Harwood 2013). However, the position of agronomy began to change with the rise of the neoliberal agenda and emergence of the environmental and participation movements in the 1970s.

A faith in the role of “free markets” and a desire to “shrink the state,” combined with new intellectual property regimes and emergent biotechnologies, opened the way for a much expanded role for private capital in agricultural research and technology development and promotion. At about the same time, in some quarters, there was increasing concern about the environmental impacts of modern farming practices, while in others, the notion gained ground that in the developing world, poor farmers were not benefiting from – or were even being harmed by – new agricultural technology, leading to calls for more “participatory” and empowering approaches to research. Taken together, these changes represented a fundamental shift in the context within which agronomic research was prioritized, funded, managed, implemented, and evaluated. With agronomists still acting as agents (although now working in a wider array of organizational and institutional settings), the principals had become more numerous and their institutional imperatives, agendas, and motivations more diverse. An unintended consequence of this restructuring of agronomic research has been the opening up of new spaces for contestation both within the discipline and about the knowledge and technology it produces. While these changes and their effects have been evident

to varying degrees in different settings, there is enough of a common thread to warrant systematic study. Active and wide-ranging intradisciplinary and interdisciplinary debate and public contestation and activism around agricultural technology have coincided with renewed concern about the ability of agriculture to deliver both global food security and natural resource sustainability. Political agronomy studies are more relevant now than ever.

Scholarship on agriculture and food policy contains an important strand that explores the political economy aspects of agricultural research in specific national contexts and in relation to specific crops, technologies, and global research initiatives such as the centers of the Consultative Group on International Agricultural Research (CGIAR). Political agronomy draws from this literature but highlights both the rapidly changing social, economic, and technological contexts within which agronomic research takes place and the fact that these changing contexts have significantly reduced the state’s ability to use traditional policy instruments to affect the direction and rate of technical change within agriculture. Thus it is the changing political economies of agronomic research, their interaction and coevolution over time and space, and the associated debates, contestations, and struggles that “frame” political agronomy analysis. From a political agronomy perspective, the questions of interest relate to the drivers of processes of framing and reframing; the actors and relationships involved; and the impacts of different framings and narratives on the conception, practice, and presentation of agronomic research and what it can deliver.

In the remainder of this entry, this argument is developed using examples of knowledge and technology developed through agronomic research.

Knowledge and Technology at the Center of Political Agronomy

Political agronomy analysis necessarily focuses on and revolves around efforts to generate and

promote the use of new agronomic knowledge and technology. While any number of different schemes could be used to classify research, innovation, and technical change within agriculture, cases of technology generation can be assigned to two main groups. The first, encompassing perhaps the bulk of “everyday agronomic research,” includes the countless examples of incremental innovation, each meant to address a specific “technical” problem within a given production system or context or to provide the user (“farmer/producer”) with some marginal advantage. New crop varieties, new pest control products or strategies, and new fertilizer application rates or methods might typify this kind of incremental innovation. By definition, there is little that is radical in these examples: rather, they are about maintaining, stabilizing, or incrementally improving existing systems. In agricultural economies where innovation is largely in the hands of private sector actors (e.g., seed, chemical and fertilizer companies), the dynamic of incremental innovation is driven in large part by a desire to maintain or increase market share and profit margins. Contestation around examples in this first group tends to be limited; focused on technical performance, benefit-cost, etc.; and has limited public profile.

In contrast, in the second group are examples of the generation and promotion of agronomic knowledge and technology that are more radical and transformative. Here the direction of agronomic research is set by an objective of transforming the social, political, economic, technical, and/or commercial orders and is underpinned by both an analysis of “problems” or “constraints” and a vision of a desirable future which might encompass either a continuation of existing trends toward increasingly mechanized farming or a radical break toward smaller-scale “postindustrial” agriculture (Woodhouse 2010). Examples in this transformational group include the agronomic research that facilitated the mechanization of the California horticulture industry (Hightower 1972), the Green Revolution approach to the modernization of smallholder farming, the organic and agroecological farming movements, and the Millennium Villages

Political Agronomy, Table 1 Domains and areas of contestation

Domain	Areas of contestation
Environment	Biodiversity
	Water use/quality
	Carbon emissions
	Soil fertility/soil health
Economic/social	Productivity
	Labor
	Gender
	Poverty
	Health
	Equity
	Food security
Political	Agrarian structure
	Power/control
	Scale
System	Integration
	Resilience
	Robustness
	Stability
	Sustainability

Source: Authors' own compilation

program and the Sasakawa Global 2000 program in Africa. In these examples, agronomic research is used as a direct instrument of either government policy or the interests of other powerful (and sometimes less powerful) actors. The research agronomist may still work on varieties, fertilizer, soil management, etc. but perhaps even less constrained by the “real-world” limits faced by the current population of farmers. With examples in the second group, the potential for contestation is greater, including the analysis of the problem, its causes, and associated outcomes; the vision of the future agrarian society they are seeking to create, including expectations of who wins and who loses from the proposed change; the technical performance of the new technology or system; and the issues associated with the other policies, measures, and institutions needed to support it. Contestation and public activism may coalesce around a number of social, political, economic, and environmental concerns (Table 1), many of which are outside the traditional disciplinary bounds of agronomy. For example, the protracted debates about the poverty, labor, and

equity effects of the Green Revolution in Asia in the 1970s and 1980s primarily involved social scientists and economists (Orr 2012), not agronomists or plant breeders, and had little profile in mainstream agronomy journals. In contrast, recent debates about GM varieties, conservation agriculture (CA), and the System of Rice Intensification (SRI) are much more in evidence in these same agronomy journals.

Both incremental and transformative innovation may be associated with unforeseen and unintended consequences, and both the possibility and reality of these may change the focus, nature, and/or intensity of contestation. This highlights the interplay of different understandings of and approaches to risk, uncertainty, and ambiguity in the politics around agricultural technology and the associated dynamics of contestation. Debates and activism around the potential effects of GM crop varieties on human health and weed populations illustrate how these different understandings can be used tactically to affect both the public mood and regulatory outcomes.

Another widely used tactic in contestation around agricultural technology involves framing and reframing, based on the observation that in some situations, small changes “in the presentation of an issue or an event produce (sometimes large) changes of opinion” (Chong and Druckman 2007, p.104). For example, a technology such as GM crop varieties can be framed as an incremental innovation (simply the latest in a long line of improved varieties) or as “technology for the poor” (Glover 2010) or be reframed as a transformative technology in either a positive (allowing significant reductions in pesticide application or improved nutrient content through “biofortification”) or negative (facilitating even greater concentration of corporate control over key agricultural and biological resources) sense. Similarly, an apparently innocuous incremental innovation can be reframed as a shortsighted “technical fix” because it neither acknowledges nor addresses what the reframer considers the underlying structural issue, while potentially transformative innovations such as organic agriculture are reframed as idealistic and impractical.

Closely related to the question of framing is another important dimension of the new politics of agronomic research and technology in the developing world – the heightened imperative to demonstrate impact and “value for money.” This imperative operates at many levels, from the individual research agronomist, program, and institute through to the research funding agencies (public, charitable, or private), development ministries, and so on. In addition, agricultural development actors, from local community groups and district-level extension services through to international NGOs and UN agencies, are under increasing pressure to justify their continued funding by demonstrating the success of their actions. The multiple and overlapping levels at which agronomists work, from experimental plots and farmer’s field to production systems and landscape, provide fertile ground for this element of the new politics of agronomic research. The stakes can be quickly raised – from “promising results” to the promise (or claim) of “impact at scale” – during which situated agronomic knowledge and technology become progressively “silvered” into the next universal technology bullet. The Internet and other media that are less constrained by the ethos of peer review are critical to the dynamic of “success making,” the act of proclaiming a particular project, program, innovation, technology, policy, or organization a success in a way that may shelter the claim from normal scrutiny and critical evaluation (Sumberg et al. 2012a).

To summarize, the building blocks of political agronomy analysis emerge from addressing questions in four related domains:

The agronomic problem being addressed: How is it framed, at what scale, and by whom? How high a priority is it, for whom, and in what situations? How are risk, uncertainty, and ambiguity understood and addressed, and by whom?

The agronomic solution being proposed: How is it framed, at what scale, and by whom? How effective it is, by what criteria, at what cost, for whom, and in what situations? What benefits does it generate, for whom, and in what

situations? How are risk, uncertainty, and ambiguity understood and addressed, and by whom?

The socioeconomic problem being addressed:

How is it framed, at what scale, and by whom? How high a priority is it, for whom, and in what situations? How are risk, uncertainty, and ambiguity understood and addressed, and by whom?

The socioeconomic solution being proposed:

How is it framed, at what scale, and by whom? How effective it is, by what criteria, at what cost, for whom, and in what situations? What benefits does it generate, for whom, and in what situations? How are risk, uncertainty, and ambiguity understood and addressed, and by whom?

These questions situate political agronomy studies firmly in time and space and in a social, political, and economic context, all of which are prerequisites for meaningful analysis of the relationships and processes linking political, economic, and social forces and factors to the creation and use of agronomic knowledge and science and technology.

Contemporary Examples

Three contemporary examples of agronomic technology – conservation agriculture (CA), GM crop varieties, and the System of Rice Intensification (SRI) – help to illustrate many of the elements discussed above. While these technologies have very different origins, address different problems, and are supported by different interest groups and coalitions, they have all been (and continue to be) the subject of heated debate and contestation both within agronomic research circles and beyond.

Conservation Agriculture (CA)

The technology of CA as promoted in the developing world is defined by (i) minimal soil disturbance or tillage, (ii) maintenance of soil cover through crop canopy and mulch, and (iii) crop rotation. Proponents claim that the CA is both productive and profitable and that its practice

brings economic, agronomic, environmental, and social benefits (Kassam and Brammer 2012). Increased levels of soil carbon, improved soil structure and in-soil water conservation are the most often cited agronomic benefits. Contestation focuses around the universality of these claims and the effects of differences in soil type, rainfall regime, farming system, mulch availability, planting method, weed control method, and fertilizer application on the presence, level, and variability of any benefits (Giller et al. 2009). Despite evidence of site and context specificity, the transformative potential of CA as the basis of sustainable, pro-poor agriculture everywhere is heavily promoted. It is framed as a technology that can stimulate increased investment on the part of poor farmers, especially in Africa, and result in much needed productivity gains. CA is increasingly being framed as the prime example of “climate-smart agriculture” (CSA), sustainably increasing productivity and resilience (adaptation) and reducing greenhouse gases (mitigation) while enhancing the achievement of national food security and development goals. The promotion of CA in Zimbabwe, with its links to national politics, the global political economy of development and humanitarian assistance, and Christian faith groups, provides the case for a particularly compelling political agronomy analysis (Andersson and Giller 2012).

GM Varieties

The technical debates surrounding the development and use of agricultural biotechnology, particularly genetically modified (GM) crop varieties, are reminiscent of debates around the Green Revolution. Proponents of GM crops tend to present them as a technical answer to the problem of global hunger, based on promises of increased productivity, lower input costs, and reduced environmental impact (Bruce 2012). The world’s food problem is framed mainly as a matter of supply, the solution to which is GM crops. Critics respond that on the ground GM crops often fail to live up to these promises. Further they raise the specter of crops that can be toxic, allergenic, or less nutritious than their natural counterparts; that can disrupt the

ecosystem through genetic drift to crop and weedy relatives; that can increase rather than reduce pesticide and herbicide use over the long term; and that can lead to herbicide-resistant weeds. Different understandings of evidence, risk, uncertainty, and ambiguity loom large in these debates. One key debate about the transformational potential of GM varieties revolves around their impacts on poverty, hunger, and the livelihoods of poor people. Some advocates have suggested that GM varieties could reinvigorate the stalled Green Revolution, reframed as a “Gene Revolution.” Critics charge that this vision overlooks the vital role that political and economic interests and allied institutions play in shaping the outcomes of technological change (see Glover 2010). In other words, delivering the pro-poor promise of biotechnology requires appropriate regulatory and governance procedures which are often lacking in many countries. Another major front in the contestation around GM varieties relates to the fears on the part of some concerning the dangers of even greater corporate control over key biological and livelihood resources such as seeds, thus linking resistance to GM crops to debates around globalization and “food sovereignty.”

System of Rice Intensification (SRI)

This technology is defined by its supporters to include the transplanting of single, very young, widely spaced seedlings; irrigation using limited amounts of water during the vegetative growth period, sometimes including short periods when the soil is allowed to dry; and careful control of weeds, ideally by disturbing the soil so as to increase aeration (Stoop et al. 2002). Application of substantial quantities of organic fertilizer is encouraged in order to stimulate microbial activity in the soil. Proponents of SRI suggest that it must be understood as a set of “principles” to be adapted to local conditions rather than a fixed technological package. The main lines of contestation have been around the very high yield levels claimed by some proponents, the physiological effects of different soil water regimes (flooding depth and cycles of wetting and drying) on soil and plant physiology, the validity of measurements

of component effects when interactions (synergies) are strong, and the real extent of the differences between SRI and the “best agricultural practices” developed and promoted through formal agricultural research (Glover 2011). The transformational potential of SRI has also been hotly contested in terms of, for example, the rate and extent of adoption by farmers and the power of populist science and “people’s movements” to deliver sustainable productivity gains among small-scale farmers more effectively than formal agricultural research institutions. From a political agronomy perspective, the SRI example turns around the contested nature and meaning of knowledge and evidence and the relevance of the Internet as a new site for mobilization and contestation.

Summary

Over the last 30 years, changes in the context within which agronomic research is prioritized, funded, managed, implemented, and evaluated have altered the nature of contestation about and around agronomic knowledge and technology. Because of the importance of agronomy and agronomic research in supporting productive and sustainable agricultural systems, systematic analysis of the implications of these changes – political agronomy studies – should now be given high priority.

The CA, GM crop variety, and SRI examples highlight an overriding imperative to claim universal applicability and the potential of “impact at scale.” This is at odds with the understanding of agronomy as a problem-oriented, “situated” science and accounts for the competing claims and much of the acrimony generated by these technologies. Can CA, GM varieties, SRI – or any other technology – provide a universally applicable solution to the problems of sustainable agricultural production? Centuries of agronomic knowledge accumulated through both practice and formal research refute any such suggestion. The challenge for political agronomy studies is to analyze the forces that are driving claims to universality, the actors and coalitions that are making and contesting these claims, and the

implications for agricultural producers, consumers, the environment, and the discipline of agronomy itself.

Cross-References

- [Food Security](#)
- [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- [Transgenic Crops](#)

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Political Consumerism: Consumer Choice, Information, and Labeling

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Synonyms

Antibranding; Boycotts; Buycotts; Labeling schemes; Lifestyle change; Problematic nature of political consumerism; Standardization

Introduction: What Is Political Consumerism?

The concept of political consumerism identifies instances when people evaluate and choose producers and products because they want to change ethically, environmentally, or politically objectionable institutional or market practices. Practices within political consumerism are informed

by attitudes and values regarding broad issues of sustainable development that can even include beliefs about the responsibility of different actors involved in production and consumption and the role of government in using the market as an arena for politics (for interesting discussions on this, see Young 2006; Forno and Gunnarson 2010). Political consumerism can be practiced by individuals, civil society groups, and governmental, not-for-profit, and for-profit organizations. In different ways and for different reasons, political consumers understand producers and products as well as consumers and consumption as embedded in a complex social and normative context that has been called the “politics behind products” (Micheletti 2010). Research points to both self-interest (e.g., personal and family health) and other-oriented interests (e.g., climate change, social justice) as important explanations for the rise of political consumerism particularly for individuals and civil society. Governmental and corporate engagement in political consumerism remains understudied.

Four Forms of Political Consumerism

Scholars identify four basic forms of political consumerism that can be studied through different methods and empirical material. Perhaps the oldest form is boycotts (or negative shopping decisions), which are defined as deliberate or conscious choice not to purchase a commodity, brand, or even a good from a particular country. Some boycotts are well-organized activities that mobilize considerable numbers of consumers even cross-nationally into a particular cause. In certain cases, boycotts have a political effect on governmental politics and corporate policy, though it is difficult to find good measures of effectiveness here (for more information on the strategies, success, and effectiveness of boycotts, see Friedman (1999) and Stolle and Micheletti 2013). Examples of influential boycotts are the decade-long Nestlé boycott against marketing infant formula in developing countries, which led to a new international

agreement (Sikkink 1986) and later some corporate change; the green boycotts organized by environmental groups in the 1980s and 1990s that convinced many do-it-yourself and affordable furniture companies in the wood industry (e.g., Home Depot, IKEA) to reconsider how they procured the tropical wood sold in their stores (Cashore et al. 2004); the boycotts of Nike, Gap, and other global garment corporations now leading to certain corporate change and multi-stakeholder initiatives to help solve the labor problems in outsourced manufacturing (Stolle and Micheletti 2013); and the animal activist and green boycotts against McDonalds and Burger King to change their procurement policies on egg and chicken sourcing. Boycotts of South African goods (particularly fruit) were part of the global anti-apartheid movement (Seidman 2003). Today this boycott is a role model for the “Boycott Israel Today,” supported by some trade unions, churches, and countries, which focuses on products from territories occupied by Israel. The European union has even formulated guidelines on this matter (EU 2013; BBC News 2013; Guardian 2013).

Widespread boycotts target well-known and frequently purchased products and offer consumers suggestions about similar goods to replace them. Boycotting is, therefore, reliant on the availability of similar goods considered to be better for various reasons.

Buycott is the term used to identify the practice of deliberate conscious choices (positive shopping decisions) to purchase certain commodities over others, that is, those often considered more environmentally friendly, more ethical, or preferable for other political reasons. Buycotted goods might, for instance, be chosen because they are seen as reflecting better worker treatment (e.g., by shopping at ethical clothing companies or following advice offered by fairtrade labeling), more healthy (e.g., organically labeled food), and generally better for the environment (e.g., ecolabels) (see more in next section).

Discursive political consumerism, the third form, does not directly involve such negative or positive shopping decisions but rather attempts at opinion formation and communicative actions

expressing reflective and critical views held by individuals and/or collectivities on corporate policy, corporate practice, and consumer culture. Good examples here are antibranding and culture jamming, both of which criticize well-known brands and the commercialization of society in humorous ways (e.g., the animal activist Kentucky Fried Cruelty or Murder King campaign targeting the procurement policies of two well-known corporate brands) and performative events (e.g., anti-sweatshop fashion shows) because they illustrate how this form, through innovative measures, seeks to engage consumers, corporations, and political institutions in learning more and thinking reflectively about the politics behind well-known and attractive products (Sandlin 2007).

Lifestyle political consumerism, the final form, is a decision to use one's private life sphere to inform about and attempt to change established production and consumption practices. Its message is that practices in the private sphere have ramifications for politics. Vegans, freegans, and downsizers, for instance, argue that "the personal is the political" and attempt to adapt their lives to their political views on alternative consumption practices. Vegans commit to not consuming animals in any fashion and seek to purchase alternative goods not containing animal ingredients (Cherry 2010). Downsizers "live" their views by wanting and buying less, buying used goods, and choosing green and fairtrade products (Huneke 2005). Freegans are known for diving into dumpsters after food and other goods as part of their alternative food activism that criticizes agribusiness and conventional consumption practices.

The different forms of political consumerism can also be used in tandem, for instance when consumers are asked in holiday campaigning to boycott certain well-known chocolate brands, choose fairtrade or organic labeled chocolate instead (boycott), and send messages to corporate headquarters about their choices (discursive action). Finally, emerging research is showing that social media is increasingly important in innovating political consumerism (e.g., carrotmobs) by facilitating the development of individualized political identification in settings other than the

parliamentary and through social and other networks (cf. Calenda and Meijer 2011).

Surveys conducted in different Western countries and other research find that political consumerism is generally increasing as a practice among individuals, public and private institutions, and civic groups in different countries. But it appears that boycotting has gained most in importance. European survey data (see Stolle and Micheletti 2013) reports particularly high levels of boycotting in the Nordic countries, with boycotting showing some decline. In these surveys Sweden stands out as highest; about 56 % of adult Swedes engage in boycotting and boycotting activities. These rises can be explained by civil society's heightened interest in using marketing campaigning for their cause and government's support for labeling schemes and use in its public procurements. Boycott political consumerism is now part of public procurement policy in many parts of the world and even promoted by major transnational corporations, which now have codes of conduct to help govern their relationships and transactions with their suppliers and sub-suppliers. Special ethical and environmental business initiatives in particularly the food and clothing industries have also appeared. Business interest in political consumerism is explained by the influence of the market campaigns run by various civic groups as well as corporate reasoning that profit, competitive advantage, and goodwill can be gained by contributing to the "boycott market" (for more further discussion see Stolle and Micheletti 2013).

What lies behind the rise in political consumerism is societal concern about safeguarding the environment worldwide, protecting global workers in various industries, and finding innovative strategies to establish new regulatory tools to make transnational corporations more accountable. The rises also reflect citizens' efforts to engage in politics in new ways as well as their more self-interested concerns about finding healthy food and keeping harmful chemicals out of their own lives. Research (see Stolle and Micheletti 2013) finds that people with higher education and more political interest/activity and more women than men exhibit higher levels

of political consumerism. The rich Swedish data (see Stolle and Micheletti 2013), allowing for deeper analysis, shows even that dissatisfaction with governmental performance on issues of the environment, human rights, and the war on poverty mobilize people into political consumerism but that, contrary to some theoretical expectations (e.g., on subpolitics), many political consumers (particularly those 30 years of age and older) have high trust in national representative political institutions. However, what makes political consumers different from “nonpolitical consumers” is that they are prepared to take more active responsibility for seeking explanations for societal developments and especially for showing consideration and concern for others. This final result indicates that political consumers (and especially younger ones) can be distinguished by concerns about nonreciprocal and more global aspects of politics and citizenship. These findings also underscore theoretical expectations that younger political consumers are more subpolitical and adopt a more political individualization orientation in that they seek to contribute to society in ways that better conform to their less state-centered and more private life-oriented world view (for references see www.sustainable-citizenship.com). Researches on environmental, religious, international humanitarian, and animal stewardship groups involved in political consumerism even show that civic groups also increasingly frame their campaigns in this fashion and, interestingly, focus more on the self-interest of consumers in their advocacy (for further information see Stolle and Micheletti 2013 and associated references).

Finally, while the concept of political consumerism is rather new, the four forms have been practiced for centuries. Boycotting and boycotting were, for example, part of the grand antislavery struggle in the 1600–1800s with people mobilized into boycotts of cotton, tea, and sugar whose production involved slave labor and into boycotts of substitute so-called “slave-free” products. Boycotts also played a historic role in conflicts between Arabs and Jews in the Middle East, with scholars discussing them as “boycott wars.” Moreover, important areas of

contemporary political consumerism, including fairtrade, organic food, and socially responsible investments, originated in religious activism from the 1700s and 1800s. Noteworthy is that political consumerism does not necessarily or automatically promote democracy and sustainable development. A telling example is how it became a weapon against Jewish merchants and the Jewish people in Europe in the 1930s and 1940s. This topic deserves much more research attention.

Political Consumerism, Information Systems, and Labeling

Political consumerism is highly reliant on the availability of information and alternative products on sale in the marketplace. In most cases this information and product availability is provided by labeling schemes. In recent decades, ethical and environmental labeling has emerged as a common and well-known way for increasingly mindful or conscious consumers to find “boycott” alternatives in the marketplace. Among the pioneering labeling schemes are the German Blue Angel ecolabel established in 1977 for everyday consumer products, the Nordic ecolabel (the Nordic Swan), the EU Ecolabel (the European ecoflower), and the US Green Seal. Today these schemes cover a broad range of product categories, including household chemicals, paper, paint, beauty care, office equipments, washing machines, toys, textiles, DVD players, computers, furniture, and so on. They also certify service providers such as hotels, restaurants, and cleaning services. Even organic food labeling has a long history, but grew in importance particularly since the 1980s when organic labeling schemes were introduced in a number of countries. Another example is Forest Stewardship Council (FSC), established in 1993 to set standards for sustainable forestry as a way to govern the forestry commons. The FSC label can be found on primarily paper and furniture products and is an important label particularly for institutional consumers. The FSC covers a broad array of social, environmental, and economic aspects

and is often mentioned as a pioneering case because it unites business actors with social and environmental NGOs. For social issues, fairtrade is the most well-known system, aiming at redistributing economic values along the mainstream commodity chain and establishing democratic governance structures for the benefit of small-scale and family-based agriculture in the global South.

Ethical, environmental, and even health labeling has become a commonly used consumer-oriented policy instrument. The Ecolabel Index (www.ecolabelindex.com) as of February 19, 2014 lists 446 labeling schemes, operating in 197 countries and in 25 industry sectors. Some ecolabeling schemes (e.g., the German Angel, Nordic Swan, and EU Ecolabel) cover multiple sectors, while others (e.g., Aquaculture Stewardship Council, Energy Star, Global Organic Textile Standards) are sector specific. Other types of consumer-oriented information tools include shopping guides, red lists, sustainability reporting, and fish wallet cards. Fish wallet cards (information fitting neatly in one's pocketbook) use a "traffic light logic," differentiating between Best, Ok, and Worst/Avoid choices that can be consulted for shopping decisions while also giving consumers the opportunity of retrieving further information about the fish, including recipes and nutritional information from websites. Currently carbon labeling is debated (Upham et al. 2011), with a key issue being if a labeling system should award the most climate-friendly products in relative terms within a product category or if entire product categories with high climate impact (e.g., beef) should be excluded completely.

What is labeling and why is it important? First, labeling is a market-based and consumer-oriented tool, founded on the standardization of principles and prescriptive criteria, and relying on symbolic differentiation (Boström and Klintman 2008; see also Gallestegui 2002; Horne 2009). Producers seeking to use the label for their goods must meet the defined principles and criteria for a fixed period of time and for a given license fee. Labeling relies, at least implicit, on differentiation among products/production in terms of good/bad, friendly/

unfriendly, green/gray, safe/risky, and sustainable/unsustainable. This property of symbolic differentiation is essential for understanding the attractiveness, dynamics, and controversies surrounding labeling schemes.

In some countries, consumer information on products is mandatory, such as declaration of contents (e.g., nutrition, GM contents, country of origin) and danger symbols (on cigarette packages). Mandatory labeling appears, according to Horne (2009), to be more prevalent for specific performance issues such as water- or energy-consuming devices. In the area of labeling most schemes rely on voluntary logic and positive information, however. It is less realistic that business would pay a license fee to the labeling and certification organization and voluntarily publish negative information on product packages.

Given the abundance and wide use of labeling schemes, an increasingly important concern is their credibility. Credibility issues concern, for example, how the labeling process is organized (its relative independence from the so-called first-party interests), the inclusion of relevant expertise and stakeholders view, and that judgment and decisions are based on a carefully selected set of principles and criteria which are generally reviewed and strengthened on a regular basis. The issue of credibility relates to a common distinction between first-party and third-party schemes. While the former refers to self-claims done by the producer or seller, the latter refers to an organized system independent of the producer, usually made up of a hybrid constellation of interests/stakeholders that may include the producer and seller. State actors may take part, either as one stakeholder among others or as the chief principal of the labeling scheme. The International Organization for Standardization [ISO] provides a definition and differentiation of environmental labeling schemes, the so-called 14020 series. ISO distinguishes between *type 1* labels, a multi-attribute label developed by a third party; *type 2* labels, a single-attribute label developed by the producer; and *type 3*, an ecolabel whose awarding is based on a full life-cycle assessment. It is important to remember that *type 3* labels, or any other kind of "environmental product

declaration” scheme, are not labeling in the theoretical sense that emphasize *symbolic differentiation*. It is qualitatively different to disclose details and measures about environmental impact compared with adding the valuation that something can be defined as “good” or “better than.”

Why has labeling become quite widely used? Its simplicity is the simple answer. From a concerned consumer perspective, labeling can be a way to handle the information asymmetry existing between the producer and consumer on the environmental and social performance of production (Gallestegui 2002; Koos 2011). Labels seek and attempt to provide consumers with credible and concise information on these matters and even function as choice editing, that is, framing and narrowing the range of products available for the concerned consumer. The simplicity also has communicative advantages that link well to sustainable marketing efforts among producers and retailers as well as with the campaigning activities of consumer, environmental, and social NGOs. The latter groups also see an advantage in these *type 1* hybrid arrangements (see ISO definitions above) as they provide an organized forum to voice their concern in business matters (see Boström and Klintman 2008 for an extended discussion).

Labeling has had hugely varying market impact in different sectors: strong within the area of food, chemicals, energy (household products), and forest (paper) products and weaker (although growing) within the area of clothing, toys, and cosmetics. These variations concern both demand (harder to make people aware and motivated in relation to some types of products) and supply factors related to technological, organizational, economic, political, and geographical matters. How well labeling functions and whether or not it has a significant market impact varies considerably among countries. Scholars focus on a number of contextual factors to explain these variations, among them are market structures including retailing structures, general income levels, civil society engagement, political cultures, level of state support, and type of trust relations in society (e.g., institutional or family based) (e.g., Cashore et al. 2004; Boström and

Klintman 2008; Sønderskov and Daugbjerg 2011; Koos 2011).

Yet despite these variations, the general trend is growth in the number and scope of labeling schemes. From the consumer perspective, the problem is, however, that the multitude of labeling schemes, including even the presence of all kinds of eco-claims and green nature-like symbols on product packages, has been found to create a so-called “second-order” dilemma. Consumers not only need information about the content of products and which products are “good” or “bad” but also on which information providers (labeling scheme/organization/corporation) are credible and not. The issue of credibility or trust has, therefore, been of central importance in the labeling debate and literature (e.g., Boström and Klintman 2008; Sønderskov and Daugbjerg 2011). The use of “independent” third-party labeling schemes and other arrangements to assure credibility has not resulted in a closure of such debates but rather their accentuation. How are consumers to navigate in this jungle of labels and green symbols? Standardization of credible standardization is one solution. ISEAL Alliance, an umbrella organization of labeling and certification organizations, has established codes of good practice of setting sustainability standards and thereby tries to define and protect what a credible system of labeling consists of. Consumer navigational tools are another, e.g., ecolabel iPhone apps.

In addition to this credibility debate related to the abundance of green marketing and proliferation of “fake” labels, the labeling literature also discusses a number of other challenges associated with the development and functioning of labeling and certification system, including the balancing of input from science with other stakeholder demands (e.g., inclusion of consumer representation); balancing the need of simplicity (concise consumer information) and complexity (taking into account all important sustainability matters and dimensions); considering the entire life-cycle and achieving traceability of raw material and products; the issue of labeling and barriers to trade, barriers to entry, and labeling as a disguised form of protectionism; balancing the need for universal principles and criteria with the

need for sensitivity to local cultures, rules, and ecosystems; challenges in monitoring the compliance of labeling principles and criteria and requiring corrective measures; economies of scale in certification and labeling that result in difficulties for small- and medium-sized enterprises (SMEs) to accept the costs involved in the compliance of criteria (conversion costs, license fee, administrative costs, etc.); and the issue of how to keep a sharp political consumer identity of the labeling programs while facing mainstreaming (market growth) tendencies (examples from Gallestigue 2002; Boström and Klintman 2008; Horne 2009; Koos 2010). More research is necessary of all these challenges.

Summary: The Rise of Political Consumerism in Critical Perspective

Political consumerism in the four presented forms – boycotts, buycotts, discursive, and lifestyle – has risen dramatically as a consumer practice as well as a mechanism to provide information and alternative products and habits globally. Consumer demand has both relied upon the presence of labeling schemes and promoted their further development. Over time political consumerism has become a more mainstream activity. Yet this rise of political consumerism has met with some rather fundamental criticism. Among early supporters, the tendency to advocate boycott and lifestyle political consumerism for self-interest reasons and for mobilizing NGOs to employ emotional arguments is seen as going counter to the historical ideological current that focused on solidarity and the ethics for a small green planet. These critics fear that dedication and commitment to the cause of global solidarity and green living is threatened when it is turned into a shopping event. Even the rapid development of certification and labeling has been criticized for similar reasons. Here the issue is co-optation of the values underlying the labeling initiatives by profit-seeking business. In the wittily entitled article “Unveiling the unveiling,” Guthman (2009) warns that the ethically labeled commodity can result in a kind

of ethical fetishism, because of the many unveiled aspects of the labeling process. Labeling was initially established to reveal the unwanted social and environmental side effects of production and products invisible to consumers so that they could make more informed purchasing decisions. But if such critical side effects also remain in the products symbolically espoused as “good” at the same time as business makes new profits in this new “green” or “social justice” sector, then, she argues, it is valid to claim that consumers are cheated in a double sense. One possible path out of this new dilemma is the very same phenomena that gave rise to much contemporary political consumerism, namely, reflexivity (Boström and Klintman 2008). Here the argument is that even the promoters of political consumerism, including mobilizing NGOs, labeling schemes, and governments, should be more critical and reflective about their own and other actors’ knowledge claims. They will need to consider the consequences of using emotional arguments and appealing to self-interest for the goals that they want to reach through political consumerism and, more generally, whether it is truly possible to reach their goals by selling products.

Cross-References

- ▶ [Agricultural Ethics](#)
- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Corporate Social Responsibility and Food](#)
- ▶ [Environmental Ethics](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Fair Trade in Food and Agricultural Products](#)
- ▶ [Food Boycotts](#)
- ▶ [Food Labeling](#)
- ▶ [Sustainability of Food Production and Consumption](#)

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Population Growth

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Introduction

Debates about population, environmental quality, and resource adequacy stretch back to classical writers but are usually identified with Thomas Malthus's *Essay(s) on Population* (Dietz and Rosa 1994; Malthus 1803/1992). The basic argument is that human population will grow at a pace faster than increases in the production of food or other resources. This leads to poverty, disease, malnutrition, and other social and environmental ills. Concern with population pressure on natural resources also underpinned Garrett Hardin's much cited but problematic analysis of the tragedy of the commons (Dietz, et al. 2003; Hardin 1968). Hardin argued that common pool resources, such as fisheries or pastures, cannot be managed by communities because continuous population growth will increase demand for resources and encourage self-interested rather than altruistic behavior. The commons collapses. The argument that population growth will lead to problems has been applied to many resources, but

it is food, and thus agriculture, that has been at the center of most debates about Malthusianism.

The logic of the Malthusian argument – ever increasing human population will lead to food shortages – may seem compelling. Populations of living organisms can increase exponentially, doubling at a pace that is roughly equal to 70 divided by the percentage growth rate. (Formally, the doubling time is $\ln(2)/(\ln(1 + r))$ where r is the growth rate.) Thus, a population growing at 2 % per year doubles about every 35 years and one growing at 4 % per year doubles about every 17.5 years. Nonlinear systems such as exponential growth are difficult for humans to understand, so the speed at which populations can grow is often startling. Growth of the total human population over the last century has been unprecedented in human history. In 1900, world population was estimated at 1.7 billion. By 1950, it had grown to 2.5 billion, an increase of less than 1 billion in 50 years. By 1975, it had increased to 4 billion, an increase of 1.5 billion in 25 years. By 2000, there had been an increase of 3 billion for a world population of 6 billion. As of this writing (November 2013), world population is estimated at 7.1 billion and is projected to reach 9.4 billion by mid-century (U.S. Census Bureau 2013). This rapid growth, and its exponential character, underpins concerns about the likelihood of increasing production of food and other resources at a comparable pace.

Malthus's argument was primarily about the pace of population growth, not about population size. In particular, he argued that if population growth is rapid, it will exceed the rate of increase in food production. In contrast, some have expressed concern about the size of the human population, arguing that we have, or will, exceed the earth's carrying capacity – the population an ecosystem can support over the long term. However, human use of resources and the stress humans place on the environment depend not just on the size of the human population but also on what is consumed and how it is produced, including how waste from production and consumption is disposed. Because both consumption and the technology used for production can change quite rapidly, thoughtful analyses have

questioned the utility of the carrying capacity concept when applied to humans (Cohen 1995). While both the size and the rate of growth of the human population warrant serious ethical consideration, they cannot be considered in isolation from thinking about what is consumed and how what is consumed is produced.

What causes population growth? Putting migration aside, population grows when the number of births exceeds the number of deaths. Improvements in public health, including better nutrition and reduction in infectious disease mortality, have substantially lowered the death rate in most nations in the twentieth century. Initially, birth rates remained higher than death rates, leading to rapid population growth. In many countries of the world, lower infant mortality rates; the education, employment, and empowerment of women; better access to contraception and abortion; and improved old age security eventually led to reduced birth rates. In time, and after substantial population growth, death rates and birth rates came into coarse alignment and population growth rates slowed to roughly zero. The overall process is called the demographic transition. It occurred in Western Europe in the nineteenth century and in Asia and Latin America in the last half of the twentieth century but has not yet played out in Africa or the Middle East.

After World War II, the start of the demographic transition – declining death rates – led to rapid population growth in what are typically labeled the developing nations. Concerns about Malthusian outcomes from this growth were motivated in part by a perceived link between rapid population growth, poverty, and the potential for political instability and Communist revolution (Hoff 2012). Influential analyses of economic development suggested that while population growth would not prevent increases in affluence, slower population growth would facilitate economic development. The result was substantial efforts to promote family planning and lower fertility in the developing world. By the 1960s, concerns with whether or not food production could keep pace with the demands of a growing population were at center stage in discussions of population. In the mid- to late

1960s, stress on the environment from both consumption and population growth also became a major part of public debate about population growth. At about the same time, US conservative support for family planning and population limitation shifted to opposition as free market ideology and alliances with antiabortion religious groups became part of the conservative agenda.

The dynamics that link population size to food production, consumption, and environmental impact are complex. First, throughout history, most human populations have taken steps to limit fertility through a variety of mechanisms, including contraception, abortion, extended nursing, infanticide, abstinence, and delay in age at marriage. Unrestricted population growth of the sort anticipated by Malthus seems more the exception than the rule. So the scale of human population, and thus food demand, is subject to human agency, although there are substantial time lags between changes in fertility and shifts in the dynamics of population size. Second, consumption matters. Much of the demand for food in the contemporary world comes from people seeking food stuffs that are harder to produce and have greater environmental consequences than would be required for a nutritionally adequate subsistence diet. Patterns of consumption have varied tremendously over time, across societies and across social groups within a society. But in recent decades, there is a general tendency for increasing per capita affluence to shift demand towards foods, especially animal products, that are harder on the environment than the diets of the less affluent (Steinfeld et al. 2006). Thus, food demand and the impacts of food production are driven by the composition of consumption as much or more than by the sheer number of people. Finally, the techniques used to produce food also vary tremendously over time and across societies. Malthus assumed that increases in food production could only advance linearly. But changes in agriculture, including changes in the social and economic organization of food production, have led to increases in global and regional food production at a pace much more rapid than Malthus had anticipated – the “Green Revolution.” Increases in production

since about 1950 have generally outstripped increases in the size of the human population, so on average, per capita food production has increased since the middle of the twentieth century (Food and Agricultural Organization 2013). Of course, some of these changes in agricultural technique have had problematic environmental and social consequences.

Even with an increase in global per capita production, there have been tragic incidences of starvation and famine, and a substantial fraction of the world’s population continues to be malnourished. But most analysts acknowledge that malnutrition and starvation are more of a function of how food supplies are distributed than to any absolute lack of food at the global or even regional scale (Ravallion 1997). Whatever ethical problems arise around malnutrition and even starvation, the causes are not primarily increases in overall human population size, but rather problems of food access among the poor, the displaced and the disadvantaged. Tragically, violent conflicts and natural disasters can create a “population explosion” of refugees in areas that are not well suited to provide sustenance for them. But the underlying cause of these tragedies is not population size per se, but rather inadequate arrangements to cope with such situations.

Analyses of population and food now acknowledge that links between population and food cannot be considered in isolation from climate, water, energy, biodiversity, and many other factors. Current thinking considers food and agriculture as part of a set of complex interactions between humans and the biosphere, often called coupled human and natural systems (Rosa and Dietz 2010). Food production is only one stress humans are placing on the environment, and how ecosystems and the biosphere respond to multiple stresses is undoubtedly more complex than simply the sum of the individual stresses. For example, increased demand for grains might be met by more intensive cropping. But that in turn will require more fertilizer, pesticides, and water, and each of those inputs places stress on the environment. In parallel, environmental change, including climate change, may make it difficult to

provide those inputs. In many regions of the world, climate change induced by human use of fossil fuels, in part to support food production, is changing hydrological regimes so that in the future the water needed to increase food production may not be available. The discourse has moved from a Malthusian concern with population and food supply to a concern with population, consumption, and technological choice as interacting stressors. The conceptual shift has been from a concern raised by Malthus – whether food production could keep up with human population growth – to an acknowledgment that for the first time in planetary history, humans dominate earth systems process. The resulting changes are dramatic and problematic and perhaps even catastrophic. Population alone is not the cause of these impacts; rather, they are driven by the joint effects of population, consumption, and technology.

Of course, slower population growth makes it easier to enhance human well-being, including the provision of an adequate food supply, and easier to protect the environment. So this entry begins with a discussion of the interplay between population, consumption, and technology. This sets a context for the discussion of the ethical issues that arise around efforts to slow the rate of growth and/or the size of the human population. The final section examines efforts to define an optimal population size.

Balancing Human Population with Resources and the Environment

Slowing the pace of human population growth is only one strategy to provide adequate food to the world's population. Other complementary approaches include increasing food production, shifting consumption patterns, and reducing waste. Thus, the ethics of population, food, and agriculture inevitably entrains broader discussions.

Increasing Food Production. The Green Revolution substantially increased food production in the later twentieth century, and the dire shortfall in food availability in many mid-century

projections was avoided. However, the environmental and social stresses that accompanied the Green Revolution raise questions about whether or not a continuation of this strategy is an acceptable option for the future, even if it is technologically feasible. Agriculture and other human activities have come to have a major influence on many biogeochemical cycles and are otherwise transforming the planet (Rosa and Dietz 2010). Thus, increasing food production as a strategy for keeping food supply in balance with human population engages ethical issues that are discussed in much of the rest of this volume.

Shifting Consumption and Reducing Waste. Shifting consumption and reducing food waste can complement increased production as a means of meeting the needs of a growing population. For example, approximately one-third of the global cereal production is fed to animals, converting large amounts of grain to modest amounts of animal protein (Erb et al. 2012). With growing affluence, the proportion of the diet in meat products tends to increase sharply. So one response to food shortages could be for the affluent to move away from diets heavy in animal products to those more reliant on plants, along with a continued emphasis on plant-based foods for those already consuming modest amounts of animal based foods. This response to the food needs of growing human populations thus entrains the ethics of consumption and, in particular, of vegetarianism and veganism into the discussion of the ethics of population growth (Fox 2013). In addition to dietary shifts, the current system involves considerable food waste. Best estimates indicated that between 30 % and 40 % of food in developed and developing countries is lost to waste (Godfray et al. 2010). Reducing such waste could help increase the amount of food available for consumption without the need for increased production.

Emerging technologies could yield more food with less environmental stress. Sustainable intensification, such as the integrated management of waste in livestock production or no-till cropping and precision agriculture, may provide methods of production that place less stress on the environment than traditional practices (Godfray et al. 2010).

Biotechnology, including genetic modification, could increase yield and nutritional value of what is produced while reducing environmental impacts. Promising as such approaches may seem, many scholars question the ethics of many aspects of biotechnology and wonder whether technological change driven by market motivations will be beneficial overall.

In general, increases in food supply do not necessarily translate into more food for the malnourished when resources are allocated according to a market logic emphasizing profits, as described by neoclassical welfare economics. Some argue that there is a right to the food needed for an adequate diet, which troubles a utilitarian approach. As Mares and Pena put it, food is not a commodity, but is instead, “a relationship that forces us to stretch our understanding of what it means to grow and eat food justly” (Mares and Pena 2011, p. 199). A virtue ethics stance would implicate high levels of consumption and waste whether or not they were profitable and also interrogate food systems that encourage inequity among producers, harm to the environment, and adverse effects on the well-being of domesticated animals (Thompson 2010). Most work on virtue ethics has focused on the local to national level, so analysis of how it may provide insights into the global food system is much needed.

Clearly, concerns with population, environment, and agriculture are intertwined with issues of consumption and production in ways that touch on nearly every other entry in this encyclopedia. However, there are two topics that are nearly unique to population ethics: concerns with the control of human fertility and concerns with optimal population size.

Concerns with Fertility Control: Cultural Norms and Individual Rights

Many cultural traditions, and especially religious traditions, include norms about gender roles, contraception, ideal family size, child gender preferences, and abortion. They thus offer an ethical framework for thinking about human fertility control. Of course, official policy of a religious

institution may not be followed by all laypeople in that faith (e.g., for generations, many Catholics have used birth control methods proscribed by the Vatican). And official doctrine may be more progressive than public images and common practices would indicate (e.g., a fatwa issued by Iranian clerics after the Revolution approved the use of family planning as long as the husband consented). However, religious norms have a strong influence on ethical decisions for many individuals and governments and sometimes may trump concerns regarding the effects of increased human population on the environment. In other cases, where religious norms raise concerns with the welfare of the poor or with environmental protection, they may encourage concern with population size and growth.

Of particular importance are religious teachings and cultural practices about gender and fertility behavior. One of the best established findings of decades of research on human fertility is that increased education, equality, and empowerment for women, coupled with access to family planning services, including abortion, lead to reduced fertility (World Bank 2012). But moves to promote gender inequality and access to contraception may contradict religious teachings and cultural norms that call for women to adhere to traditional roles, including a major emphasis on childbearing and proscriptions on some means of fertility control.

A parallel ethical conflict can arise with libertarian views that reject the legitimacy of a collective influence on individual decision making. Such a position would suggest that the collectivity, whether in the form of the state or the community, has no justification for suggesting how many children an individual or couple may have. In contrast, some have argued that strong policies and even coercive measures are justified in slowing the rate of population growth and limiting human population size (Derringhi 2001). While many governments in the developing world have instituted policies intended to slow population growth, the most notable is China's one-child policy, which sanctioned urban couples who had more than one birth, a policy China reversed in 2013.

Concerns with the Optimal Size of the Population

Classic utilitarianism argues for maximizing total population welfare defined as the sum of the welfare of each individual in the population. Derek Parfit noted the “Repugnant Conclusion” that can follow from this logic (Parfit 1984; Arrhenius et al. 2010). A very large population in which everyone has minimal quality of life may provide a larger “sum of welfare” than a smaller population with higher average quality of life but smaller aggregate quality of life. Under the “sum of utilities” logic, substantial population growth may be warranted, as long as every member of the population could be provided with sufficient resources so that the aggregate well-being remains greater than it would for a smaller but better off population. The original argument about the repugnant conclusion considered only human populations, but the logic could be expanded to utilitarian formulations that take seriously the well-being of nonhuman species (Frey 2011).

The repugnant conclusion is predicated upon the concept of welfare as a single additive scale. However, there are alternative ways of aggregating welfare into a measure of value. For example, maximizing the average, rather than the sum, of well-being could favor small populations with very high welfare. Another strategy is to introduce a variable value principle, so that the value of adding worthwhile lives to a population varies with the number of already existing lives in such a way that additional population has more value when the number of these lives is small than when it is large. This is an elaboration of Bernoulli’s argument that well-being increases proportionally to the logarithm, not the raw value, of income. Another way around the problem is to introduce a minimal well-being standard, so that a person’s life only contributes positively to an outcome if the quality of the person’s life is above the standard, although what constitutes an appropriate critical level is subject to debate. Still other ethical theorists argue that we should focus on frustrated and satisfied preferences, with a frustrated preference

counting negatively whereas satisfied preferences having a neutral value. This could be extended to Nussbaum’s capability argument – larger populations are not to be preferred to smaller populations unless that increased size enhances the ability of all to realize their capabilities (Nussbaum 2006). Finally, some philosophers assert that Parfit’s conclusion is not so repugnant after all. For example, it is argued that while a life barely worth living stands in stark contrast to a privileged life, a life barely worth living is not ipso facto unethical.

Summary

The ethics of population, food, and agriculture inevitably engages a wide variety of other ethical issues related to the environment, social justice in the allocation of resources, the role of cultural and religious institutions in society and individual choice. The question of optimum population size leads to deep inquiries into the problem of aggregating across individuals in ascertaining the collective good. Thus while an important topic in itself, population ethics is also an inherently complex and interdisciplinary area of inquiry.

Cross-References

- ▶ [Climate Change, Ethics, and Food Production](#)
- ▶ [Ecofeminist Food Ethics](#)
- ▶ [Environmental Ethics](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Food Waste](#)
- ▶ [Sustainability and Animal Agriculture](#)
- ▶ [Sustainability of Food Production and Consumption](#)
- ▶ [Vegetarianism](#)
- ▶ [Virtue Theory, Food, and Agriculture](#)

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Pork Production: Ethical Issues

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Synonyms

Animal welfare; Ethical issues; Ethics; Pork; Pork production; Pork supply chain

Introduction

The following general description of the pork supply chain is from the perspective of a farmer beginning with no farming operation to decisions concerning scale, housing, feed, processing, and so on, ending with an economically viable operation and pork products available for the consumer. Within each of these decision points, the authors have included key value domains where there are choices or trade-offs in tension between economic viability, social equity, environmental

or ecological integrity, or animal health and welfare.

What follows appears as a linear description of the decision tree for someone interested in getting into the pork supply chain; however, many of these choices are not linear in nature but rather are nested or interconnected in how one must weigh the trade-offs involved with the overall farm plan. Complicating the ethical issues embedded in the supply chain is the dynamic nature of the various decision points and the associated risk, such as volatility of feed costs or global market pressures.

Choice of Production Approach or System

A farmer who is considering pork production for his or her farm enterprise will consider the type of pork production system that best fits with their skills, resources, philosophy regarding animal agriculture, and desired economic outcome. It is likely that the first choice our farmer must face is whether he or she would like to be an owner or to be a contract grower. Ownership of a pork production reflects various levels of investment in land and buildings, labor, mechanical skills, and marketing skills. Pigs may be raised very intensively (controlled environments and proven technologies) or very extensively (outdoors, using crop fields post-harvest, pastures, and buildings in various combinations) or with some mix of these approaches. Owned enterprises may be of various scales, but in general intensively managed farms are the largest.

The benefits of intensive, highly coordinated production have been discussed for decades. Hurt and Zering (1993) were one of the first to study industrialization in pork production and discuss the reasons for the growing adaptation of the intensive approach. For owners of swine farms, technology improvements in genetics, nutrition, disease control, and facilities led to increased production efficiencies and significant return on investment. Significant gains from scale economies were also realized by the implementation of a highly coordinated production-processing system. Hurt and Zering's suggestion at that time has been realized; that there would be further movement toward large production units which are

more highly coordinated with the packer and the domestic and foreign consumer. Indeed, consumers have been the beneficiaries of the intensive pork businesses which produce and market at lower costs and with acceptable quality, extreme safety, and consistency.

There are significant economic advantages with increasing size and specialization in pork production. Advantage may come from economies of scale (MacDonald and Ollinger 2000; Marchant 2007) or scale efficiency (increasing returns with the same production technology as operation size increases; Key et al. 2007). When a farmer elects to operate within or outside of the intensive commodity supply chain, there are significant consequences associated with the economy of scale. These forces will only continue to grow as the global population continues to grow to the projected nine billion people by 2050 (UN 2004). Compounding these forces of scale is the changing diets of developing nations to mirror that of the developed world with increased meat consumption. This "feed the world" ethical stance is often in tension with a regional food system approach. More extensive pork producers who choose to operate outside of a coordinated or integrated pork chain may make this choice based on an ethical stance of freedom to make on-farm production decisions more closely guided by regional sensitivities to place, community, terroir, animal welfare, or niche markets.

The substantial increases in farm productivity with large, specialized farming systems are associated with the use of production contracts. In 2009, just over 70 % of US pork sold was raised using production contracts (McBride and Key 2013). Contract production is a formal agreement whereby the owner-contractor of the pigs pays the contract grower to care for the pigs in the grower's facilities with inputs furnished by the owner-contractor. Contract growing in the pork industry has an interesting history that traces back to entrepreneurship; relatively lenient environmental regulations; few alternative economic opportunities; familiarity with production contracts in the poultry industry; less expensive land, labor, and capital; and lenders willing to finance new grower facilities.

Contract growing initially took hold in the southeast part of the USA. The decline in US tobacco production in the 1960s and 1970s was a contributing factor (Hurt and Zering 1993). Here contract growing was a welcome relief for many of these farmers who were facing severe financial hardship and lack of knowledge to support the transition to an alternate farm product. Contract production provides farmers with a farm plan, resources, and a contract securing income if they fulfill the agreement to care for the pigs. Production contracts absorb risk in the form of a low-interest loan to the farmer. Contract growing is critiqued for creating greater concentration of power, knowledge, and revenue in the owner-contractor thereby decreasing the diversity or pluralism of farm practices lending to a so-called democratic food system. Alternatively, these contracts provide a co-benefit that forces the farmer to comply with an animal welfare audit (Grandin 2010).

Labor

One concurrent and confounded part of the decision whether the farmer has the capacity or desire to engage totally or in part in an intensive farrow-to-finish system or to participate in some form of specialized, part or all extensive, swine farming enterprise may involve an ability and liking for managing hired labor. This decision about the scale of either intensive or extensive farming is driven largely by how much land is accessible and how much labor can be successfully overseen. When considering labor, one looks at whether this is a farming family with some percentage of farm labor coming directly from the family and what percentage of labor will come from outside of the family. Labor and treatment of the laborers come with a unique set of ethical issues relating to wages, labor practices, employment of migrant labor, and the management of family income. Intertwined are ethical issues concerning worker safety and health, low pay, immigration status, and impact of significant cultural change in a traditional, rural community (Honeyman 1996). Although a serious prospect 15–20 years ago, it has now been realized to some degree that the changing labor demographic does

not have to be as great a concern as initially thought (Hassan 2011).

Feed Procurement

Whether large or small scale, intensive or extensive, organic or conventional, all pork production systems require provision of feed for the nourishment of their swine. Pigs are monogastric omnivores and require energy, essential amino acids, vitamins, and minerals in their diet. It takes approximately 1,000 lb of feed to raise a pig to market weight. Traditionally, corn and soybeans have been the primary feedstock used in blending a nutritionally balanced diet for pigs in intensive production systems in the USA. Assuming a whole herd carcass feed efficiency of 4.0, an average carcass weight of 200 lb, soybean meal yield per bushel crushed is 79.2 %, and all feed (all diets from all production phases combined proportionally) is comprised of 78 % corn and 17.5 % soybean meal, then about 21.7 % of the corn and 20.3 % of the soybeans grown in the USA in 2012 (NASS 2013a, b) were utilized for pork production. Alternative feedstuffs and the grazing of pastures and fields are more likely used in extensive production.

For a given desired production approach and scale, feed may be procured via crop production within the system. Another series of decisions must be made concerning crop production for the farm if the farmer will be growing their own feed. If the farmer is growing under a contract agreement, the feed is grown or purchased; it is manufactured off-farm by the owner-contractor. Embedded in decisions about crop production inputs are decisions regarding fertilizer application, tillage, weed control/management, insect control/management, implement use, transportation, storage, and environmental impacts. There are ethical stances associated with these practices. For example, there is an inconclusive body of research pointing to the persistent use of glyphosate and declining soil microbial health. Farm implements are powered by fossil fuels which contribute to global atmospheric CO₂. Hundreds of studies have been conducted to assess the impact of atrazine on wildlife and human health. Runoff from the use of agricultural

synthetic nitrogen has been linked to several “dead” or hypoxic zones in coastal waters.

The substantial use of farmland for animal feed is an area where one often sees multiple value stances in tension. The use of federal funds to subsidize corn and soy production for animal feed has been questioned. In 2014, price support programs were eliminated from the Farm Bill. Federal subsidies of corn to support ethanol production further complicates how one might weigh the trade-offs associated with feed for pork production. In 2013 farmers saw corn prices reach an all-time high with some responsibility believed to be a result of the ethanol subsidy. This increased input cost drove up the cost of pork production for farmers, posing the question whether corn should be used for animal feed or a “renewable” energy source.

Over 90 % of corn in the USA is genetically modified (GM) and over 93 % of the soy is GM. Genetic modification of these two crops raises many ethical issues to consider. Central to this debate is whether life should be patented and controlled by private industry. There is concern regarding the long-term effects of GM crops on nontargeted species, soil microbial populations, and gene flow in the ecosystem (UNFAO 2001). The science behind the safety of long-term consumption of GM food and human health is inconclusive (Rich 2004).

The use of alfalfa hay as a feedstuff for gestating sows in outdoor or alternative pork production should not be overlooked. In 2010 the US Supreme Court lifted a ban prohibiting the planting of alfalfa seed and allowing Monsanto Corporation to sell the seed to farmers. This decision and practice of growing GM alfalfa puts organic growers at risk of genetic contamination. Currently only 1 % of the alfalfa grown in the USA is certified organic.

Feed additives such as antimicrobials (commonly referred to as antibiotics), clay binders, enzymes, and flavorings may also be decision points for the farmer. Of these ingredients, the addition of antimicrobials to feed is the most contentious. The use of antimicrobials in animal feed has been linked to so-called superbugs or antibiotic-resistant strains of human germs (Fitzgerald 2012).

Housing

Before the 1960s, most pork in the USA was raised in outside lots or on pasture systems. With the development of slotted floors, automated feed systems, ventilation, gestation and farrowing stalls, and liquid manure handling equipment, it became possible for producers to more easily care for larger numbers of animals and to do so provide protection from variations in environmental factors including temperature, precipitation, sun, parasites, and predators. Enclosed buildings also made it practical to farrow year-round, rather than seasonally. This was the beginning of intensive production systems also known as concentrated animal feeding operations or CAFOs used for over 75 % of pork production in the USA and by a rapidly increasing number of producers globally. This system of production also allowed farmers to minimize labor per unit of product, obtain year-round production for maximum use of facilities, and allow for increased profitability of the farm enterprise (McBride and Key 2013). This decision point for the farmer is tightly bound to instability in feed prices. In recent years, it has become increasingly difficult to afford keeping pigs outdoors due to the high price of corn and other feedstuffs, possibly a contribution of expanded efforts to use increasing amounts of biofuels.

Most swine today are raised in “all-in, all-out” (AIAO) systems, where each room or building is completely emptied and sanitized between groups of pigs. Each new group of pigs enters a freshly disinfected environment and stays there for this phase of their life. The facility has a separate room or building for each group of pigs weaned, with extra space if needed to allow workers time to clean the room before the next group of pigs. AIAO animals in each room are of a uniform age and size and are isolated to the extent possible to decrease the possibility of diseases spreading from older animal groups to younger ones. The primary advantages are that disease spread can be better contained; animals are less stressed because they remain with the same age and social group throughout their development; and complete cleaning and disinfecting between groups is possible. In the last few years,

some producers have constructed “wean-to-finish” barns where pigs go immediately after weaning and stay until market. This combines the nursery and grow-finish phases of production. These barns provide substantially more space per pig than is needed initially, but provide the advantage of only moving pigs once during their lifetime. This reduces stress on the animals and saves labor since buildings are not cleaned until the hogs are marketed.

Twenty to thirty years ago, this approach of housing swine 100 % of the time was called “confinement”; today is called “controlled environment.” Keeping swine in barns all of the time has significant ethical issues related to the welfare of the animals. Included is the housing of swine in stalls and densely populated pens. There are competing value domains and differing forms of expert knowledge and assessment utilized to measure the welfare of pigs in confinement. A common concern in this type of housing is the denial of species-specific behaviors, freedom of movement or animal agency, group housing (pigs are highly social), or enrichment (cognitive enrichment with pigs reduces stress and aggression). Pigs in extensive systems, with access to fields and/or pasture, may spend more, depending on the season, than 50 % of their life rooting/seeking. The denial of this species-specific behavior in intensive systems is considered a cause of stress, boredom, and stereotypic behavior in pigs. Farmers must weigh the trade-offs between perspectives concerning the welfare of the animal and economic viability of the farm enterprise.

Protecting the Environment

Large-scale, intensive animal production, including pork, is viewed as a serious environmental concern. Disagreement in value domains and expert knowledge exists between producers, government, advocacy groups, and consumers. In tension is the economic viability of the farm enterprise with the risk for negative environmental impacts. USEPA’s 2004 *National Water Quality Inventory* indicates that agricultural operations, including animal feeding operations (AFOs), are a significant source of water

pollution in the USA. States estimate that agriculture contributes in part to the impairment of at least 94,182 river miles, 1,670,513 lake acres, and 792 estuary square miles. Agriculture was reported to be the most common pollutant of rivers and streams. Potential sources of manure pollution include open feedlots, pastures, treatment lagoons, manure stockpiles or storage, and inadequately managed application to fields. Ammonia, nitrogen, phosphorus, pathogens, and odorous compounds are the pollutants most commonly associated with manure. Manure is also a potential source of salts and trace metals and, to a lesser extent, antibiotics, pesticides, and hormones.

These pollutants can impact surface water, groundwater, air, and soil. In surface water, manure’s oxygen demand and ammonia content can result in fish kills and reduced biodiversity. Solids can increase turbidity and smother benthic organisms. Nitrogen and phosphorus can contribute to eutrophication and associated algae blooms which can produce negative aesthetic impacts and increase drinking water treatment costs. Turbidity from the blooms can reduce penetration of sunlight in the water column and thereby limit growth of sea grass beds and other submerged aquatic vegetation, which serve as critical habitat for fish and other aquatic organisms. Decay of the algae can lead to depressed oxygen levels, which can result in fish kills and reduced biodiversity. Eutrophication is also a factor in blooms of toxic algae and other toxic estuarine microorganisms.

These organisms can impact human health as well as animal health. Human and animal health can also be impacted by pathogens and nitrogen in animal manure. Nitrogen is easily transformed into the nitrate form and, if transported to drinking water sources, can result in potentially fatal health risks to infants. Trace elements in manure may also present human and ecological risks. Salts can contribute to salinization and disruption of the ecosystem. Antibiotics, pesticides, and hormones may have low-level, long-term ecosystem effects.

One must also consider the detrimental impacts to environmental and public health

through the airborne emissions sourced in pork production. Significant research has been done on the air quality surrounding pork operations, yielding varied negative effects in adjacent communities. Researchers have described serious respiratory reactions such as chronic obstructive pulmonary disease (COPD) in some swine farm laborers working in enclosed swine housing, with positive health effects in those who wear respirators (Monso et al. 2004; Dosman et al. 2000). This is due primarily to the chemicals found in the air, manure, and dust (Cole et al. 2000). Hydrogen sulfide, carbon monoxide, and methane are the significant gases of concern to the safety of pigs and people. Methane is a product of anaerobic digestion in the depths of the stored manure and is released into the air above the manure. It provides a risk of barn fire or explosion. The health of the workers and community also brings to light the issue of environmental justice, as typically the facilities are located in low-income areas and employ low-income individuals, who often happen to be minorities. This environmental injustice often adds to the existing social imbalance and the stigma attached to these communities (Wilson et al. 2002).

The use of hormones to regulate the estrus cycle of sows and gilts allows for more efficient use of gestation and farrowing facilities, thereby improving the overall economic viability of the farm enterprise. However, increasingly the use of hormones in animal agriculture is being challenged. Estrogens, progestogens, prostaglandins, and other hormones and/or their metabolites, from human and animal use, disposed of into surface and groundwaters have been implicated in the reduction in sperm counts among Western men Luconi et al. (2002)) and reproductive disorders in a variety of wildlife (Safe 1995).

Also of note is the water usage involved in the production of pork along the entire chain. An estimated 41.3 billion gallons of water is used annually in the USA alone for swine production, most of which (62.2 %) goes toward swine finishing. The remaining nearly 38 % is used in farrowing (33.4 %) and nursing (4.4 %) the swine, with 80 % of the total usage being

animal drinking water. This consumption not only adds to the growing crisis of water shortages but, from the perspective of the farmer, can also increase costs drastically. Reducing water usage by only 5 % can save upwards of 35,000 gal of water (assuming a 1,000-head operation) and \$420 annually, with both numbers growing as water conservation increases (Pork Checkoff, 2011).

Market Access

Pork is the most widely consumed meat in the world, 43 % of world meat consumption by species (pork, beef, poultry, other). When deciding on the system and scale of the farm enterprise, potential farmers must consider the market conditions in their region and what type of market (direct to packer, spot-collection point, custom butcher, direct to restaurant, farmer's market, CSA, or other arrangement) is currently available, could be developed, and is most desirable to work with. Market access is pivotal for success. The need for consistent, reliable sources of a particular quality is seen at all scales. What and who defines "quality" is certainly an ethical issue to be considered. Embedded in pork quality are variances in fat, flavor, market weight or size, curing, fresh, frozen, or use of growth-securing antimicrobials.

In intensive production, nearly all of procurement by packers and process is direct, with marketing agreements (Grimes and Plain 2007). In 2007, 60 % of independently produced hogs were sold through some form of market formula or purchase arrangement; 33.4 % of hogs marketed were packer-owned or packer-sold. Procurement managers are willing to pay a price premium to secure the quality and number of hogs they need. The fact that less than 10 % of hogs are sold in spot or markets involving bids has led some to question whether enough hogs are sold on the spot market to sufficiently represent actual supply and demand conditions and derive an accurate price for hogs.

Here too one must consider time as a constraint or a value stance. Does the farmer value the efficiency and speed of production or rather a slow food ethic (Paxson 2005) where

speed and efficiency are replaced with slower-growing breeds, longer time to market, and slower pace of farm family life? It can be demonstrated that reliance and reduction of off-farm inputs is favored by small- to mid-scale independent farm systems. Small- to midsize-scale pork production is often correlated with USDA-certified organic, pasture-raised, multispecies-integrated, or animal welfare-certified farms. These practices can represent a value stance of the farmer or can be an economic strategy to capture a portion of the growing niche market for this type of pork. This demonstrates how one value domain, economic viability, can drive other value domains such as animal welfare or ecological integrity. Coupled with this driving force is again the need to produce to scale with consistent quality.

Transport

Market weight or finished hogs are then transported to slaughter. The 28-h law was first enacted in 1873 and applied exclusively to rail transportation of cattle, sheep, swine, and other animals, requiring that animals not be confined for more than 28 consecutive hours without being unloaded for feed, water, and rest. This law was amended in 1994 and further clarified by the USDA in 2006 that livestock transported by truck are subject to regulation requiring that they be off-loaded for feed, water, and rest after 28 consecutive hours in transport. This decision of transport is tightly wedded to the location and availability of USDA-inspected slaughterhouses. For the small- to midsize farmer, the lack of processing facilities within a 2-h drive severely limits their ability to choose especially if seeking to grow certified organic or certified humane pork. There is a small but growing movement to provide mobile abattoirs for processing.

Harvest

Once the animals have arrived at the processing facility, they are unloaded into the lairage (holding pens) where preslaughter welfare conditions should be optimized. The ideal condition for both meat quality and welfare of the animal is

short transport time and a sufficient lairage rest. Good lairage conditions give pigs a time to rest and rehydrate. The amount of lairage time may vary from 0.5 to 24 h, as it is dependent on climate, time in transit, quality of transport, and conditions in the lairage (e.g., separate pens to avoid comingling of animals from different farms). After resting, the animals are then brought to the slaughter line or kill floor. The Humane Slaughter Act of 1958 is a federal law designed to reduce pain and suffering of animals during slaughter. The law is enforced by the USDA Food Safety and Inspection Service. Compliance to this federal regulation is often an area of concern and has paved the way for the adoption of Temple Grandin's humane slaughter auditing process. Grandin's work over the past two decades has dramatically changed slaughterhouse conditions, process, management, and self-regulation with the development of her welfare audit protocol (Grandin 2003). The audit is an objective scoring at critical control points in the process. This has now become a voluntary industry standard with corporations such as McDonald's, Burger King, and Wendy's requiring the audit of their suppliers.

Processing and Distribution

From the cooler, carcasses may be managed in several different ways. They may be sold for wholesale or restaurant distribution. More often the whole carcasses of niche swine find their way into restaurants and neighborhood-operated butcher shops. Carcass may be split into primals (major portions of the animal) and shipped to other plants for further processing, exported, or shipped to stores for customized cuts. Some restaurants may buy primals. At issue here is identity preservation as well as consistently providing customers the product the seller claims to provide 100 % of the time. Identity preservation is important for enhanced food safety, but it has been a cause for concern when incorporated into enforcement of country of origin labeling. Vertical integration has allowed for the expeditious and affordable distribution of large amounts of meat through large grocery chains. The processing of the meat is the responsibility of the company all the way to

the branded productions in the meat case at the store. Finally, it is important to some to remember that the harvest of swine results in more products than just pork. Several valuable products or by-products, in addition to meat, come from swine. These include insulin for the regulation of diabetes, valves for human heart surgery, suede for shoes and clothing, and gelatin for many food and nonfood uses.

Summary

Ethical issues exist throughout the pork supply chain for both producers and consumers. They are very important and must be addressed using deliberative skills, patience, and humility. Knowledge and investigation of the complexity of the trade-offs involved in pork production along with an increased understanding of what is actually taking place during production, harvest, processing, and distribution are essential to the full discussion.

Cross-References

- [Agricultural Ethics](#)
- [Agricultural Science and Ethics](#)
- [Animal Agriculture and Welfare Footprints](#)
- [Animal Welfare in the Context of Animal Production](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Biofuels: Ethical Aspects](#)
- [Centre for Animal Welfare and Ethics](#)
- [Climate Change, Ethics, and Food Production](#)
- [Corporate Farms](#)
- [Economy of Agriculture and Food](#)
- [Ecosystems, Food, Agriculture, and Ethics](#)
- [Environmental Ethics](#)
- [Environmental Justice and Food](#)
- [Farm Management](#)
- [Farms: Small Versus Large](#)
- [Food Animal Production, Ethics, and Quality Assurance](#)
- [Humane Slaughter Association](#)
- [Industrial Food Animal Production Ethics](#)
- [Industrialized Slaughter and Animal Welfare](#)
- [Meat: Ethical Considerations](#)

- [Resource Conflict, Food, and Agriculture](#)
- [Sustainability and Animal Agriculture](#)
- [Sustainability of Food Production and Consumption](#)
- [Telos and Farm Animal Welfare](#)
- [Trade Policies and Animal Welfare](#)
- [Water, Food, and Agriculture](#)

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Poverty and Basic Needs

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Synonyms

Basic human needs approach; Human needs approach

Introduction

Dissatisfaction with purely monetary measures of poverty led to the development of the basic needs approach (BNA) during the 1970s. Its main foundation is a consequentialist ethic that argues that a good society is one in which all people will be able to meet their basic needs. A person is said to be poor if he or she is unable to meet his or her basic needs. In general, the BNA is more concerned with poverty experienced in the present than with long-run growth per se and more concerned with inequality in the distribution of growth's benefits than its absolute speed.

Beyond this basic foundation, however, there is a great deal of debate and disagreement within the movement. As discussed below in greater detail, some practitioners contend that basic needs are confined to a minimal set necessary for the sustenance of human existence, while others focus on ensuring complete well-being and a list of needs that is ever expanding by design. While the BNA is inherently multidimensional, there is disagreement over how to deal with this multidimensionality in quantitative analysis. These internal disagreements shortened BNA's brief prominence in development thinking. It has since been growing in importance, thanks to the Millennium Development Goals (MDGs) and Latin American practitioners.

History

Some of the roots of the basic needs approach can be traced as far back as Aristotle, who identified four groups of needs. The two most relevant groups are “that which must be if life or existence is to be” and “that which must be if some good is to be achieved or evil avoided” (Reader 2006, p. 339). Rowntree measured poverty in early twentieth-century England based on calculating an income level necessary to meet the “human needs of labor” (Glennerster 2004, p. 25). Wiggins (1998) attempts to give the most concrete definitions of having an “absolute” need for a particular object – a need which would cause

significant harm if unmet and can only be met by that particular object. Absolute needs are “entrenched” when it is exceptionally difficult to imagine a reality where the person in question did not have an absolute need for that object. Lastly, entrenched, absolute needs are “basic” if it is a reality on par with a natural law that makes it so the person has an entrenched, absolute need for that thing.

Maslow’s (1943) famous hierarchy of needs also doubtlessly played a role in the BNA’s early development. The original hierarchy identified five levels of needs, ordered from the physiological and safety and security needs which are necessary for existence to the social, esteem, and self-actualizing needs requisite for human growth and development. Tay and Diener’s (2011) test of Maslow’s hierarchy finds that while each of the needs Maslow identified is significantly correlated with happiness worldwide, the expected hierarchy is not supported by their data. Türkdoğan and Duru (2012) determine that the five basic needs from psychology’s choice theory (survival, love and belonging, power, freedom, and fun) are significant predictors of subjective well-being among university students. Even though survival was the need that was least fulfilled, they suggest that freedom (or self-autonomy) and fun were the most important drivers of variation in subjective well-being.

US President John F. Kennedy’s Alliance for Progress was established in 1961 explicitly “to satisfy the basic needs of the [Latin] American people” (Dixon 1987, p. 129). During the same period, the US monetary poverty line was based loosely on the cost of obtaining a minimum, emergency diet (Chambers 1982). In other countries, simple poverty lines were also based on the ability of a household to obtain enough food. However, this was often limited to the ability to obtain the primary staple (e.g., rice, maize, wheat, potatoes, or cassava). Very little attention was paid to nutritional adequacy or intrahousehold food distribution in the earliest measures. This tendency was seen again during the 2006–2008 food price crisis when

governments that took action primarily focused on staple crop access rather than on nutrition and dietary diversity.

There was increased focused on basic needs during the 1970s in part because of the world food price crisis of 1973–1974. Soaring food prices led to hunger and brought to the fore the need to address this most basic need, particularly since the same amount of money would not purchase as much food. BNA was often couched within a discussion on the ability of societies to provide their citizens’ basic needs within environmental constraints. The development of the BNA was therefore intimately related to the development of environmental consciousness.

Basic needs as a development paradigm were fostered by a series of influential publications supported by major donor organizations. These included the Cocoyoc Declaration (1975, p. 896) by UNCTAD and UNEP which forcefully contended that “any process of growth that does not lead to their [basic needs’] fulfillment – or, even worse, disrupts them – is a travesty of the idea of development”; the 1975 [Dag Hammarskjöld Report](#) (p. 27) which contributed the notion that meeting physical needs allows people the ability to fulfill social needs, such that “the basic needs of men emerge as social needs”; the Latin American World Model (Herrera et al. 1976) which constructed a mathematical model of how developing countries could satisfy their citizens’ basic needs without endangering environmental sustainability, acting as a direct challenge to the Club of Rome’s *Limits to Growth* that fulfilling basic needs was primarily a sociopolitical challenge rather than an environmental one; and the [ILO’s report for the 1976 World Employment Conference](#) which marked a dramatic shift from promoting growth-led development strategies to explicitly proposing that each country adopt a BNA that included not only physical needs but access to public services, employment with appropriate pay, environmental quality, and participatory governance. The ILO report was particularly noteworthy in part because of its foundation of country studies across developing

regions of the world and from its political acceptance. At the 1976 World Employment Conference, 121 governments agreed to this new framework, albeit with significant reservations from both developed and developing countries.

By 1978, the World Bank, ILO, UNEP, UNICEF, and USAID were the chief proponents of the BNA among development organizations with Latin American governments providing the chief political support from developing countries (ODI 1978). During the 1980s and 1990s, however, the BNA suffered significant setbacks. Recessions in Latin America reduced those governments' ability to fight for basic needs at home and abroad. The rise of the Washington Consensus refocused development thinking on more growth-oriented policies through political retrenchment. In addition, new intellectual challenges emerged from within the community of scholars that had been most likely to support BNA, such as Amartya Sen's capabilities approach and the human rights framework.

Criticism focused on a handful of challenges in applying BNA (Rudra 2009). The primary concern was the lack of agreement among scholars on which needs were basic. The core basic needs group focused on a minimal set of needs essential for sustaining life. This core principally included food, shelter, water and sanitation, education, and health and sometimes included employment or political participation. The expanding basic needs group, in contrast, believed that human development should focus on ensuring individual well-being and recognized that once one need was satisfied, additional needs came to the fore. Rather than ensuring a minimum lifestyle, the real goal was nothing less than the full physical, mental, emotional, and social development of all people, with lists of needs that included "democracy, marriage, recreation, religion, and furniture" (Rudra 2009, p. 134; see also de Campos 2012). Among the latter group are the World Health Organization, which defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity," and the UN's Universal

Declaration of Human Rights (UDHR), which states in Article 25.1 that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family" (De Campos 2012). The World Bank, ILO, USAID, and most governments tended to favor the former group, preferring a smaller set of clearly identifiable targets, limited political accountability, and finite budgetary expenditures.

In addition to disagreement on which needs were basic, there was quantitative disagreement over how much of any particular need was basic and how to deal with the generally accepted fact that different people require different amounts of these basic needs at different times and places depending on a range of factors (Reader 2006). Cultural differences add to this complexity. While part of the moral appeal of the BNA is that these human needs are universal, many of them may differ in form or quantity across societies or over time. Examples include different caloric needs depending on lifestyle and different food choices depending on culture, different shelter requirements based on climate, different perceived social needs by gender or age, and different perception of the relative worth and necessity of different needs depending on cultural factors. This lack of agreement on focus and the challenge to be simultaneously universal and sensitive to local differences reduced the BNA movement's policy relevance and made it easier for other conceptualizations of human development to gain prominence.

Despite the theoretical schism between the minimum basic needs and expanding basic needs camps, in practice measures of basic needs focused on easily measurable baskets of minimally necessary commodities. Often, the commodities were not only measurable but monetizable, making it possible to construct cost of basic needs (CBN) poverty lines as the United States did in the 1960s (Chambers 1982; Arndt and Simler 2010). Sen (1984) criticized this as "commodity fetishism," insisting that freedom was a basic need in itself for human development. If participants do not have the freedom to voice their own needs, it was argued that BNA was too

patronizing and incomplete (Sen 1984; Rudra 2009). Reader (2006, p. 338) indicates that “the emphasis on the ‘basicness’ of needs caused offence, suggesting helper-groups believed poor people ‘really need’ water, but do not ‘really need’ goods subserving other dimensions of human life like religion or relationships.”

The BNA has had a resurgence since the Human Development Index (discussed below) and the Millennium Development Goals (MDGs) were established by the United Nations in 2000. As the culmination of over a decade of international conferences on human development, the MDGs represented a significant consensus on what needs were considered basic across the world and how to measure them. The presence and signatory support of most governments served to weaken the criticism that developing people did not have a voice in the process. There has been a marked increase in attention paid to fulfilling the basic needs embodied in the MDGs and whether or not economic growth and development assistance were successfully fulfilling those basic needs. Alkire (2005) notes, however, that the MDGs relate to states of being or functionings people need (avoiding premature death and chronic hunger) rather than the intermediate goods/capacities people need in order to achieve those states of being as Wiggins (1998) lays out.

In Comparison

While basic needs are most likely to be advocated as a measure of absolute poverty, there is no a priori reason that one’s basic needs might not be relative to what other members of society have. Needs are likely to become increasingly relative as average incomes rise and as needs take on increasingly social dimensions. For instance, the physiological need for a particular number of calories is an absolute need, while the need for types of food that are culturally appropriate depends heavily on the surrounding culture by definition.

There are three primary methods for measuring poverty that may significantly overlap the

BNA. These are the monetary, capabilities, and human rights approaches. Monetary poverty lines based on the cost of obtaining basic needs (CBN) can follow much of the spirit of the BNA while focusing more on the means people have to meet their basic needs than on their actual fulfillment. Constructing CBN monetary poverty lines requires a number of assumptions that BNA purists would find rather strong, such as placing specific monetary values on a year of life or the probability a child will die, valuing purchased inputs to health processes that are sold in markets rather than the experience of being healthy which is not, and ignoring basic needs that have neither marketable price nor reliable shadow price estimates. On the other hand, most BNA measures of poverty must make similar judgment calls in order to construct a composite index and lack the theoretical rigor that market prices provide. As one example, Guruswamy and Abraham (2006) construct a CBN poverty line based on the cost of obtaining certain basic needs in India: nutrition; basic health measured as the expected value of healthcare expenditure, clothing, and miscellaneous; and access to water and sanitation, shelter, education, electricity, and roads. Looking at just the monetary aspects, that would create a poverty line of Rs. 840 per capita per month. They find that 85 % of rural Indians and 42 % of urban Indians fall below that line, significantly more than official poverty figures.

As in the BNA, Sen’s capabilities approach examines a large set of basic needs, but the primary emphasis in the capabilities approach is on whether or not a person has the capability to fulfill a needed functioning rather than whether the need is actually fulfilled in practice. The focuses on means rather than ends and on the individual freedom to choose whether or not to fulfill those ends are the key distinctions. Survey work in South Africa finds that while both utility- and BNA-derived poverty measures do not provide a sufficiently broad space to cover what individuals actually conceive of as their needs, there is at the same time a more significant overlap between the three approaches than adherents of the capabilities approach normally suggest (Clark 2005). Reader (2006) provides

a vigorous defense against many of the criticisms of BNA brought up by capabilities approach proponents. Since fulfilling people's basic needs has a moral force that "acquiring capabilities" cannot have, the replacement of BNA with the capabilities approach may have been premature (Alkire 2005; Braybrooke 2006; Rudra 2009). Wiggins (1998) argues that the word "need" itself has a special meaning that implies some things are required regardless of what one chooses, reducing the moral necessity of the capability approach's focus on freedom. Alkire (2005) attempts to merge BNA with capabilities and the MDGs, producing a notion of basic needs capabilities.

Stewart (1989) argues that the human rights approach evolved in parallel to the BNA, though the work was done by different agents from different disciplines to create separate conceptual frameworks and policy spaces. The 1976 International Covenant on Economic, Social and Cultural Rights established that most of the core basic needs were also human rights. As very similar approaches from the outset, they shared many of the same strengths and criticisms, particularly over which needs are rights and to how much of a needed commodity or functioning one has a right. The rights dimension adds several important concepts absent from BNA. Most important is the notion that for every right holder, there is also a duty bearer who must fulfill the right, while there is no such legally recognized "needs provider" in BNA. Thus, declaring something, a human right adds a greater sense of obligation to governments as the entity most likely to be declared the duty bearer. The right to human development brings the concept of rights well beyond the core basic needs into the realm of expanding needs.

Applications

One of the greatest challenges in applying the BNA is dealing with the inherently multidimensional nature of poverty. Numerous papers have described the theoretical problems that need to receive greater attention across

multidimensional poverty approaches (e.g., Thorbecke 2005). When practitioners gather information on dozens of basic needs indicators, they need a simple means of combining them that is informationally relevant yet readily comprehensible for policy makers and the general public. Any and all attempts at doing so, however, are by nature ad hoc and involve making strong ethical and statistical assumptions that are difficult to defend. Following are brief summaries of some of the more prominent attempts at actualizing the BNA and a brief comment on how well each embodies the main goals of the BNA.

The UNDP's Human Development Report was begun in 1990 with the express aim of pushing back against the Washington Consensus using the BNA and capabilities approach fostered by its founding editors (e.g., Paul Streeten and Frances Stewart for BNA; Amartya Sen for capabilities). The Human Development Index (HDI) constructed by the UNDP (UNDP 1990–2013) (hdr.undp.org) combines countries' ranks in educational attainment and life expectancy with their per capita GNI. Before 2010, the HDI combined the three measures by finding the mean of the three scores. After 2010, they were combined geometrically instead. This change significantly increased the weight on the lowest score of the three and reduced the substitutability between the three dimensions of development which were seen as improvements in the methodology. However, it also created other unusual ethical assumptions, such as that the monetary value of an extra year of life in a country like Zimbabwe went from being 1/70th of the value of an extra year of life in the United States to being valued only 1/17,000th (Ravallion 2010a). Across countries, the weight of longevity and education has significantly decreased for most countries, putting greater focus on income, which may not have been the intention and has certainly brought the HDI further from BNA ideals. The HDI has also tended to more closely follow the capabilities approach manner of thinking of about the possibilities people have using aggregated national data rather than on the results individuals face.

At least 13 Latin American countries use a form of unmet basic needs index (NBI) to

measure poverty and identify where greater expenditures and intervention are needed. The modal country uses five indicators. The four factors most countries have in common are: crowding, access to sanitation, access to safe water, and school attendance (Hicks 1998). The dependency ratio, the education level of the household head, housing quality, illiteracy, access to electricity, and malnutrition are also popular indicators. These indicators are generally chosen based on their availability in population census data. The World Bank's Poverty Assessments and Poverty Reduction Strategy Papers have also typically drawn on multiple basic needs dimensions, though relying on them to varying degrees and making limited explicit use of BNA terminology and theory.

The Multidimensional Poverty Index (MPI) was developed for the same UNDP Human Development Report that altered the HDI (Alkire and Santos 2010). Multiple indicators of the standard of living (six), health (two), and education (two) are combined into a ten-item index, eight of which directly correlate with MDGs. Households are classified as poor if they are deprived in at least three of the ten indicators. The MPI's greatest strength lies in its ability to identify patterns of poverty – clusters of unfulfilled basic needs that are correlated with each other within a population subgroup – to enable decision makers to target interventions to address those specific patterns. However, by giving each basic need equal weight, the MPI implicitly argues that the death of a child in the family is morally equivalent to having a dirt floor or owning a radio while lacking a telephone or a mode of transportation.

Ravallion (2010b) provides a thorough critique of the MPI and of similar poverty measures that aggregate deprivations. He mostly defends the notion that multidimensional poverty work should avoid making single “mash-up” indices that combine all the dimensions into a single number, preferring the “dashboard” method because it is in general the joint distribution of those shortfalls that are of interest. He also notes, however, that poverty lines generated from household consumption based on hundreds, or

in some cases thousands, of items are multidimensional even though they are typically called unidimensional. Ravallion (2010b) further notes that while using market prices relates the poverty measure to human choice and human welfare, the aggregation weights assigned by researchers do not reflect local choices and are rarely updated. Particularly from a policy standpoint, it is important to differentiate between ends and means. For instance, people have a basic need for food and nutrition; access to some form of food stamp program may be one means to ensure people are able to fulfill their basic need for food, but lack of access to food stamps is not itself an indicator of poverty. Hicks (1998) debates whether access to water and sanitation are needs in themselves or merely means to the end of health and whether access to education is a need or merely a means to the end of literacy. Hicks (1998) also warns against using indicators of poverty that correlate too closely with income to ensure that each indicator provides useful, independent information.

Summary

The basic needs approach was designed to focus greater attention on nonmonetary aspects of poverty that are absolute, entrenched needs, vital for human welfare. Though its initial success during the 1970s was short-lived, a revival has been underway in both theory and application since at least the Millennium Development Goals. It also served as a foundation for the growth of the capabilities approach.

There is still a gap between theory and empirics in BNA. Theory acknowledges a number of difficulties – such as identifying complete sets of basic needs based on local feedback and the difficulty of assigning meaningful weights to each factor – that are often ignored in practice in favor of the exigencies of what data are available and creating single indices that make it easy to communicate simple policy messages. There is much work yet to do to reconcile practice with theory and to combine the insights of the basic needs, capabilities, and

rights approaches into a more unified and powerful development paradigm.

Cross-References

- Access to Land and the Right to Food
- Cosmopolitanism, Localism and Food
- Extraterritorial Obligations of States and the Right to Food
- Food and Poverty in High Income Countries
- Food Security
- Human Rights and Food

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Pregnancy and Food

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Introduction

Western medicine provides the dominant discourse surrounding pregnancy and birth management throughout much of the world, a view endorsed by the World Health Organization and countless aid agencies, displacing indigenous understandings of pregnancy and its relationship to food in particular.

Until the 1960s, Western medicine viewed the pregnant woman as a body with an insulated, parasitic capsule growing inside it. The capsule within was seen as virtually omniscient and omnipotent, knowing exactly what it needed from its mother-host, reaching out and taking it from her – taking vitamins, minerals, protein, and energy, at her expense if necessary – while protected from all that was bad or harmful.

The pregnancy in this model was almost entirely a mechanical event in the mother, who differed from the nonpregnant woman only by the presence of this thing growing inside her. Differences other than mechanical changes, such as the enlarging of the uterus, were accordingly seen by physicians as symptoms to be treated so that the woman could be kept as “normal” as possible throughout the “stress” of pregnancy. (For a discussion of the medical and midwifery models, see Rothman (1982) and Simonds and Rothman 2007.)

Working with this model, obstetricians did not consider pregnancy as necessarily unhealthy, but pregnancy is frequently associated with changes other than the mechanical growth of the uterus

and its contents: these changes the doctors *did* see as unhealthy. For example, the hemoglobin count, which is lower in pregnant women than in nonpregnant women, makes pregnant women appear (by nonpregnant standards) to be anemic. The result was that doctors treated this anemia with iron supplementation. Water retention, or edema, is greater in pregnant than in nonpregnant women. Obstetricians treated this “condition” by placing limits on salt intake and prescribing diuretics. Pregnant women tend to gain weight in addition to that accounted for by the fetus, placenta, and amniotic fluid. American obstetricians then treated women for this weight gain by putting them on strict diets and sometimes prescribing “diet pills.” Knowing that these changes were very likely to occur in pregnant women, American doctors set out to treat all pregnant women with iron supplements, limits on salt and calorie intake, and diuretics, all in the name of “preventative medicine.”

With the advent of thalidomide, a drug obstetricians prescribed for morning sickness, that passed through the placenta and caused dramatic limb reduction birth defects, an epidemic of “German measles,” and the observable fetal consequences of radiation exposure following the bombing of Hiroshima and Nagasaki, the image of a protected fetal parasite was no longer tenable. The fetus is now understood as a vulnerable “patient” trapped within the confines of the woman's body.

Medicalization of Women's Lives

Bordo (2003) argues that the surveillance of women's eating and drinking preferences during pregnancy is an inevitable flow from the medicalization of women's health in life more generally. From a Foucauldian perspective the moment a pregnant woman steps into the hands of the health professionals, the disciplinary gaze and surveillance of her nutritional status and control over her pregnant body commences. Weight gain, the most obvious indicator of food consumption, comes under immediate medical scrutiny. During the first antenatal visit, the pregnant woman is

usually weighed and her weight gain monitored throughout the pregnancy. Weight gain guidelines shift dramatically across time: In the earlier “insulated capsule” model of pregnancy, weight gain was expected to be limited to the actual weight of the fetus, placenta, and amniotic fluid, and women were reproached for additional weight gain. The switch to the “vulnerable fetus” loosened those guidelines and permitted women to – as appears to be biologically normal for women with access to adequate nutrition – gain extra weight, perhaps in storage for prolonged lactation. The current focus on the “obesity epidemic” brings back more stringent weight gain guidelines. While all women, and indeed all citizens, in the Foucauldian sense, are subject to the medical gaze and the health imperative, this has proved particularly problematic in pregnancy.

From a philosophical perspective, matters of health are sometimes found to be in conflict with values such as freedom or autonomy. If health is understood as being extrinsically valuable, people should be able to sacrifice health as we please without any moral justification. However, if health has an intrinsic value (that we should not cause unnecessary damage to self or others), then it could be considered wrong for a woman to behave in a way that may cause harm to her unborn baby.

Critics have suggested that medicalization has become a cliché of critical social analysis. However, the application of this theory to the subject of food is persuasive, and this is particularly so when pregnancy is considered. Women are burdened with information about diet during pregnancy, and much of it is negatively focused on avoiding pathological conditions such as food-borne infections. There is little that extols the health benefits for both women and their babies of taking a health-based approach to eating during pregnancy. In the medical model, the woman is seen as essentially a barrier to fetal care, and her food choices understood primarily in terms of fetal risk.

An appropriate analogy may be that pregnant women are like players in a real-life snakes and ladders game where if they do the right thing – e.g., avoid soft cheese/stay within a reasonable

weight gain limit/eat no more than one portion of tuna a week – they can climb up the ladder, but if they do the wrong thing, e.g., eat chilled prepared foods or drink one glass of alcohol, they will slide down the snake and be viewed through the lens of the medical world with concern. In fact the scrutiny would seem to extend far beyond the medical gaze, with the media reporting stories of women perceived to be pregnant by cabin crew on airlines, being refused a requested glass of wine in flight. Yet dietary advice is far from being a constant or consistent form of knowledge but is consistently altered to reflect the changing evidence as reported in the media. One year it is the potato that must be avoided, another year it is peanuts. One year the concern is with fats, another it is with sugars. While all citizens are subjected to this information flux, pregnancy is a uniquely time-bound experience: If this is the year that tuna is switched from the good list to the bad list, and this is the year one is pregnant, one faces the potential of lifelong damage inflicted on one’s baby.

Food Rules and Social Control

Food rules and taboos in pregnancy are not at all unique to the modern world of course and can be found across temporal space and cultural boundaries. For centuries Western women have been encouraged to eat for two, to avoid spicy foods, and to follow their instinct for cravings (pica) including eating clay and coal (geophagia). In much of the Eastern world, women are expected to adhere to the cultural practice of balancing “hot and cold” foods and observing those and additional specific food practices while “doing the month” following childbirth. In parts of Africa, cultural taboos discourage women from eating specific fruits and vegetables during pregnancy. There are ritual fasts and ritual feasting during pregnancy found around the world. Pregnant women everywhere and always are subjected to larger social forces than their own unique embodied experiences and appetites. Such is the nature of human life – humans are social beings. What switches over time and space

is who holds the authoritative voice, and in the contemporary world, that is biomedicine.

With more space, one could usefully trace the tales of specific foods that have moved in and out of acceptance as appropriate or dangerous for pregnant women: potatoes, tuna, peanuts, red meat, fats, and more, as already alluded to. Here is one specific enduring example of a Western pregnancy food-related taboo and then a turn to the more general issues of *amounts* of food rather than specific food items.

The specific example is alcohol: There is good evidence that women who are alcoholics, eating the nutritionally poor diet typical of alcoholism and drinking large amounts of alcohol on a regular basis, can indeed birth babies with what is known as “Fetal Alcohol Syndrome,” or FAS. What there is not is evidence that occasional or what is known as “social drinking” has negative fetal consequences. But with the discovery of FAS, alcohol became entirely taboo for pregnant women in the USA, and its path from a research finding to a state-endorsed social policy is itself a fascinating story (see Armstrong 2003). Without supportive data, women who reached for a glass of wine with dinner, who sipped a beer at a party, were subject to formal and informal social sanctions: denied service in public places, reproached by friends and family. Pregnancy warnings appeared on bottles and on restaurant walls. Refusing a drink became one of the earliest public signs of pregnancy, and having any amount of alcohol while visibly pregnant made a woman subject to sometimes extreme approbation and even threats of social services removing the child from her custody at birth. This particular pregnancy taboo built on the long and uniquely fraught history of alcohol in American public policy; the potential risks of peanuts or tuna could not have achieved such public acknowledgement and endorsement so quickly.

The information that people in Western societies receive concerning what constitutes a good diet in pregnancy is certainly influenced by the food industry, which has its own agenda and is, to this point, less regulated and less suspect than the alcohol industry. So who are pregnant women to

trust when it comes to advice relating to what to eat and drink during pregnancy? Far from feeling safe and well informed, it would seem that pregnant women find themselves lost and confused in the dietary maze, as specific foods move in and out of favor.

Too Much or Too Little? The Two Sides of Malnourishment

It is more than ironic that at a point in history where obesity is being flagged as the number one nutritional issue in the world, it is estimated that there are over 800 million hungry people in the world. It would seem that those of us in high-resource-use countries are struggling to keep food energy consumption under control, while in low-resource-use countries, particularly those in sub-Saharan Africa, many are finding it difficult to sustain their nutritional needs and in too many cases are starving. According to the World Bank, 36 countries, mostly in sub-Saharan Africa, are in a food security crisis. This means that globally many millions of women are likely to be grossly malnourished during pregnancy, the major contributor to poor outcomes in terms of both maternal and perinatal mortality. While there is of course food aid, its public face is the hungry baby or child – the pregnant woman is largely absent in the portrayal of world hunger though arguably hunger has its greatest consequences in pregnancy.

Pregnancy and birth are now known to be extremely energy demanding processes with the ingestion of food a crucial part of this process. An increasing body of knowledge around the importance of good nutrition during pregnancy now suggests the adage “you are what you eat” should be “you are what your mother ate.” Diet during pregnancy can have lifelong consequences for the fetus.

There is little doubt that a nutritionally rich diet with a sensible balance of both macro- and micronutrients offers the best possible start in life. Micronutrients in particular may hold the key to protecting the developing fetus from the effects of exposure to toxic chemicals including

teratogens and carcinogens. Suboptimal nutrition may additionally adversely affect the growth of the fetus, and impaired fetal growth is associated with increased perinatal morbidity and mortality as well as infant mortality and childhood morbidity. Studies as early as the post-WWII Dutch Famine Study have demonstrated that pregnant women subjected to food shortage appear to produce babies who are more likely over the life course to develop diabetes, obesity, and cardiovascular disease and experience other health-related problems. What pregnant women eat has long-term potential for health and well-being and has impacts far beyond the period of childhood.

The focus in the developing world regarding pregnancy however has largely been on replacing indigenous childbirth practices with Western-trained practitioners, with far too little attention to the needs of pregnant women over the course of the pregnancy and even less into the prepregnant time. If poor nutrition has such easily demonstrable consequences for maternal and infant outcome, from simple survival to healthy adulthood, it would seem reasonable to suppose that the most effective way of avoiding less than positive outcomes would be to ensure that all women were supported in accessing the best possible dietary intake during pregnancy, in the form of good information, education, and where necessary practical help.

What should not ensue is a “mother blame” approach that reproaches women for eating poorly and placing their babies/children at risk as a result. However, some of the issues arising from the areas of food and diet in pregnancy could be construed as adding additional pressure around what women “should” eat and what they “should” not eat. There is an abundance of evidence that shows that heightened anxiety can increase the stress load for women within pregnancy, bringing a further threat of potential insult for the fetus in the form of increased catecholamines and cortisol levels. These can lead to permanent metabolic and endocrine changes influencing health throughout life. This is especially the case where some pregnant women live in poverty and access to nutritious foods is limited or even nonexistent.

Mother blame is most obvious in the other side of the malnutrition dilemma: obesity. The issue of obesity, weight gain, and pregnancy within a conventional weight-based paradigm has attracted enormous attention in recent years. Pregnant women using maternity services receive clear messages that if they are obese, they have a greater risk of developing a range of complications in pregnancy and childbirth. Obesity has become increasingly medicalized, with its relationship to poor infant outcome often misstated as a *cause* rather than a *correlation*. These “authoritative” accounts often contain overstated claims about the damaging effects of body fat on the health of pregnant women and their babies. Increasingly, health professionals are taught to view obese women as “a statistic waiting to happen.” Not all obese women will present as problematic; the degree of risk will vary with differences between a well-nourished and an undernourished pregnant woman, and weight/fat alone does not capture that distinction.

There is certainly a lack of knowledge among health professionals of the social, psychological, and economical effects that influence obesity as well as personal well-being. This knowledge deficit adversely influences access to maternity services, quality of care, health equity, and outcomes of care, for women who are more vulnerable and disadvantaged.

The very measure of obesity is complicated in pregnancy: Body mass index has been commonly used as a definition that measures too much body fat in pregnant women. Its use is highly contentious. BMI is a height to weight ratio used to measure the “medically defined” condition of “obesity.” In this, a healthy body weight is based on a measure of body fat that falls within a numerical range of 18.5–25. However, this measure has been criticized by both social and medical scientists. It is not consistently applied because there is disagreement among medical practitioners as to what optimum body weight actually is. This has resulted in disagreement on whether obesity should instead be measured by waist circumference although this would seem rather absurd for pregnant women given their growing waist lines.

“Obesing” and fixating on the size of pregnant women’s bodies can detract attention from other areas of their lives where they may benefit from additional support. Fat activists have pointed out that a raised BMI alone does not necessarily constitute a threat if the woman is well nourished and is able to access good levels of support. In contrast, the woman with a BMI which sits within the “accepted” range but is undernourished and does not have a good support network in place may be totally overlooked. By focusing on alleged “risk” factors such as BMI, it is possible that health professionals are missing the big picture and making broad generalizations which are all too often translated into judgment about overweight women (Wray and Deery 2008).

The media, health professionals, and general public leap to groundless conclusions that any possible health risks (e.g., hypertension, diabetes, heart disease, and cancers) are *caused* by obesity. Other legitimate forms of evidence simply do not enter into the public domain for discussion and debate; the risks of obesity are asserted without reference to work that demonstrates otherwise or questions the credibility of the findings. This situation has created a powerful and pervasive discourse where the health risks associated with obesity are often communicated as scientifically based fact and obesity is viewed as a dangerous disease. Global obesity pandemics are increasingly referred to, and the dietary habits of Western societies are now being blamed for increasing obesity rates in developing countries.

As well as having health issues blamed on their body size, obese pregnant women are also more likely, than their counterparts, to receive judgmental comments from members of the health professions. When a more accepting and supportive approach to obesity by health professionals does not happen, social discrimination, stereotyping, and stigmatization occur much more frequently. When these negative social responses come into play, the effect on pregnant women is easily ignored or forgotten, and women are judged on the basis of their size and appearance. Internalized views and opinions about “obesity” can easily be transmitted subliminally

to women and their families increasing the potential for marginalization and lack of uptake of health services, and so the negative attitudes about obesity itself can cause problems (Deery 2011).

A consensus seems to have emerged in the world of scientific research that has not yet made it into medical practice or social awareness, that being obese is associated with a broad range of social, psychological, and economical effects on a pregnant woman’s life. At the same time the failure of the conventional weight-based paradigm has led to a greater consideration of possible risk factors that appear to be correlated with obesity. These include psychological factors, eating patterns, activity levels, family background, and amount of sleep. Associated with discrimination and stigmatization, obese people may externalize a sense of guilt, possibly leading to more negative experiences with health care, a situation exacerbated by pregnancy.

Alternatives to Medicalization

Biomedical reductionism is still the dominant paradigmatic approach in maternity care, with little time or attention paid to a more holistic perspective. In addition and not unrelated, there is an increasingly market-driven approach to maternity care.

Women-centered care following the precepts of the Midwifery Model of Care offers an alternative. In this approach, the individual needs of the woman are assessed and a plan negotiated between the woman and the midwife that enables her to meet her specific needs to optimize the health and well-being of both herself and her baby during pregnancy. Rather than seeing mother and fetus as separate individuals in a potential conflict, midwifery care sees the two as an interconnected whole. Improving the health of the mother, through nutrition as well as other support, is seen as the best way to care for the baby.

During pregnancy women may be more receptive and open to education about food, health, and

well-being. For the first time they may have a sense of their own place in the universe and see a generation ahead. This is a time when further understanding about nutrition and the importance of micronutrients would be useful. Although some midwives have a strong focus on nutrition in pregnancy and can help to educate and navigate women to a healthier or more tailored diet, many midwives – especially those medically trained and in medical settings, such as is the case among many UK midwives and many American nurse-midwives – are actually poorly equipped to assist women to optimize their nutrition during pregnancy. This can be seen to result in a population-based approach to the “management” of nutrition in pregnancy, where women are encouraged to accept a prescriptive one-size-fits-all approach to food and diet which is centered on food safety issues and supplementation of micronutrients.

Supplementing women in pregnancy with a variety of micronutrients from folic acid, vitamin D, and iodine is now common in maternity settings worldwide. However, there is no agreement about what constitutes the correct dosage, when the supplementation should begin, whether it is really necessary, and what are the associated risks of any given form of supplementation. This universal approach may give the message to women that “you are not capable of eating well enough to provide all that your baby needs to grow and develop effectively and here is a medicalized solution in the form of a tablet.” The practice has led to a growing “nutraceutical” market. The food/pharmaceutical industry has recognized this and has effectively constructed a niche market. The advertising images are of healthy glowing pregnant women as a result of taking multivitamins, which may be largely unnecessary if the woman was taking a well-balanced and nutritional diet. The power to create a healthy baby is thus moved from the actions of the mother to medicalization.

There is not in the midwifery model a sense that the needs or desires of the mother must be sacrificed for the good of the fetus or that the mother would indeed have needs that are other

than good for the fetus. For example, midwives repeatedly state that if the mother gives up “junk food” and eats better food for the baby’s sake (less refined, more “natural” foods), the mother will feel better and healthier. There has always been much talk in midwifery and alternative-birth circles about a woman “getting in touch with her body.” That makes sense only if pregnancy is viewed as a normal condition of the female body. The introspection, the psychological turning inward and self-absorption which may accompany pregnancy, is seen as an opportunity for the woman to learn more about her body and its needs and rhythms. A woman’s pregnant body is still very much her own in this model and is not a host to a parasite. Where the medical model sees pregnancy as a stress and a drain on the mother, the midwifery model sees it as a period of physical and emotional growth and development for both mother and fetus.

While medicine attempts to maintain the normalcy of the mother throughout the stress of the pregnancy, viewing deviations from normal (nonpregnant) status as symptoms of disease states, midwifery views the changes as demonstrating the health of the mother. Rather than seeking to change the mother back in the direction of nonpregnant normality, midwifery’s goal was to provide the best possible environment in which the changes of pregnancy could occur.

In the medical model, prenatal care is the *management* of pregnancy, like the medical management of any (other) disease. Nutrition is not much valued in medical care in general and understood more in terms of risk than of health. Even now the “prenatal care” that obstetricians offer women is basically a screening program. The visits typically take 10–15 min or less, in which the woman is weighed, her blood pressure taken, and her urine tested. Blood is drawn for yet more screening and testing. She lies on an examination table, and the fetal heart rate is noted, as is the position of the baby. If she has symptoms to present, these are noted, and remedies may be prescribed. As is often the case in physician visits, a prescription handed over is a way of resolving questions and terminating the

interview. As heretical as it may sound, it is hard to find any evidence that prenatal care improves birth outcomes.

Midwifery care offers a more individualized, culturally competent and specific, nutritionally thoughtful approach, with demonstrably better outcomes. How much of that difference is due to nutrition, and how much to other aspects of midwifery care is yet to be determined.

Summary

Pregnancy has become deeply medicalized, and in dominant medical discourse pregnant women and their behavior are understood primarily as risks to their contained fetus. As such, issues of nutrition and feeding in pregnancy, including food scarcity and obesity as well as specific food taboos, are increasingly understood and controlled through medicine. Midwifery offers an alternative interconnected approach, encouraging healthy eating in the interests of the mother-fetus dyad.

Cross-References

- [Alcohol Abstinence and Sobriety](#)
- [Food Security](#)
- [Medicalization of Eating and Feeding](#)

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Private Food Governance

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Synonyms

Access to food; Effectiveness; Legitimacy; Private standards

Introduction

Food is essential for sustaining the health status of a population. Currently, almost 870 million people are chronically undernourished, while the number of hungry people remains “unacceptably high” according to the Food and Agriculture Organization (FAO 2012a, p. 8). Yet, already one-third of the earth's surface and 70 % of global extracted water are used for food production (OECD 2010). At the same time, estimates by the World Health Organization (WHO) presently pertain that more than 1.4 billion adults are overweight and 65 % of the world's population live in countries where overweight and obesity kills more people than underweight (WHO 2012). Next to hunger and obesity challenges, an estimated three million people around the world, in developed and developing countries, die every year from food-borne diseases, with millions more becoming sick (Lang and Heasman 2004). Such disease occurrences can easily escalate to a food safety emergency situation, which has the potential to adversely impact national economies and livelihoods and reduce the availability of food for national consumption.

Food provision is often associated with poor working conditions, limited access to social protection, and lack of enforcement of labor legislation (FAO 2012b). Rural labor markets tend to be highly informal, with a prevalence of casual work

arrangements and information asymmetries, as well as gender and age-based inequalities (FAO 2012b). Currently, around three billion people work in agriculture mainly in developing countries, with 43 % of agricultural labor in these countries being women (FAO 2012a). In least developed countries, the share of the total population economically active in agriculture was 66 % in 2009. This accounts to more than double the share of agriculture in GDP (FAO 2012a). Correspondingly to these figures, it is embraced that poverty is concentrated in rural areas since people who work in agriculture tend to have lower incomes. Being at the same time the least organized and least protected by legislative frameworks, rural worker's ability to challenge existing conditions is blatantly limited (FAO 2012b).

Environmental impacts related to food are also problematic and cover all stages of the food chain, from food agricultural production to processing, packaging, distribution, and waste. More specifically, the food sector, via fertilizer applications, manure, transportation, energy consumption, and deforestation, is a major contributor to direct and indirect greenhouse gas emissions. Besides the problem with energy retrieval, common environmental threats like the generation of waste, water pollution, pesticide use, and decline of biodiversity constitute other typical concerns. Moreover, the growing industrialization and intensification of agriculture has been linked to the continuing decline of biodiversity in agricultural areas. Intensive agriculture is also considered responsible for extensive drainage and extraction of groundwater, causing groundwater shortages, decline of groundwater-dependent ecosystems, and poor water quality. Similarly, the capacity of agricultural soils, crucial for a continued supply of high-quality foodstuffs, is endangered due to intensive use of the land.

As the food system approaches or crosses its natural and social boundaries, the need for effective and legitimate institutional responses becomes a challenge for both scientists and policy-makers. In this context, business and civil society institutions are often advocated as a panacea for the development of solutions to

various environmental and social problems and externalities. Particularly private governance initiatives in the form of private standards and certification schemes appear to have progressed to a mainstream approach to pursuing sustainable agricultural development.

Drawing on previous research and publications by the authors, this short entry, therefore, aims to give an overview of the most prominent private institutions developed to address environmental and social sustainability challenges in the global food system and to sketch some of the most controversial debates surrounding the privatization of food governance. The transformations that led to the emergence of private food governance are discussed first.

Transformations Leading to Private Food Governance

Today, private actors, particularly transnational corporations (TNCs) and civil society organizations, go far beyond their traditional political role as lobbyists by directly engaging in global food governance (Fuchs et al. 2011a). These private actors create institutions to “govern – that is, [...] enable and constrain – a broad range of activities in the world economy” (Büthe 2010, p. 1). State authority is either not present at all or not the predominant form of political authority in these private food governance initiatives. Two sets of transformations fostered and enabled the latter's development: normative and structural material transformations.

Normative Transformations

In the past four decades, a shift in the objectives of agriculture and food policies from food sovereignty and a fair standard of living for the farmers to sustainable development have taken place, particularly in industrialized countries. Indeed, at the end of the Second World War, issues of food security, land reforms, increasing productivity, and technological improvement were favored on the political agenda. The aim to produce enough affordable food for the population led to state-driven policies supporting the

industrialization, intensification, and rationalization of agricultural production at the national level. In a process described as the “Green Revolution,” worldwide agricultural productivity increased transforming agriculture from a relatively backward and highly labor-intensive economic sector toward one of increasing technological sophistication.

Although early agriculture and food policies were successful in their objectives, they created numerous environmental and food safety problems. Accordingly, the aims and operation of subsequent policies shifted, and sustainable development became one of the core objectives of agricultural and food policies today, i.e., they increasingly considered environmental and social consequences, in particular food safety, in addition to economic and food security concerns. Environmental, ethical, and health aspects became inalienable for policy-makers realizing that agricultural and food policies should not only concentrate on securing the income for producers and sufficient food for society. Some stakeholders and chain actors, such as consumers, farmers, and retailers, increasingly shared such environmental, social, economic, and/or ethical concerns. As such, the quest for food sufficiency has now become a quest for food sustainability.

At the same time, the general normative environment in the political economy of Western states dominating the global agricultural system was characterized by a highly positive evaluation of market-based actors, norms, and governance strategies. The assumption that positive effects for the market translate into positive effects for society combined with a trust in the expertise, resources, and management capabilities of market actors fostered the attribution of greater governance competence to them. Government actors, in contrast, were frequently described as slow and inefficient if not corrupt, and their limited territorial jurisdiction and failure to reach international agreements used to further highlight their weakness. Encouraged by the end of the cold war, practitioners as well as scientists celebrated the idea of governance rather than government, building on presumptions of shared interests of state and non-state actors (across countries)

(Rosenau and Czempiel 1992; for a critical evaluation of these governance discourses, see Fuchs (2007)). Thus, a generally favorable atmosphere for private governance existed.

Structural Material Transformations

Structural material transformations have simultaneously taken place. These changes in the agrifood sector started with the Uruguay Round (UR) (1986–1994) of the General Agreement on Tariffs and Trade (GATT), which focused on reducing barriers to trade in agricultural commodities *worldwide*. The resulting Agreement on Agriculture (1995) continues to weigh in on global agricultural politics until today, with the activities of the World Trade Organization (WTO). The resulting liberal regime to agriculture brought dramatic changes to the global food sector. The pressures for competition in the global market intensified. As a consequence, concentration of production and integration of supply chains took place, initially occurring on the supply side of food chains (Morgan et al. 2006; Josling 2002). Particularly in the USA, conglomerates such as ConAgra and Cargill became big and powerful players in food production and manufacturing.

However, a number of developments in food retailing fostered by new food, communications, and transportation technologies led to shifts in power toward the end of the supply chain, specifically food retailers (Fuchs and Kalfagianni 2010; Henson and Reardon 2004; Nadvi 2004). First, the number of consumers increased globally, strengthening retail chains due to their strategic position between consumers and producers. Second, retailers do not depend on natural constraints which give them advantages in relation to suppliers (Morgan et al. 2006). In case of a draft in one country, for instance, retailers can source their supplies elsewhere. Third, technological changes like GPS control of transportation and deliveries by the minute helped retailers control the supply chain in a “from farm to fork” kind of manner. Last and most fundamentally, capital concentration led to the creation of big multinationals among the (food) retailers. Through global acquisitions and mergers, a diminishing

number of internationally operating supermarket chains have risen to the top. Their market share increased constantly in the last two decades and led to the emergence of highly oligopolistic regional market structures (Burch and Lawrence 2005, 2007; Konefal et al. 2005; Fuchs and Kalfagianni 2010). Currently, the top 10 global retail chains control 40 % of total global sales, with Wal-Mart alone being responsible for 10 % (Clapp 2012).

This shift in objectives of agriculture and food policies and the rise of private actors, particularly food and retail corporations, as dominant players in the world food economy allowed and fostered the emergence of private food governance. They created both the demand for and supply of the pursuit of sustainability objectives on the basis of private – rather than public – institutions. Among these institutions, private standards are the most concrete form of private governance, as briefly discussed below.

Private Food Standards

Private standards are defined as rules of measurement established by regulation or authority (Jones and Hill 1994). Private standards tend to be voluntary in nature and rely on various sorts of certification mechanisms to identify actors complying with the principles defined in the standard.

Most private food standards are developed by the “new food and lifestyle authorities,” which is how Dixon calls food retailers (Dixon 2007, p. 30). Via private food standards, food retailers have gained a dramatic influence on market structures and characteristics in recent years. Prominent examples of food retail standards are the British Retail Consortium Technical Standard, the Global Food Safety Initiative, and the GlobalGAP (see Fuchs et al. (2011b) for more detailed information).

Created in 1998, the British Retail Consortium Technical Standard regulates the evaluation of manufacturers of retailers’ own brand products. Certification in accordance with this standard today is required for suppliers of the majority of UK and Scandinavian retailers (www.brc.org.uk).

The standard itself consists of more than 250 requirements and includes norms for food safety and quality schemes, products and process management, and the personal hygiene of personnel; for most UK and Scandinavian retailers, BRC certification is required in order to consider business with these suppliers (www.brc.org.uk). The BRC Technical Standard was followed by the BRC Packaging Standard in 2002 and the BRC Consumer Products Standard in 2003. Each of these standards is revised and updated at least every 3 years.

A group of international retailers and global manufacturers initiated the Global Food Safety Initiative in 2000 with the expressed aim of improving consumer protection and strengthening consumer confidence. The initiative currently covers 65 % of worldwide food retail revenue setting requirements primarily for food safety. Furthermore, it aims to improve efficiency costs throughout the food chain.

The Global Partnership for Good Agricultural Practice (GlobalGAP, known as EurepGAP until 2007) was developed in 1997 by a group of retailers belonging to the Euro-retailers Produce Working Group (Eurep). Initially, EurepGAP focused only on fruits and vegetables. It soon was extended to meat products and fish from aquaculture as well, however. Producers are certified on the basis of a checklist consisting of 254 questions divided into 41 “major musts,” 122 “minor musts,” as well as 91 recommendations (“shoulds”). Traceability and food safety are counted as major must practices, while minor musts and shoulds include both environmental and animal welfare concerns.

Next to retailers, processors, producers, and their associations are also engaged in governance activities in the agrifood sector, albeit to a smaller extent. Examples of producer-led governance efforts include the creation of alternative food initiatives, such as roundtables for sustainable biofuels, palm oil, sugar, and cotton, and organizations dedicated to the promotion of organic agriculture, for instance (Morgan et al. 2006).

Many of private governance initiatives developed by retailers, producers, or cooperative arrangements between the two also include the

participation of civil society organizations, such as Oxfam, the World Wild Fund for Nature (WWF), or Consumers International. The degree to which these organizations participate in the governance of the standard setting organizations varies, however (Fuchs et al. 2011b). While a few organizations grant them an active role in decision making, in most initiatives they are restricted to an observational position.

Major Debates Related to Private Food Governance

Importantly, the emergence and proliferation of private food governance is not uniformly regarded as a promising new avenue in addressing sustainability challenges, particularly at the global level. In the literature, three major debates related to private food governance can be identified. They revolve around questions of legitimacy, effectiveness, and access. The following paragraphs sketch the central tenets of these debates.

Legitimacy

According to Scott (1998), legitimacy is the property of a situation or behavior that is defined by a set of social norms as correct or appropriate. As outlined by Fritz Scharpf (1997), in modern (Western) traditions of democracy, legitimacy rests on two pillars, one based on input-oriented arguments, i.e., government by the people, and one based on output-oriented arguments, i.e., government for the people. According to input-oriented arguments, legitimacy derives from democratic procedures and formal arrangements. According to output-oriented arguments, on the other hand, legitimacy derives from the effectiveness of the specific governance institution in designing policies that promote the “public good.”

For examining the input legitimacy of private (food) governance arrangements, three criteria have been identified as important: participation, transparency, and accountability (Porter and Ronit 2010). While participation refers to the question of involvement in policy process, transparency refers to the provision of timely, reliable,

and comprehensible information. It is an important dimension of legitimacy enhancing public scrutiny and visibility in complex environments, thereby also strengthening meaningful participation and ensuring accountability (Fuchs et al. 2011b). Accountability on the other hand is a crucial idea in democratic governance capturing decision-makers’ dependence on the public that ought to have the potential to “vote” them out of office (Porter and Ronit 2010).

The criticism of private food governance addresses these three criteria of democratic legitimacy. In terms of input legitimacy, critical observers draw attention to a lack of transparency and participation that characterizes many private or public-private schemes. Particularly constraints in participation provide a serious obstacle to the provision of equal opportunities to different societal actors to influence the norms and rules that govern the food system (Fuchs and Kalfagianni 2010). Discrimination in access exists especially for civil society actors and actors from developing countries but also smaller business actors and those that are further away from the consumer, e.g., small farmers. A lack of transparency also weakens the democratic legitimacy of private governance mechanisms. If private actors develop their own rules, then at least these rules should be open to public scrutiny. This lack renders (existing) access, meaningless, due to the obscurity of the real options actors can “vote” for. In most cases, this results from the exclusion of civil society in the monitoring and implementation of standards. Finally and in almost the same manner, accountability is problematic when it comes to private food governance. With private governance institutions, accountability and mechanisms to ensure it are not predefined. To the contrary, transnational corporations are at best only accountable to a fraction of the people affected by their activities (Zürn 2004). Moreover, accountability is difficult if not impossible to enforce for efforts such as vague standards and CSR initiatives.

Despite these criticisms, the difficulty of developing measures that provide input legitimacy for private governance institutions does not escape scholars. It is a challenge to create a level playing

field in participation, for instance. First, this would require a definition of who should have the right to participate. Moreover, such measures would require support for those facing resource or collective action problems hindering their participation. Similarly, it is extremely difficult to create conditions of accountability and to decide to whom private actors should be accountable in their standard setting activities and how. While transparency may seem an easy and technical, politically benign issue, the challenge of creating transparent private governance institutions should not be underestimated, either. In the past, requests for more information from business actors have often been met with arguments that such information cannot be provided due to competitiveness concerns (see Fuchs and Kalfagianni (2010) for a more detailed discussion). In short, private food governance not only suffers from input legitimacy shortcomings at the moment, but these shortcomings also seem extremely difficult to overcome.

Effectiveness

For private forms of governance, effectiveness or output legitimacy is frequently identified as a foundation for their legitimacy. After all, private actors are not elected to political office and thus not endowed with electoral authority to set rules and determine the societal allocation of values. Instead, legitimacy claims of private governance initiatives tend to derive from the notion that they can provide certain governance functions more effectively and efficiently than elected public actors (Fuchs and Kalfagianni 2009). Thus, proponents of private governance attribute efficiency and effectiveness to their pursuit of the “public good,” in the context of global economic liberalization and increased corporate control of markets and supply chains (Bäckstrand 2006; Glasbergen 2010). In contrast, critics argue that private governance institutions are in many respects analogs to the same things they are purported to resist, and instead of fostering public goods, they extend market fetishism and undermine public national and international law (Clapp 1998; Gibson 1999; King and Lenox 2000; Quilliam et al. 2011). At best, so the critical perspective, private governance is effective only in limited circumstances and, at

worst, it preempts more stringent public regulation, undermining basic core democratic values and principles.

The effectiveness of private food governance has been examined in the literature vis-à-vis its ability to address various sustainability challenges. Especially in the field of food safety, various scholars attest a positive influence of private standards (Mazzocco 1996). Moreover, they argue that standards can be a means for reaching more consumers by communicating and reassuring them regarding safety and quality (Reardon and Farina 2002). However, these apparent benefits are likely to exist only for a small subset of the original set of suppliers (Reardon and Farina 2002). Likewise, other evaluations point out the potential of private food standards to provide incentives to modernize production and allow competitive repositioning and enhanced export performance of developing countries (Jaffee and Henson 2004). The question to what extent resources for such measures exist, especially for small- and medium-sized farmers in developing countries, however, remains (Fuchs and Kalfagianni 2009).

With respect to the environmental consequences of private food governance, the jury is still out. Environmental auditing of food-related operations is currently incomplete and covers only specific products or practices rather than the sector as a whole (Lang and Barling 2007). Nevertheless, some observations can be made. In particular, the selected nature and low priority of environmental aspects in the most prominent private food governance initiatives are noteworthy. For the GlobalGAP, for instance, which is currently present in more than 100 countries and covers 94,000 suppliers worldwide with growing membership every year, many environmental conservation practices are only recommendations. In addition, a supplier's noncompliance does not always prevent certification (Bartley 2010). The potential of GlobalGAP is further weakened by the declining emphasis on sustainability within the GlobalGAP initiative from its launch in 1997 until today (Van der Grijp 2008). In general, the question remains whether retail environmental standards are stringent and comprehensive enough to allow

the reaping of significant environmental benefits (Fuchs et al. 2011b).

Finally, the effectiveness of private food governance in terms of social sustainability needs to be discussed. Private standards may include provisions regarding worker welfare, gender nondiscrimination, rules against sexual harassment, and other social provisions. However, such social provisions tend to play a secondary role relative to the current understanding of food quality, as well. Some scholars argue that the presence of these standards can improve labor conditions, raise wages, and increase workers' security (Schaller 2007; Pearson 2007). However, due to their select and weak nature, social standards also suffer from a number of constraints in terms of both their scope and implementation, which severely limit their potential for effectiveness with respect to social sustainability. Fundamental challenges, such as living wages, tend to be excluded.

In short, while private food governance has been effective in addressing some sustainability challenges, specifically food safety concerns, overall its performance is highly ambiguous.

Allocation/Access

The third major debate concerns questions of the global allocation of resources and access to food. Specifically, scholars voice the concern that the ability provided to transnational corporations (TNCs) to exercise gatekeeping control over supply chains on the basis of private standards has also fostered inequality in access to food for some groups (see Fuchs and Kalfagianni 2010). Some studies identify a potentially higher income for food suppliers, as a result of premiums to be gained or increased productivity or quality (ITC 2009). Yet critics argue that such benefits accrue only to a small subset of global suppliers, specifically those who are able to afford the costly investments and the lengthy and expensive auditing and certification processes associated with private standards (Auld et al. 2008; Klooster 2005). In contrast, small- and medium-sized farmers tend to lack the economic ability to take advantage of such opportunities (Amekawa 2009; Guthman 2007). It is estimated, for instance, that a total of over UK £2.2 million

has been invested to meet the initial costs of GlobalGAP compliance in Kenya alone, representing, on average, UK £220,000 per participating company (Graffham et al. 2007). Although costs differ for small- and medium-sized companies, small-sized producers tend to depend on donors' willingness to subsidize certification (Graffham et al. 2007). In this context, the most vulnerable and financially weak actors can be pushed out of the supplier market, not being able to comply with private standards (Fuchs and Kalfagianni 2010). Thus, the constraints imposed by private standard on suppliers may affect their access to the market as much as to food, due to the existing oligopolistic market structures (Mayer and Gereffi 2010). Small suppliers in some of the most food-insecure countries have lost their livelihoods as a result of private standards (ActionAid 2005). Considering that a significant segment of the global population consists of small and subsistence farmers, this observation becomes even more dramatic. Out of the approximately 525 million farms worldwide, about 85 % currently belong to smallholders or subsistence farmers who operate plots of land of less than 2 ha (Nagayets 2005). Subsistence farmers constitute over half of the world's rural poor, but they produce about four-fifths of food supplies in developing countries (<http://www.fao.org/docrep/u8480e/U8480E08.htm>, 16 June 2012).

In short, private food governance receives ambivalent evaluations, in terms of its impact on access to food, with small and subsistence farmers being particularly negatively affected.

Summary

This entry gave an overview on the most prominent private institutions developed to address environmental and social sustainability challenges in the global food system. It outlined the transformations that led to the emergence of private food governance and sketched some of the most controversial debates surrounding the privatization of food governance, particularly related to questions of legitimacy, effectiveness,

and access. Regarding legitimacy, it noted scholarly concerns from the perspective of participation, transparency, and accountability. Regarding effectiveness, it underscored the ambiguous contribution of private food governance to food safety, environmental sustainability, and labor rights concerns. The discussion underlined the especially problematic relation between private food governance and access to food for some groups, specifically the most vulnerable members of the global population. In short, one core message from this entry is that while private food governance carries some promise, it by no means constitutes a panacea for addressing sustainability challenges in the global food system.

Cross-References

- [Corporate Social Responsibility and Food](#)
- [Food Labeling](#)
- [Food Security](#)
- [Private Food Governance](#)
- [Sustainability of Food Production and Consumption](#)

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Provision of Agricultural Ecosystem Services

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Synonyms

Agricultural ecosystems; Conservation agriculture; Ecosystem services; Sustainable agriculture

Introduction

An ecosystem is a community of living organisms, including plants, animals, and microbes, plus the nonliving components of their environment, such as water and minerals, interacting together as a system or an ecological unit (e.g., a pasture or forest). Ecosystems may also be viewed as a form of natural capital, which provides flows of vital goods and services to humans (e.g., Daily 1997). These goods and services are called ecosystem services (ES) and are often defined as the “benefits people obtain either directly or indirectly from ecosystems” (MEA 2005). Many ES are critical to human survival (e.g., climate regulation and nutrient cycling), while others contribute to our well-being (e.g., nature recreation and rural lifestyles) (Kremen 2005).

Scientists and scholars have traditionally focused on natural ecosystems, such as wetlands and ponds, for ES provision (e.g., Daily 1997). However, other scholars are beginning to recognize the crucial role agriculture plays in ensuring humans receive an adequate flow of ES to sustain our quality of life (e.g., Swinton et al. 2007). The reason is that agricultural ecosystems comprise about half of global land that is not desert, tundra, rock, or boreal, which makes farmers the chief managers of the most productive lands on Earth (Tillman et al. 2002). How farmers manage this land greatly impacts human health and well-being, the land’s future productivity, neighboring ecosystems such as wetlands and forest, and the sustainability of the world’s food supply (Foley et al. 2005; Horrigan et al. 2002). Despite this importance, most farmers face strong incentives to manage their land for the short-term production of food, fiber, or fuel. The long-term health of agricultural ecosystems, however, as well as their ability to sustain food production and to provide society with diverse benefits, requires that farmers expand their management focus to include the provision of ecosystem services (ES) (Goldman et al. 2007; MEA 2005). In fact, some scholars argue that one of the greatest needs in agriculture, if not the greatest, is the provision of nonproduction-related ES such as water purification and climate regulation (e.g., Antle and Capalbo 2002).

Thus, one of the most fundamental ethical issues surrounding the provision of ES is how to encourage farmers to promote, develop, and manage ES – that is, how to encourage them to overlook short-term incentives to focus primarily on production-related agricultural services and adopt a longer-term public interest perspective by considering the provision of ES. Some relevant questions include: What ES ought to be provided? Do people have a right to specific ES, such as water cycling, clean air, or climate control? If so, whose duty is it to provide ES? If it is the farmers’ duty to provide agriculture-related ES, should farmers be paid for provision? If so, how much should they be paid, how should their provision be monitored, and how will we know when society has enough ES? If farmers are not paid for provision, what other incentives must be created to ensure enough ES are provided to sustain our quality of life? (For a discussion, see Swinton et al. 2007; Kroeger and Casey 2007; Power 2010).

The importance of understanding incentives in the provision of ES can be illustrated in two ways. First, some traditional agricultural products and ES, such as corn and pest control, can be complementary products, creating a win-win situation for agricultural producers. For example, setting aside a small area of land as habitat for crop pollinators provides a vital ES, which in turn might increase the value of crop production by more than the opportunity cost of the income forgone from not planting the habitat area in crops (Wossink and Swinton 2007). Conversely, many traditional agricultural products and ES are competitive products, creating a win-lose scenario in which the farmer has little incentive to provide the ES (Wossink and Swinton 2007). These competitive ES include flood control, carbon sequestration, and water purification – vital ES that our society highly values, yet which are underprovided (Lant et al. 2008).

Second, agricultural activities that result in harm to the environment, such as intensive livestock or crop production that results in animal wastes or chemical fertilizers seeping into aquatic ecosystems, could become positive ES with the right incentives. Often what is needed is a change in just a few management practices.

Provision of Agricultural Ecosystem Services, Table 1 Selected ecosystem services (ES) and ecosystem disservices (ED) from agriculture

ES type	ES from agriculture	ES used as inputs	ED from agriculture
Regulating services	Soil retention	Soil retention	Soil erosion
	Pollination	Pollination	Competition for pollination
	Pest control	Pest control	Pest outbreaks
	Water purification		Nutrient runoff
			Pesticide runoff
	Habitat provision		Habitat loss
	Atmospheric regulation		Greenhouse gas emissions
	Flood control		Flooding
Supporting services	Seed dispersal		Loss of seed dispersal
	Soil structure	Soil structure	Soil compaction
	Soil fertility	Soil fertility	Soil fertility loss
	Biodiversity	Genetic biodiversity	Biodiversity loss
	Water cycling	Soil moisture	Soil moisture loss
			Competition for water from other ecosystems
Cultural services	Nutrient cycling	Soil nutrients	Eutrophication of rivers, estuaries, and lakes
	Aesthetic landscape		Loss of aesthetic value
	Recreation		Loss of recreation value
	Spiritual well-being		Loss of well-being
	Rural lifestyles		Loss of rural culture and lifestyles
Production services	Food		
	Fuel		
	Fiber		

Source: Reproduced from Stallman (2011)

For example, the siltation of streams resulting from tillage agriculture can become an ES of soil retention with the adoption of conservation or no-tillage practices, grassed waterways, or permanent vegetative buffer zones beside streams and lakes.

Accordingly, this entry articulates the ethical issues of providing ES in agriculture, with a particular focus on the incentives farmers face to do so. Specifically, the objectives of this entry are to discuss ecosystem services and the critical role agriculture may play in ES provision and to discuss the three types of solutions currently being considered to help solve the underprovision of agriculture-related ES.

Ecosystem Services in Agriculture

Although the provision of ES in agriculture sounds complex, it can be viewed simply as the efforts of agricultural producers to enhance the

viability and stability of agricultural ecosystems by choosing management practices that jointly produce nonproduction-related ES alongside livestock and crops.

Dale and Polasky (2007) identified three critical ways in which agriculture interacts with ES. First, agricultural ecosystems provide many vital ES. As shown in Table 1, these include production services such as food, fiber, and fuel; regulating services such as soil retention, carbon sequestration, and pest control; supportive services such as nutrient cycling, soil fertility, and water filtration; and cultural services such as spiritual well-being, nature recreation, and rural lifestyles. Although agricultural ecosystems have traditionally been managed to primarily provide production services, they may also be managed to provide other ES jointly with food, fuels, and fiber (Wossink and Swinton 2007; Dale and Polasky 2007). In fact, the type, quality, and quantity of ES that agriculture can provide are directly affected by the management decisions of

the farmers, both individually and collectively (Dale and Polasky 2007).

Second, agriculture requires many ES as inputs to production, especially soil fertility, pollination, genetic biodiversity, nutrient cycling, and pest control (Zhang et al. 2007; Power 2010). Some of these ES are provided by the agricultural ecosystem itself, while others are provided by nearby natural ecosystems that exist within the greater agricultural landscape, such as woodlots, wetlands, and ponds (Zhang et al. 2007). Whether any particular agricultural ecosystem provides these input-related ES depends on the management decisions of farmers, including the farmer who uses the ES for production and the neighboring farmers (Goldman et al. 2007; Dale and Polasky 2007; Power 2010).

Third, agriculture affects the quality and quantity of ES which other ecosystems, such as forests or estuaries, can provide (Dale and Polasky 2007). If the effects on other ecosystems are negative, they are called “disservices” of agriculture and often lay on the opposite end of a continuum from some important ES. For example, if a farmer practices conservation tillage, the farmer’s land may provide the vital ES of soil retention. If a farmer uses conventional tillage practices on sloped fields, however, the land may provide the opposing disservice of soil erosion, plus the resulting environmental degradation caused by stream sedimentation, loss of soil fertility, and the chemical contamination of water. These disservices in turn affect the quantity and quality of ES that the stream or downstream lakes and estuaries can provide (Dale and Polasky 2007; Zhang et al. 2007). For example, a lake that is contaminated with phosphorus, nitrogen, pesticides, and sediments provides fewer ES and lower-quality ES, such as wildlife habitat, biodiversity, and nature recreation, than a lake that has not been contaminated (Zhang et al. 2007).

As a result of these three ways in which agriculture interacts with ES – the ability to provide ES, the requirement of ES as inputs, and the ability to affect neighboring ecosystems’ provision of ES – managing agricultural lands to

provide more and higher-quality ES has the potential to greatly increase the sustainability of agricultural ecosystems, to increase the sustainability of neighboring ecosystems, and to decrease the environmental damage which may accompany intensive agriculture (Horrigan et al. 2002; Tillman et al. 2002; Foley et al. 2005; MEA 2005). Most scholars agree, however, that increasing the provision of ES in agricultural ecosystems will not be easy (e.g., Goldman et al. 2007) and will likely require society to change the incentive structure that farmers currently face (e.g., Swinton et al. 2007).

Incentive Structures in Agricultural Ecosystems

Although joint production of traditional agricultural products, such as corn, and nonproduction-related ES, such as wildlife habitat, is both possible and desirable (Wossink and Swinton 2007; Robertson and Swinton 2005), most farmers face strong incentives to manage their land for the short-term production of food, fiber, or fuel, often at the expense of other vital ES (Tillman et al. 2002; Swinton et al. 2007). For example, most farmers manage their land for the provision of production-related ES, such as wheat, because these services are private goods; the farmer enjoys most of the benefits of production (e.g., income from the crop) but does not pay all of the costs (e.g., loss of income in a downstream community due to eutrophication of fisheries from excess nitrogen in the water). Likewise, farmers disfavor the provision of cultural, supportive, or regulating ES, such as water purification, because the farmers pay all (or most) of the costs of provision (e.g., leaving land out of production next to a stream) but only enjoy a portion of the benefits (e.g., better bird watching on the farm). In some cases, farmers pay all of the costs of provision but receive no benefits, either because their efforts have no discernible effect on the ES (e.g., one farmer’s effort to improve water quality in a large lake) or because the ES is appropriated by other users (e.g., flood control for downstream communities).

Incentive structures where the provider pays all or most of the provision costs but only receives a portion of the benefits are associated with public or quasi-public goods, which are how most scholars classify ES (e.g., Swinton et al. 2007). This incentive structure leads to an underprovision of ES because of the free-rider problem; people have little incentive to pay the cost of providing a public good when someone else might pay the cost of provision, and the non-payer or free rider can still enjoy all of the benefits of the good (Olson 1965).

Solutions to the free-rider problem usually involve government provision or a restructuring of incentives to encourage private provision. How to best restructure these incentives, however, is an ethical problem that scientists, scholars, and other stakeholders have yet to solve. Many scholars believe the traditional government and market solutions for the provision of public goods will provide the most effective way to increase ES provision in agriculture (e.g., Kroeger and Casey 2007). A growing number of scholars, however, recognize the potential of a third major approach – cooperative solutions where landowners work together to provide ES (e.g., Sarker et al. 2008). In fact, some agriculture-related ES are particularly well suited to cooperative provision (Stallman 2011). The following sections describe these three major approaches to ES provision.

Market and Government Solutions

In the case of agricultural-based ES, government and market solutions are designed to reduce the free-rider problem by changing the incentive structure that farmers face. This may mean (1) increasing the cost of not providing an ES (e.g., assessing a fine if a farmer fails to create a buffer zone along a stream corridor) or (2) increasing the benefit of ES provision (e.g., creating a mechanism for farmers to receive price premiums on products that are produced in conjunction with ES). These solutions to ES provision may include legal approaches, such as liability laws and property rights; policy

approaches, such as taxes and subsidies; educational approaches, such as extension services and public education classes; induced market approaches, such as cap and trade and regulation-driven markets; and free-market approaches, such as eco-labeling, food tracing systems, and marketing cooperatives dedicated to sustainable agriculture (Kroeger and Casey 2007; Bräuer et al. 2006; Swinton et al. 2007).

Although these government and market solutions have the potential to increase ES provision in agriculture, many controversies and barriers to their implementation exist. For example, many government and market solutions may be costly to implement, monitor, or run (e.g., Power 2010; Kroeger and Casey 2007). Measuring and monitoring of ES may be especially problematic because many ES are so interrelated that it is hard to distinguish one from the other or to define them, so double counting becomes a risk (Dale and Polasky 2007; Swinton et al. 2007). Plus, we do not currently have the technical ability to measure some ES accurately enough to monitor provision (Swinton et al. 2007). Other barriers to market and government solutions include (1) the cost of creating and running new markets, such as a carbon exchange market; (2) the cost of creating and running a certification systems, such certified organic products; (3) the costs of regulating the opposing disservice if ES are not provided, such as regulating nonpoint source pollution in streams; (4) start-up costs for farmers, such as the equipment, education, and input costs associated with switching from conventional tillage to a no-tillage system; (5) information costs, such as technical knowledge of the management practices that will provide ES or the knowledge of why ES may be important to agricultural sustainability; (6) lack of trust in the governmental agency responsible for the payment of ES program, such as a state conservation agency (e.g., Raedeke et al. 2001); and (7) social and psychological costs, such as fear of the unknown or the social risk of being different (Carolan 2005, and Koundouri et al. 2006).

Consider a farmer who wants to practice integrated pest management (IPM) as part of a program to improve water quality in a stream

used for municipal drinking water in a downstream rural community. To effectively practice IPM, the farmer must know how to monitor soil, crops, and pest populations in order to target the timing, placement, and amount of fertilizer or pesticide needed to achieve the greatest benefit for the crop without using excess chemicals (Flint and Van den Bosch 1981). This skill set requires knowledge and experience that many farmers and extension personnel lack or cannot find access to, despite increasing demand for the knowledge (e.g., Carolan 2006; Rodriguez et al. 2009; Hayes 2001). In fact, Carolan (2005) found that almost three-quarters of extension personnel and agricultural professionals in Iowa lacked the technical knowledge to assist a farmer in implementing sustainable agricultural practices such as IPM. In addition, many sustainable farming practices such as IPM are proven effective when used together as a management system, but may not be cost- or time-efficient when used alone (Carolan 2006). For example, farmers practicing basic IPM techniques, such as monitoring crops for pests, may also benefit from knowing how to enhance pest control through cultivation techniques, crop rotations, disease- or pest-resistant cultivars, the use of cover crops, or a complete redesign of the farmers' operation to enhance the ecological processes that would make use of pesticides or herbicides unnecessary. Again, information costs for these complementary practices are high, as are the start-up costs for the farmer, especially those who are redesigning their operation, not just making minor changes to conventional practices (Macrae et al. 1993). Farmers who practice IPM may also face social costs in the form of criticism or trust issues with neighbors or landowners who hold traditional beliefs that "weedy" fields and "unkept" hedgerows reflect poorly on the farmer's character (Carolan 2005, 2006). Finally, the full benefits of IPM may be hard to monitor. For example, IPM not only may provide the ES, such as water quality, but may also provide or enhance other vital ES, such as soil fertility, soil structure, soil retention, nature recreation, water cycling, natural pest control, and pollination services, some of which are so interrelated that it

would be hard to monitor them separately (Barrios 2007; Dale and Polasky 2007; Swinton et al. 2007). How the farmer or a government agency responsible for payments for ES will recognize and monitor these changes is uncertain.

Although farmers and government officials face many implementation barriers to government and market solutions, many scholars believe these solutions may help encourage the provision of agriculture-related ES (e.g., Kroegeer and Casey 2007). Some scholars, however, question if these traditional approaches to the free-rider problem are enough (e.g., Goldman et al. 2007). The goal of most government and market solutions is to entice enough farmers to manage their land for the provision of nonproduction-related ES so that a socially desired quantity of ES is achieved. One potential problem with these approaches, however, is that they often ignore the fact that many ES require landscape-level management to provide optimal benefits (Goldman et al. 2007). In other words, individual incentive approaches ignore the potentially large and important incentive of a collective benefit which only may be achieved if most of the farmers in the region cooperate in their effort to provide ES (e.g., Sarker et al. 2008). It is in this context that cooperative solutions become important.

Proponents of cooperative approaches often point to the spatial scale mismatch between ES and agriculture as justification for its necessity (e.g., Goldman et al. 2007). This mismatch occurs because the spatial scale of management in agricultural ecosystems (e.g., a 500 acre farm) often does not match the spatial scale of ecosystem processes necessary to provide ES (e.g., a tri-county watershed), making cooperation necessary (Cumming et al. 2006; Pelosi et al. 2010).

The Collective Benefit of Collective Management

Ostrom (1990) argues that collective management is a viable, yet commonly overlooked, third solution to the underprovision of a natural

resource such as ES. Collective management often involves a group of citizens who jointly manage a community-owned property, such as a group of herdsmen who manage a common pasture. It may also involve a group of citizens who jointly manage individually owned properties such as members of a neighborhood association who jointly make and follow rules regarding noise levels in order to better enjoy their neighborhood.

When people work together, they often achieve a collective benefit that could not be achieved by the group members' individual efforts. In the collective management of a natural resource, most participants hope to achieve the collective benefit of a stable resource base, although other collective benefits may be achieved. For example, an inshore fishery in Alanya, Turkey, was threatened by hostilities, harvest uncertainty, and lost productivity because fishers were fighting over the most productive fishing spots (Berkes 1986). In response, members of the local fishing cooperative devised a set of rules which assigned fishing spots on a daily basis, giving each fisher an equal chance to fish highly productive spots and less productive spots. This collective management regime, enforced by the fishers themselves, created a more productive fishery since better spacing of the fishers optimized production at each site. In addition, fishers no longer wasted resources searching for or fighting over sites, plus they achieved more harmonious relationships within their community. Each of these benefits represents a collective benefit that could not have been achieved by the fisher's individual efforts. These collective benefits were only achieved because the fishers worked together to devise and enforce a set of rules for managing the local fishery (Ostrom 1990).

In the collective management of an ES, participants may hope to achieve the collective benefit of enhanced ES provision, environmental damage mitigation, or the prevention of future regulations (e.g., Lubell 2004). For example, Ayer (1997) describes cotton farmers in Arizona who collectively managed for pest control by practicing collective integrated pest management (IPM) – a management system that

requires monitoring pest populations and only applying pesticides when a certain threshold is reached. After devising and enforcing a set of collective IPM rules, these farmers achieved fewer pest outbreaks, drastically reduced input costs, and reduced confrontations with neighboring communities regarding water and air quality issues – benefits that were only achieved when most of the cotton farmers in a region worked together to enhance the ES of pest control (Ayer 1997).

Although some ES, such as pest control, are well suited to collective provision (Stallman 2011), collective solutions also face many barriers to implementation (e.g., Ostrom 1990, 2001). In addition to many of the same barriers that farmers face with government and market solutions – such as start-up costs, information costs, lack of trust in the sponsoring agency, and social costs – farmers who work together to provide ES also face barriers such as lack of trust in other farmers or stakeholders, lack of information about other farmers' past actions, lack of a common vision, or organizing costs, especially with large groups (Olson 1965; Ostrom 1990, 2001, 2009; Pretty 2003).

Consider the previous example of an individual farmer who wanted to begin practicing IPM after joining a government program to help provide higher water quality to downstream rural water municipalities. Now consider twenty farmers who must work together to accomplish the same goal. Water quality is highly dependent on landscape-level processes (e.g., Sarker et al. 2008) and is well suited to provision through collective management (Stallman 2011). In fact, encouraging farmers and other stakeholders to work together may be the only way water quality may be significantly improved. However, farmers working together must agree on a common vision for their work. They must come up with a set of rules and guidelines to follow, and they must trust that other farmers in the group will follow through on their commitments (Ostrom 1990, 2001). Additionally, the farmers face the same start-up costs, information costs, etc. that each would face individually if they wished to provide ES.

Summary

Because agriculture has such an enormous effect on the environment, farmers are in a unique position to provide ecosystem services. They can do this through the farm, ranch, and agricultural management practices they adopt. However, farmers face short-term incentives to focus on production-related services, often at the expense of providing longer-term benefits of ES. For this reason, the underprovision of ES can be defined, as Lant et al. (2008) did, as the “Tragedy of Ecosystem Services,” in honor of Hardin’s (1968) analysis of the “Tragedy of the Commons.” The tragedy results from the overconsumption of common pool resources, such as pasture lands, and from the underprovision of public goods, such as carbon sequestration. Thus, one of the most important ethical issues that surrounds the provision of ES in agriculture is similar to the problem of providing any public good or managing any common pool resource – which is how to identify and encourage the provision of ES by those most capable of doing so.

Since the ethics of providing ES revolve around the problem of incentives, this entry described the role agriculture plays in providing ES and the types of solutions currently considered and adopted to help solve the underprovision of ES.

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Public Institutional Foodservice

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Synonyms

Public food; The public plate

Introduction

The term “institutional foodservice,” which is increasingly a topic of interest among policymakers and advocates, hinges on a convenient but slightly misleading term: institution. At first consideration, institutional foodservice may be thought of as only including food served through large institutions like schools, jails, hospitals, and employers. However, the term is also increasingly being used to refer to food paid for by public dollars (New York City Council 2010; Public Plate Working Group 2014), sometimes called “the public plate” (Morgan 2006). This definition extends institutional foodservice beyond these often large bricks-and-mortar institutions to potentially include soup kitchens, home-delivered meals for seniors, and snacks given out in public child-care settings, among other types of food. At the same time, because of the public nature of the funding, this latter definition may exclude many private employers, colleges, universities, and hospitals, which are some of the institutions that have been at the forefront of institutional food systems change (Barlett 2011; Eldridge 2012).

Institutional food has been a part of city life for decades if not centuries, but in recent years, it has attracted renewed attention from policymakers and advocates as a possible and important site of food systems change. In this entry, several key features of contemporary institutional food in the United States will be briefly discussed. While many of these concepts may apply both to public and private organizations providing food, there is an emphasis in this entry on the concepts most relevant to the public provision of food. New York City, which currently provides more than 270 million meals and snacks per year (City of New York Mayor's Office of Contract Services 2012), operates a complex and increasingly innovative institutional food system, which is the source of many of the examples provided in this entry.

Key Features of Contemporary Institutional Foodservice

Institutional food, especially in the public sphere, is typically the product of several forces that are often challenging for institutional food managers to balance and reconcile. These forces include (1) the usually limited and sometimes complex financing of institutional food, (2) consumer preferences, and (3) compliance with institutional food quality standards (Public Plate Working Group 2014). Several other factors relevant to these forces and critical to understanding institutional food are (1) the structure of purchasing, (2) the location of preparation, (3) institutional food labor, and (4) trends in institutional food systems change like attention to the health impact of institutional food, attention to sustainability, and attention to local economic development. Each of these topics will be discussed in turn.

Financing

Financing of food varies from institution to institution, though public agencies or publicly funded organizations often find themselves having to provide institutional food on extremely limited budgets. In the case of a senior center being contracted by a city agency, for instance, the

senior center may bid to provide all of the services that senior centers provide, including foodservice. Food would be part of the bid, and while there may be specific characteristics of the food that the city can specify (e.g., being served a certain number of times per day or meeting certain nutritional requirements), the senior center is likely to try to bid the lowest amount possible for the provision of this food in order to help keep their overall bid low, so that they remain a viable candidate in procurement systems that typically must prioritize the lowest bidder in contract decisions. When a city provides food directly – for instance, through a city-run homeless shelter – a similar logic may be in play through a slightly more streamlined purchasing route. In this situation, the city might contract food providers directly but would likely still be seeking the lowest bid for the type of food needed.

In the cases of some of the largest institutional food systems in the United States, like the primarily federally funded school food system that operates in public and some nonprofit private elementary, middle, and high schools, the challenge of providing food has to do not only with limited budgets but also with addressing consumer preferences that help to determine financing. There are three eligibility levels that organize the funding of food in American public schools. Based on their family income level, students may qualify for free meals, reduced-price meals, or full-price meals, though even full-price meals are subsidized by government funding. The reason that these categories are important is that schools receive different levels of reimbursement for meals served at each of these levels. However, this is not the only factor that determines the reimbursement rate. The amount of money a school receives for each meal served is also determined by the percentage of lunches served at the free or reduced-price rate for the school overall (a proxy for the school's overall level of need) and by whether or not new federal nutrition standards that went into effect in 2012 have been successfully implemented. Students paying for full-price meals are also important to school food budgets. The financing of school

food thus works best at schools that can attract the largest percentage of students at all levels of reimbursement to eat school lunch. This dynamic is amplified by the fact that schools receive a small amount of funding for each lunch served that can be used toward foods provided directly by the US Department of Agriculture (USDA). These supplemental foods are colloquially known as “commodity foods” (Public Plate Working Group 2014). The importance of consumer preferences will be discussed further in the next section.

Consumer Preferences

While consumer preferences are a primary guide for those designing restaurant menus, they may not seem as important in institutions serving food with public dollars to those in need. Though some institutional food settings give consumers choices among foods that are offered and must make institutional eating appealing to keep reimbursement totals high (as in the American school food system), others may offer a single primary meal to all consumers each time a meal is served with relatively little attention to consumer preferences. Historically, this lack of attention has led to institutions like schools and prisons becoming notorious for serving unappealing foods. Food may even be used as a kind of disciplinary tool in correctional settings, a practice that raises ethical questions and that has generated lawsuits in several states. The classic American example of this is the *nutriloaf*, which continues to be used in many states despite numerous lawsuits. This is typically a starchy product made of a variety of ingredients that have been processed, mixed, and baked into a loaf, which offers basic nutrition in a form that is poor tasting, constipating, and served without utensils (Greenwood 2010).

In spite of these examples to the contrary, however, making sure that consumers can eat the foods that are provided is typically important to institutions both from the perspective of making sure that the basic health and well-being of consumers is maintained through eating and from the perspective of limiting food waste. Many types of institutions offer kosher and halal meals

to those who require these for religious reasons, as well as therapeutic diets (low sodium, low carbohydrate, modified protein, modified consistency, etc.) to those who need or have been prescribed them by a physician for health reasons. In stark contrast to the disciplinary use of the *nutriloaf*, some correctional institutions are attentive to food preferences of inmates. For instance, the New York City Department of Correction has worked to develop vegan meal options as they have noted an increasing preference for this among some inmates (Public Plate Working Group 2014).

As discussed briefly above, schools are an arena in which the choice by consumers to eat institutional food has the potential to dramatically affect the funding of institutional food. Because of this, over the last few decades, schools have worked to provide foods that are appealing to students, which has resulted in school food that often looks as much like commercial fast food as possible (Poppendieck 2010), creating ethical tensions for many school food directors. More recently, however, both government and civil society efforts have sought to improve the quality of school food in terms of nutrition, freshness, and taste, and there are small signs that student preferences in some areas may be starting to shift toward healthier fare as well. As an example, in 2013 in New York City, a public elementary school adopted an all-vegetarian menu due to student demand, seemingly one of the first schools in the United States to do so (New York City Department of Education 2013).

Compliance with Institutional Food Quality Standards

When receiving services or participating in some institutional settings, it may be difficult for people – especially those of limited financial means – to access other forms of food. Additionally, many people eating regularly in public institutions are considered vulnerable populations when it comes to health (for instance, populations who are poor, sick, young, and old). For these reasons, government agencies and institutions in the United States and other countries often

pay special attention to certain aspects of the quality of institutional food.

First among these compliance priorities is usually basic food safety. Most places serving food in the United States, including but not limited to institutional settings, are required to develop and adhere to systems based on Hazard Analysis and Critical Control Points (HACCP) principles, which comprise “a systematic approach to the identification, evaluation, and control of food safety hazards” that is internationally used and recognized (National Advisory Committee on Microbiological Criteria for Foods 1997). In institutional foodservice settings, as in other foodservice settings, implementing these principles typically involves hazard analysis and control throughout the receiving, storage, cooking, cooling, warming, portioning, and serving phases of meal production (Federal Institute for Risk Assessment 2013). In institutional settings, compliance with these is often ensured via monitoring by local health departments and by the requirement that someone on staff holds a certificate demonstrating training in safe food handling.

In the United States, basic nutritional soundness is also encouraged in many institutional settings and is monitored primarily by government programs that fund institutional food. Often attention to nutrition standards is incentivized by linking compliance with reimbursement. One example of this type of nutrition-oriented reimbursement is the Child and Adult Care Food Program (CACFP), which is funded through the Food and Nutrition Service of the USDA. CACFP reimburses for meals provided to children, youth, and adults through public and non-profit child-care centers, afterschool programs, and adult day-care programs and for meals provided to children and youth residing in emergency shelters (Child and Adult Care Food Program 2013). Institutions seeking reimbursement from CACFP for meals must comply with meal patterns that are determined separately for infants of different ages, children of different ages, and adults. Breakfast for a child between the ages of 3 and 5, for instance, must include the following three components: (1) three-quarters of a cup of milk, (2) half a cup of fruits or

vegetables, and (3) a serving of a grain product made from whole-grain or enriched meal or flour (Child and Adult Care Food Program n.d.).

In addition to these nutritional standards tied to reimbursement, some cities like New York have begun experimenting with improving the nutritional quality of publicly funded food even further. The New York City Food Standards created nutrition standards for all meals and snacks that city government institutions serve or purchase (New York City Department of Health and Mental Hygiene n.d.). These standards were first instituted in 2008 and include standards for purchased food, standards for meals and snacks, nutrition standards for certain foods served, population-specific standards and exceptions (for groups with possible special needs like young children and seniors), and sustainability recommendations to support foods served to better comply with overall health and environmental sustainability. Some of the major changes resulting from the implementation of these standards – many of which were later adopted nationally for school food – are requiring whole wheat bread instead of white, two servings of fruits and vegetables for each lunch or dinner served, and low-fat or skim milk in lieu of whole milk (except for children under two). The standards are monitored in some cases by nutritionists employed by city agencies through site visits and interviews and in other cases by the contracted organizations serving food through self-report.

Structure of Purchasing

The purchasing of food is a key concept in the institutional arena because it influences both the types of foods that are available to be prepared and eaten and the affordability of those foods. Government agencies may directly contract for food or distribute funds to contractors to purchase their own food. Direct purchasing may allow agencies to better monitor the quality of food, to better negotiate low prices because they tend to purchase larger quantities of food, and to ask vendors to develop particular products made to particular specifications. For example, in the case of the New York City Department of Correction, which purchases food centrally, these factors

have allowed the agency to work closely with vendors, experimenting with different product formulations until they reach one that complies with nutritional goals, is easy to cook, and has the desired color, texture, and flavor (Public Plate Working Group 2014).

In other institutional arenas, however, each site might do its own purchasing. For instance, in New York City, child-care centers overseen by the city do not purchase foods centrally. Instead, subsidized child-care providers are selected and contracted by the city and then are responsible themselves for providing food to children who enroll (Public Plate Working Group 2014). In these situations, purchasing of food by individual sites may discourage lower bulk pricing and typically does not allow for the development of specific products. However, these smaller-scale purchasing systems may allow sites greater ability to tailor menus to their particular consumers, greater flexibility to change vendors for particular products or prices, and the ability to develop their own relationships with vendors.

Recognizing that economies of scale can be useful to institutional settings that do purchasing in this less centralized way, umbrella organizations and associations of institutions often seek out group purchasing options. New York City, for instance, now enables and encourages child-care organizations and other institutional sites that contract for food to purchase a wide array of goods and services together through a company providing this service (Public Plate Working Group 2014).

Location of Food Production/Preparation

Institutional food may be prepared primarily at the site where services are provided, primarily at a central kitchen serving multiple sites, primarily by food manufacturing companies, or primarily by a catering company that delivers chilled or frozen meals. The option that is used depends on a number of factors, including many of those discussed in this entry. Institutional food financing and scale, for example, may determine whether there is funding for staff, training, and equipment to prepare food on site. The need to monitor certain aspects of institutional food

quality may also influence where food preparation takes place. For large public school systems, for instance, which must meet nutritional standards on strict budgets, and which can be liable if food safety issues arise, it may be easier to meet standards for nutrition and hygiene when foods are produced using more centralized and standardized processes as in a central kitchen or via food manufacturing companies.

Institutional Food Labor

Relatively little is known about who institutional food workers are, how they have been trained, and how they do the daily work of making food for at-risk groups, though they may strongly influence the types and quality of institutional food (Tsui et al. 2013). The members of the institutional food workforce who have received the most attention thus far are school food workers who come into view occasionally via portrayals on television shows, analyses of school food worker contracting (McCain 2009), and, more recently, news of their union protests in Chicago (Eng 2012). However, throughout most of the literature that deals with institutional food, the figure of the worker is almost invisible. This is particularly the case in institutional settings that tend to be less centrally controlled than school food and more community-based, like child-care and senior-care settings. What can be said about institutional food workers is that they are part of the larger sector of foodservice workers who are typically low paid and receive few benefits (Tsui et al. 2013) (Restaurant Opportunities Centers United 2011).

Trends in Institutional Food Systems Change: Health

As this entry suggests, basic food safety and healthfulness have been important goals in many but not all types of institutional food settings for decades. More recently, however, a trend toward actively using institutional food as a lever for improving public health has emerged. This trend toward “Healthier Food in Public Places,” as the Center for Science in the Public Interest calls it, has been embraced by numerous cities and government agencies.

The rationale for adopting policies and practices to improve the healthfulness of institutional food (and other forms of publicly funded food) that is commonly articulated by these groups includes that these efforts can potentially (1) serve as a low-cost strategy to reduce obesity and diet-related disease, (2) influence social norms around food, and (3) alter how food manufacturers operate and the nutritional value of what they produce (National Center for Chronic Disease Prevention and Health Promotion 2010). With these ideas in mind, cities often begin, as Philadelphia and Chicago did, by working to change nutrition standards in vending machines in particular settings like city buildings, schools, and recreation centers (Philadelphia Department of Public Health 2010; Press Office 2012). Cities often then tackle applying nutrition guidelines to food served in meetings at city agencies and then may expand to developing nutrition standards for all food that is purchased or served to consumers by city agencies, as has happened in New York (Center for Science in the Public Interest n.d.).

It is also worth noting that the mission of many institutional food programs includes working to ameliorate **food insecurity**, which also threatens health. Addressing food insecurity through institutional food provision can be done in a targeted way, as in soup kitchens and homeless shelters that provide meals, or via a broader approach where larger meal programs are developed in part to help reach food-insecure populations. Universal school meal programs that feed both students who are food insecure and those who are not seek to address food insecurity in this way.

Trends in Institutional Food Systems Change: Sustainability

Health is not the only rationale in play, however, when it comes to changing institutional food. Institutional food has the potential to influence environmental sustainability through the distance food travels, the types of transportation and routes that are used to deliver food, and the waste created in the production and serving of food, among other factors. Efforts to increase the sustainability of institutional food often come packaged with initiatives to improve health, as in the American Centers

for Disease Control's "Health and Sustainability Guidelines for Federal Concessions and Vending Operations" (National Center for Chronic Disease Prevention and Health Promotion 2010). These guidelines apply to many foodservice concessions and vending machines managed by the federal government in the United States. In addition to nutrition and food selection guidelines, this document recommends a variety of sustainability measures including participation in recycling and composting programs, promotion of reusable beverage containers and tap water consumption, use of green cleaning practices and pest control, and use of compostable materials when disposable serving items (like trays) are used. Guidelines pertaining to the seasonality, local procurement, and organic labeling of food are also discussed.

Sustainability efforts in institutional food also may emerge separately from health improvement efforts. For instance, Rikers Island in New York City, which is home to the majority of inmates in the city's jail system, hosts a composting site that was originally put in place in 1996 as a way to help manage large quantities of organic waste concentrated on the small island (New York City Department of Sanitation n.d.-a). Institutional composting pilot programs in public schools and through other city agencies have also been launched in New York (New York City Department of Sanitation n.d.-b).

Trends in Institutional Food Systems Change: Local Economic Development

Lastly, economic development also frequently serves as a rationale for changing institutional food systems, especially when shifting toward more **local** (defined in a variety of ways) and regional purchasing and processing of food is a focus. This was very much the case in a 2010 report entitled "FoodWorks: A Vision to Improve NYC's Food System" published by the New York City Council. This report sought to "identify ways to move from an unsustainable food system to one that promotes health, environmental sustainability, and a thriving economy" (New York City Council 2010). While this report was not focused only on institutional food, it strongly highlighted the purchasing power of New York

City's government and public institutions and the effects this could have on regional and local economies. Similarly, in Michigan, economic development has been used as a tool for framing the need for institutional food systems change. As the state's Good Food Working Group wrote in 2010, "We envision new approaches to food purchasing in which these Michigan institutions provide local, good food to consumers and create new markets for products grown, raised and processed in Michigan" (Michigan Good Food Work Group 2010). Initial steps that can be taken to increase local purchasing of foods include policy changes like Local Law 50 of 2011 in New York City, which allows a measure of preference for local foods in institutional purchasing (Mayor's Office of Contract Services 2012). Many jurisdictions and approximately 10,000 schools across the United States are also experimenting with farm-to-school programs, which help to redirect funds spent on school food to local farms (National Farm to School Network n.d.). Other farm-to-institution programs establish similar programs for hospitals, colleges, and child-care settings (Berkencamp and Mader 2012; Health Care Without Harm n.d.; Community Food Security Coalition n.d.).

Summary

This entry discusses the institutional foodservice sector, focusing primarily on publicly funded food in cities. Dynamics that must be balanced by public institutional food systems are examined, including the financing of institutional food, consumer food preferences, and compliance with institutional food quality standards. Several other factors relevant to these dynamics and critical to understanding institutional food are also introduced including (1) the structure of purchasing, (2) the location of food preparation, (3) institutional food labor, and (4) trends in institutional food systems change like attention to the health impact of institutional food, attention to sustainability, and attention to local economic development.

Cross-References

- ▶ [Emergency Food System: Soup Kitchens and Food Pantries](#)
- ▶ [Food and Health Policy](#)
- ▶ [Food Security](#)
- ▶ [Food Standards](#)
- ▶ [Punishment and Food](#)

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Punishment and Food

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Synonyms

Food and discipline; Food as a weapon; Food deprivation; Forced feeding

Introduction

Because food is fundamental for the preservation of life, it is a powerful and effective tool for the execution of punishment. This biological aspect, in itself, is reason enough to explain why food is such a compelling weapon. Yet the human

relation to food extends beyond the physical. Individual food habits are profoundly influenced by culture. The act of eating – what, why, how, when, and with whom one eats – is defined by a complex set of social values and rituals that signify one's membership within a specific group and give one's life meaning. The extent to which a person abides by these norms symbolizes who that person is. In this sense, eating is closely linked to an individual's sense of personal and social identity. Food punishments, whether by deprivation or forced feeding, can threaten one's physical well-being as well as one's sense of self when used for harm. When food is used to discipline the body as a means of moral correction – even if it is meant for good – it goes against the human will and thus feels very much like punishment. Whatever the context, punishing with food is a means of exercising control over others or over one's own body.

The sections below will cover the major areas where food punishments occur: in the family, in prisons, in the political sphere, and in the individual body (as in self-punishment). Each of these instances of punishment is influenced by philosophical theory, which also will be considered.

Feeding in the Family

The first place children experience socialization is within the family. This is the starting point of physical and social development, where values and behaviors are formed. Because children are unable to feed themselves or discern for themselves what is good to eat, many of these norms are communicated to them through food – that is, through the variety and quantity of foods they are given, and the manner in which they are fed. This dependency creates an environment in which parents – by withholding certain foods and enforcing the consumption of others – indoctrinate their children with a particular set of ideas concerning what is physically, socially, and morally acceptable behavior.

Two important contributions to educational theory, Plato's *Republic* (Plato 1969) and

Rousseau's *Émile* (Rousseau 1911), provide a philosophical basis for punishing children with food. These works assert that education begins at birth and must involve careful control of the diet. What is good to eat is not merely a matter of health, but also must be considered for its moral quality. A proper diet promotes physical health and develops moral character. Since children are not born with this knowledge, these values must be acquired through dietary education and training. Thus, punishment is intended for moral instruction. It is an act of discipline designed to promote the best interest of the child.

Both the *Republic* and *Émile* endorse food deprivation within the family as a form of moral education. Withholding food cultivates in children the virtue of temperance (moderation) and discourages the vice of gluttony. The idea is that, if left to their own devices, children's appetitive desires will become insatiable, leading to vice, which in turn causes disease for the body and the soul. As Rousseau says, intemperance must be avoided, as it “excites the passions, and. . .in the long run it debilitates the body” (Rousseau 1911, p. 22). Food intake, therefore, must be carefully monitored, and certain foods must be limited or prohibited altogether to prevent moral corruption and disease. Interestingly, both Plato and Rousseau suggest that meat not be fed to children (Plato 1969, p. 372; Rousseau 1911, p. 119); it would seem to fall into the category of what Plato calls the “unnecessary appetites”: foods that are harmful to the body and a “hindrance to the soul” (Plato 1969, p. 559b, c). Through “early correction and training,” these harmful tendencies can, and indeed must, be suppressed (Plato 1969, p. 559a–c).

Conversely, enforcing the consumption of particular foods is equally important for a child's moral development. Just as there are foods that should be avoided, there are those that ought to be encouraged in moderation. These acceptable foods belong to Plato's list of “necessary appetites,” which are fundamental for life and contribute to a “good habit of body” (Plato 1969, p. 559). The right foods – presumably vegetarian in nature – administered in correct

proportions, make for a healthy body and soul (Plato 1969, p. 372; Rousseau 1911, p. 119). These tendencies are not innate in children, who are so often tempted by unhealthy things; thus, the consumption of good foods and manners must be forced upon them. Rousseau believes the diet of children ought to be simple and natural, so as not to “excite their gustatory pleasure but only to satisfy their hunger” (Rousseau 1911, p. 119). And for Plato, a healthy diet produces a well-ordered individual, and ultimately, a just state.

Sometimes food is used to punish children for wrongdoing. In these instances parents may withhold a substance that is wanted, as in revoking the privilege to eat a treat, or they may force the consumption of something undesirable. While these punishments may not be directly related to children’s eating habits, the use of food remains a persuasive technique for shaping their moral character. Plato seems to support these kinds of punishments in his *Protagoras*, where he states, “If the child yield a willing obedience, all is well; if not. . . treat him like a young tree that is twisted and bent, and try to straighten him with threats and blows” (Plato 1888, p. 325). Plato asserts that punishment is to the soul as medicine is to the body – it cures wickedness (Plato 1888, pp. 478–479; Mackenzie 1981, p. 200). Thus, penalties should be carried out directly through habit and conditioning, and the child should welcome rather than shun punishment because it heals the soul. Because food is intricately associated with the body, which must be controlled, it is likely Plato would condone the use of food for various disciplinary reasons.

Rousseau, in contrast, prefers more indirect forms of discipline for children. He insists that, “punishment must not be inflicted on children as a punishment, but. . . as the natural consequence of their bad acts” (Rousseau 1911, p. 65). For example, rather than physically punishing a child for lying, simply allow the ill effects to fall upon them, such as distrust and false accusations. It would seem that Rousseau condones more psychological forms of punishment. Yet when he describes the eating habits of *Émile*’s future companion Sophie, he suggests a more direct approach. When Sophie took sweets from

the pantry as a child, her mother “reproved her, punished her, and made her fast” (Rousseau 1911, p. 291).

Feeding the Confined: Food in Prisons

Throughout history, deprivation, food contamination, and involuntary eating have been common measures of imposing penalties on criminals. Before the nineteenth century in the West, punishments were primarily corporal in nature and often took place in public places. The infliction of physical pain was seen as a retributive measure carried out against offenders in payment for their crimes. Public exhibition was intended to shame and reform criminals and serve as a deterrent to others (Plato 1888, p. 323). The rationale centered on the Platonic notion that control over the body is essential for promoting justice and reducing the incidence of crime (Plato 1888, pp. 504–505; Mackenzie 1981, p. 189). If criminals received any food at all, rations often consisted exclusively of bread and water. Food torture was commonplace. Criminals were deliberately poisoned, malnourished, and even left to starve. Though torture in prisons has been prohibited in recent years, following the establishment of international human rights laws, the use of food for punishment remains a common punitive strategy, affecting prisoners both physically and symbolically.

In *Discipline and Punish*, Michel Foucault examines the emergence of the modern prison system, a phenomenon signaling the shift away from the “public spectacle” of corporal punishment to a more institutionalized, “surveillance-based” system. This new structure, he argues, is not the result of increased humanitarian concern for criminals, but rather a “slackening of the hold on the body” (Foucault 1977, p. 10). While corporal punishment torments the body physically, imprisonment afflicts the body psychologically. The body is now an instrument for depriving the criminal of certain liberties or rights (Foucault 1977, p. 10). At the same time, Foucault questions the total disappearance of corporal

punishment. He suggests that incarceration necessitates a certain level of physical pain. Confinement, food rationing, and forced labor, which are regular features of prison life, certainly affect the body.

Foucault's writings illustrate well the function of what he calls the "punishment–body relation" (Foucault 1977, p. 11). Incarceration is at once both physical and mental punishment. Food works similarly when used for punishment. Even in instances when criminals are fed adequately from a nutritional standpoint, the loss of individual control over their food choices causes them anxiety and robs them of certain liberties. This anxiety is significant. It represents the ability of the institution to exercise power over the criminal through food, with or without the use of nutritional deprivation. For example, in American prisons inmates in solitary confinement are fed with mixed-ingredient compressed foods, resembling meatloaf in appearance and colloquially referred to as "nutraloaf" or "confinement loaf." These feedings are specifically designed to provide hostile inmates with adequate nutrition while simultaneously serving as part of the punishment (they are said to be tasteless and unappetizing). Most, if not all, prison food is rationed and the frequency and location of meals is strictly regulated. This loss of freedom in eating – what Foucault calls a "deprivation of liberty" – is equal, and perhaps even more agonizing, than the physical pangs of withholding food.

As a result of the mental anguish experienced while in confinement, prisoners often use hunger strikes to shift the balance of power. Food refusal is a potent physical and symbolic statement for prisoners and a means of regaining some measure of control over their bodies. It is so effective a weapon, in fact, that prison authorities often retaliate by force feeding the prisoners. This act nullifies the prisoner protest and reasserts "proper" authority within the establishment. Questions surrounding the ethical basis of such actions have been widely debated in recent years, as they are viewed as a violation of universal human rights. Is force feeding cruel and inhumane treatment? If not, does it nevertheless violate a prisoner's right to refuse medical

treatment? Consequently, many prison medical practitioners are now required to prove that force feeding is a medical necessity (Lines 2008, p. 30).

Food and Political Punishment

Two treaties drafted by the UN General Assembly – the *Universal Declaration of Human Rights* (1948) and the *International Covenant on Economic, Social and Cultural Rights* (1967) – explicitly state that all humans should be free from hunger and have enough food for an adequate standard of living. Since governments are required to uphold these laws, one of their chief responsibilities is the allocation and protection of food resources. Of the many measures used to secure food supplies, the economic trade of commodities – including agricultural crops and manufactured food products – is among the most powerful and endangering. In the *Wealth of Nations*, Adam Smith asserts that the protection of free trade is "essential to the defense of the commonwealth" and therefore a critical responsibility of the state (Smith 1909, p. 480). Because governments continuously rely on trade with other nations for food supplies, political and economic relations between them are critical. When these relations are strained, food availability often is threatened and social instability ensues. Food thus becomes a stage upon which political and economic struggles for power are acted out. Edible commodities are transformed into political weapons used to punish opposing nations or to manipulate the state's own people.

Defending citizens from the violence of other nations is, for Adam Smith, the first duty of government. He argues that this protection can only be carried out by means of military force; that a well-trained standing army ought to be maintained continuously, not merely during times of war; and that the provisioning of supplies is an obligation of the state (Smith 1909, pp. 468–471). Smith emphasizes the strategic importance of keeping an army fed during battle and encourages the use of billeting for provisions when war is fought at a distance (Smith 1909,

pp. 340–341). He maintains that fleets and armies are supplied not with gold and silver, but with consumable goods (Smith 1909, p. 338). The trouble is many of these goods are often requisitioned from civilian populations. In this sense, food can be used as a punishment against civilians during times of conflict. War theorist Carl von Clausewitz also recognizes how food scarcity can be a “special principle of destruction” during warfare (Clausewitz 1908, p. 212). Historically, armies frequently experienced greater casualties due to inadequate food, illness, and fatigue than from active combat (Clausewitz 1908, p. 212).

Denying enemies access to food in wartime can be as destructive to human life as the use of military arms (Wallenstein 1976, p. 277). These measures may be carried out directly, as in a military invasion, or indirectly, as in trade embargoes and economic sanctions. During active combat, armies throughout history have employed various food strategies, both offensively and defensively, including scorched-earth campaigns, slash-and-burn tactics, blockades, and pillaging. The Union blockade on Confederate ports during the American Civil War is an example of an offensive strategy where food restrictions effectively starved the South into submission. Perhaps the most well known of these defensive strategies is Napoleon’s invasion of Russia in 1812, where his *Grande Armée*, who expected to forage for subsistence, were forced to retreat as a result of Russia’s deliberate destruction of food resources. Clausewitz rebuked Napoleon for his strategic logistical failure to secure food supplies for his marching armies (Clausewitz 1908, p. 214).

While the deliberate destruction of food resources and forced starvation are now considered crimes of war, governments continue to utilize various food-targeted measures to punish enemies, mostly through trade embargoes and economic sanctions. Even blockades are permissible under international law, so long as they do not impede civilian access to adequate food or destabilize food production in war-stricken areas. The US embargo with Cuba, first imposed in 1960 and still active today, has been among the

most long-lasting, severe, and controversial food-related trade prohibitions in modern history.

Governments sometimes assert political power over their own people by limiting access to food. While restricting food availability is not always intended for harm, the consequences can be devastating, especially for the disadvantaged. Food rationing and dramatic price inflation – which may be attempts to protect food supplies – can lead to famine, food shortages, hunger, and starvation. In *Poverty and Famines*, Amartya Sen questions the view that famines are caused by “food availability decline” (FAD). Rather, famines are the result of widespread failures in food distribution and entitlements (Sen 1991, pp. 154, 162). “A person’s ability to command food...depends on the entitlement relations that govern possession and use in that society” (Sen 1991, p. 154). For Sen, the fact that famines can “thrive” even at times when there is no particular shortage of food is an indication that famines are more directly linked to entitlement inequalities. Conversely, the notion that certain population groups can prosper while others starve, as in the Bengal famine of 1943, provides further evidence of Sen’s “entitlement approach.” Moreover, governments – in attempting to offset the damages of famines – may inadvertently, or perhaps deliberately, deprive particular population groups access to adequate food.

Occasionally, nations punish citizens ruthlessly and deliberately with food. The reasons for carrying out such measures are various, but some examples are political despotism, forced collectivization, and genocide. The Ukrainian famine of the early twentieth century is among the most notorious of state-sanctioned famines in modern history. Millions of peasants were starved to death as a result of Stalin’s forced collectivization of grain production. What had once been the “breadbasket of Europe” became the graveyard of the poor.

As retaliations against the state, hunger strikes can be highly effective social protests. Just as in prisons, self-imposed deprivation wields a great deal of symbolic power. When individuals feel the government has acted unjustly or has violated a personal liberty, they may choose to deprive

themselves of nourishment to generate social unrest and attract attention to their cause. While nonviolent in nature, these protests typically need to be calculated, collective movements in order to have significant impact. Individuals acting in isolation rarely have the ability to manipulate change and shift the balance of power. There have been some occasions, however, when hunger strikes staged by individuals have achieved success, as in the hunger strikes of Mohandas (Mahatma) Gandhi in the first half of the twentieth century. As a well-liked public figure with an established following, Gandhi's political protest played a key role in bringing India independence from British colonial rule.

Feeding Body and Soul: Food and Self-Punishment

As a substance taken into the body, food not only nourishes and sustains, it also becomes a physical part of oneself when it is consumed. In this sense, an individual's relationship to food is quite personal. Furthermore, the particular foods one chooses and the manner in which these foods are eaten serve as a means of distinction, differentiating one individual from another in terms of body composition, cultural background, social class, and so forth. Yet the very eating habits that mark one's individuality are shaped and regulated by culture. In other words, society defines for the individual what is suitable to eat by attributing moral values to foods and eating behaviors – e.g., some foods are good, whereas others are forbidden. These normative standards are constructed to promote physical health and, perhaps even more importantly, to control social behavior. A person must moderate his or her eating habits in order to meet these norms. When one fails to do so – by eating the wrong foods or consuming too much or too little of the right foods – one's physical health, social position, and very character are at risk. Consequently, individuals punish themselves with food through dieting, fasting, and eating disorders in order to correct dietary wrongdoings and conform more closely to social standards.

While dieting certainly addresses matters of health, it is equally concerned with the cultivation of moral virtue. Consider how often dieting is a punishment for “bad” behavior such as poor or indulgent eating. In fact, dietary health itself hinges on one's ability to eat the “right” foods in the “correct” manner and proportion. A healthy person is believed to exhibit the virtue of self-control, whereas one who eats excessively or is overweight is deemed unhealthy and therefore lacks character. Thus, a person diets in order to achieve moral propriety and to exhibit the culturally prescribed qualities of dietary health. Restricting food intake following weight gain or a period of “bad” eating is a self-punishment for wrongdoing, a means of moral correction. Controlling the appetitive desires is a recurring theme throughout the works of Plato, who views the illusory temptations of the body as an enormous threat to the higher, eternal values of rational thought. He argues that the diseases of the soul originate from a disordered body, and the inflated desire for physical pleasure – such as that for food and drink – is the “greatest disease of the soul” (Mackenzie 1981, p. 176). Therefore, the body must be self-disciplined in order to produce the virtue of temperance, which leads to a well-ordered and healthy soul. Aristotle's theory of moderation echoes these sentiments, where control over the appetite is not only virtuous, but also necessary for the good life.

The religious tradition of fasting transforms self-imposed dietary restrictions into a spiritual discipline. Religious fasting is viewed as heightening spirituality and bringing one closer to God, creating more time for spiritual contemplation, improving self-control, and building resistance to physical suffering. Though typically performed as an act of devotion, fasting also occurs during times of mourning or is used for repentance. The religious doctrines of early and medieval Christianity share many of the philosophies of Greek ethics concerning the body. Gluttony is classified as a cardinal sin, and the corresponding virtue of self-control appears among the “fruits of the Spirit” in Galatians 5:23. Tertullian extols the virtues of fasting in his apologetic writings,

where he exclaims, “the temptations which attend upon fulness and excessive indulgence of the belly are stifled by abstinency” (Tertullian 1854, p. 281). He refers to fasting and other afflictions of the body as sacrificial offerings to God (Tertullian 1854, p. 345). St. Augustine’s *Confessions* recall his own struggle with dietary temptations, where food was both the “medicine of nourishment” and a snare of lustful wickedness (Augustine 1943, pp. 251–252). The fight against the desires of the flesh was, for Augustine, a daily war where fasting “brings the body into subjection” (Augustine 1943, p. 251). Teachings renouncing the flesh became so prolific in the early church that an enormous wave of men and women devoted their lives to abstinence, giving rise to the ascetic movement. Many of these believers were venerated as saints for their extreme dietary demonstrations, and many of them starved. Nevertheless, fasting for early Christians was seen as a means of achieving salvation. Their deprivation was seen as virtuous, as a victory over the flesh, and a sacrificial example for other believers.

In the age of nutritional science, austere food practices once celebrated for their piety have given way to what are now diagnosed as eating disorders. Individuals suffering from anorexia nervosa and bulimia punish themselves with food (or the lack of it) because of the severe anxiety they feel concerning their physical bodies. Both disorders are centered on issues of control, where extreme eating behaviors – such as self-induced starvation or bingeing and purging – are attempts to master the unruly desires of the appetite. In *Unbearable Weight*, Susan Bordo argues that eating disorders are the symptoms of persistent cultural pressures on the individual body to achieve idealized forms of beauty. These illnesses are not bizarre psychological abnormalities, but rather the “the crystallizations of culture” – they are characteristic representations of “much that is wrong with it” (Bordo 1993, pp. 35, 141). As an overwhelmingly female phenomenon, anorectics and bulimics suffer from the “tyranny of slenderness” that has become so prevalent in contemporary culture. Fueled by constant multimedia messages, these women

are “relentlessly driven by an ideal image of ascetic slenderness” (Bordo 1993, p. 152). Though these disorders have only recently been “discovered,” Bordo illustrates that they have existed, in one form or another, throughout history. Anorectics and bulimics typically express an ideology – exhibited by feelings of bodily entrapment and depictions of the body as a prison – that bears remarkable similarity to the mind–body dualism of Platonic and Augustinian ethics, where the spiritual realm is of higher, eternal value and the physical realm is temporary and illusory. The desire to free the soul from the body – which is a common theme in these illnesses – is actually a very old concept. Therefore, eating disorders are extreme representations of a much broader cultural issue concerning food consumption. Society, through cultural norms, exerts immense control over individual eating patterns.

Summary

This entry explores the manifold ways in which human feeding practices may be used – physically and symbolically – for punishment. As both a biological need and a central aspect of personal and social identity, food can be a potent weapon in the control over one’s own body and the bodies of others, whether it is used in the family, in the prison, and in the political sphere or is self-inflicted. Throughout the ages, these practices have been supported by philosophical theory, which may account for their continued prevalence. Yet increased interest in human rights has begun to call into question the use of food for punishment. The issues are many-sided and complex and deeply embedded in culture, so the solution to these concerns is not always simple. As societies shift, what was once an acceptable food practice might later become controversial. The same is true for punishment. History has demonstrated that food remains a compelling instrument for punishment – it simply assumes new forms of expression in the midst of change. Nevertheless, it is most ironic that what is supposed to nourish the body is so often used to control it.

Cross-References

- [Eating Disorders](#)
- [Fasting](#)
- [Foucault and Food](#)
- [Plato and Food](#)
- [Rousseau and Food](#)
- [War and Food](#)

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Race, Racial Identity, and Eating

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Synonyms

African American foodways; Colonization of food; Decolonized diets; Eating culture; Ethnic food; Ethnic identity; Exotic food; Immigrant food; Indigenous food; Mexican cuisine; Soul food; Slavery and food; Racialization; Racism

Introduction

This entry explores race and racial identity as they pertain to food and eating in the United States. Race is a fundamental organizing principle of American society that structures all forms of social, cultural, and political life. In the humanities and the social sciences, race is primarily understood as a social construction that is evolving and historically contingent. Despite the shifting nature of race, since the advent of New World slavery, there has remained a salient racial hierarchy in the United States, which has consistently placed whiteness at its apex.

Food practices are implicated in “fields of relationships, expectations and choices, that are contested, negotiated and often unequal”

(Watson and Caldwell 2005). Food and the socio-cultural act of eating have been significant markers of racial identity throughout colonial and American history and remain central to the process of racialization in contemporary American culture. Conversely, the study of race is critical to understanding food and cuisine in the United States. This entry explores food/eating culture and racial identity as inextricably linked and sees them symbiotically constructing one another. This entry explores various tensions and discussions within food studies and examines the various historical, social, and cultural dynamics involved in food production, consumption, and circulation as they construct race from a transnational perspective.

This entry in particular will pay attention to the correlations between African American identity and race from a historical perspective and will present a loose chronology of some of the major ways by which the racialization of African descendants has occurred in the United States through food and eating. In addition, attention will be given to the correlation between a racialized immigrant identity and food, also from a historical perspective. However, because the topic of racial identity and eating is so expansive and such a format inherently limits the ability to cover the topic in its totality, this entry does not devote exhaustive attention to the ways that other communities of color and ethnic populations have been racialized through food. In particular, there is a long complex history, which has received a depth of academic attention,

of racializing East Asian, South Asian, Mexican, Hispanic, Caribbean, and European ethnic populations through food. Because of the constraints of this entry, the role of food in the racialization of these communities of color will only receive a brief cursory introduction in this entry.

Defining Race, Racial Identity, and Racial Discrimination

This entry begins by laying out common definitions of race and racial identity before discussing the specific role of food and eating in the process of racialization. Throughout American history, race has been incorrectly understood in popular discourse and the sciences as inherently biological. Coinciding with the advent of slavery, European colonialists constructed a common understanding that certain races, primarily non-Anglo-European, Indigenous peoples of the Americas and African descendants were innately inferior based upon a set of essential physical characteristics such as skin colors, head shape, hair type, and body type, among others. Despite the inaccuracy of this understanding, the notion of racial inferiority based on physical traits has been used throughout colonial and American history to justify a racial hierarchy that privileges Anglo whiteness. This fraught understanding of race has, since colonial contact, been widely influential in all aspects of American social life including the physical bondage of slavery, criminal justice, segregation, the biological sciences, economics, politics, popular culture and sport.

More recently, in the humanities and social sciences, as well as partially in popular rhetoric, the notion of race as biological has been largely dismissed. It has been proven by academics, including but not limited to Michael Omi and Howard Winant, Charles W. Mills, Paul Gilroy, bell hooks, Robin D.G. Kelley, and David Roediger, among numerous other critical race theorists and critical philosophers of race, that there is no genetic difference among races (Omi and Winant 1999). Rather, it has been demonstrated that there is as much genetic variation

within races as there is across them. Race is now commonly defined as a system of categorization that is socially constructed by complex social, cultural, economic, and political forces. This understanding of race is known as *racial constructivism* and asserts that even while race is no longer understood as biological, it came into existence and continues to exist because of human decisions and cultural trends.

However, as cultural theorist Robin D.G. Kelley makes clear, race was never simply about banal categorization, but rather was intended by Anglo colonists to function as a system of supremacy where one group, specifically Anglo whites, dominates and oppresses others. As Philosopher Charles Mills's seminal text *The Racial Contract* asserts, systems of racial oppression in the United States are predicated on a racial contract, which he defines as a set of meta-agreements between whites to categorize all non-whites as subpersons of inferior moral, cultural and legal status relation to whites (Mills 1999). This "contract" gives whites the right to exploit nonwhites and deny them opportunities commonly provided to whites. Mills makes clear that, for most of the modern era, whites have had as little obligation to recognize the rights of nonwhites and as such Anglo whites have utilized race in complex ways to privilege their place at the apex of a distinct racial hierarchy since the advent of New World slavery.

In addition, scholars have defined race as historically contingent and evolving and have made clear that the nature of racial identity, the process of racialization, and the nuances of race relations change and shift over time. However, with each evolution and change in the articulation of race (be it legal, political, cultural, social, or economic), racial categorization remains tied to a similar and replicable racial hierarchy that continues to privilege whiteness over all other racial identities.

Racial discrimination and racism are systems of advantage based on race, which constitute a set of evolving cultural messages, institutional policies, practices, beliefs, and actions of individuals. It is commonly understood that racism and racial discrimination require both power and privilege

and involves the creation or reproduction of structures of domination based on essentialist categories of race. In addition, racism and racial discrimination not only operate on an individual level in small-scale social interactions but rather are pervasive logics that are deeply embedded in societal institutions such as the state, legal system, criminal justice, urban space, and popular media, among countless other large sociopolitical institutions.

Defining Eating Culture

While the definition of food is fairly commonly understood as any substance consumed which provides nutritional support for the body, this entry includes in that definition all “processes that make animal, vegetable or mineral into something to eat and then all that is involved in what happens next to bodies and societies” (Slocum 2011). The definition of eating and eating culture is far less widely understood. Eating culture is the complex set of discourses, representations, and social practices that surround the act of eating, ingestion, and food consumption (Tompkins 2012). This entry not only correlates race with food as a material object but also examines the social and cultural practices that surround eating and eating culture. In addition, it is important to note that eating provides unique means through which racialization is performed, because unlike other racial enactments, when eating, food literally gets ingested and fills the body on a material, physical, sensory, and affective level.

Food and Eating in the Historical Construction of Racial Identity

Sugar, Colonization, Slavery, and Race

Perhaps the first and most important correlation between food, eating, and race is the role of the sugar trade in the advent of New World plantation-style slavery and the distinct racial hierarchy that simultaneously emerged. In the sixteenth century, sugar was a highly sought-after

commodity and luxury item throughout Europe. It was used not only as a condiment but also for medicine, rituals, ceremonies, and display. In the seventeenth century, sugar began to grow in popularity and emerged as a staple of most European diets by the eighteenth century. As such, European sugar traders actively sought out a new means of sugar production to meet this increasing demand, hence increasing commercial value of sugar. Because of the warm and moist climate, the European colonial accusations in the Caribbean, Latin America, and Southern United States were ideal for year-round growth of sugar cane and sugar production. As a result, European sugar producers built sugar plantations throughout these regions in the seventeenth and eighteenth centuries. Throughout the eighteenth, nineteenth, and twentieth centuries, the vast majority of the sugar consumed in Western Europe was produced in the Caribbean and other areas in the New World (Mintz 1986).

However, because the growth, harvesting, and production of sugar were so time and labor intensive, these plantation owners needed a viable source of inexpensive labor in order to produce sugar as cheaply and efficiently as possible. European colonists first turned to the colonized Indigenous population as a source of forced labor on the large-scale sugar plantations. However, because of their familiarity with the land (and ease of escape) and their dwindling population numbers (in large part because of the violence of European colonization), the Indigenous populations proved to be an insufficient labor source for sugar production. Thus, European plantation owners quickly turned to the African slave trade as a means to ensure a captive labor supply for the dangerous, violent, and intensive process that was sugar production. As a result, throughout the Caribbean, Southern United States, and Latin America, thousands upon thousands of West Africans were forced into bondage and held captive as a labor source on the European sugar plantations of the colonial world.

The life of a slave on a sugar plantation was brutal. Because sugar production was so physically demanding (involving cutting of the cane, crushing the cane, boiling, and sugar processing,

mixed with the searing humidity of these regions) and slave owners were so violent, many African slaves died during the sugar production process. Especially in the Caribbean, the rate of slave death was extremely high. This high rate of slave death fostered an increase in the number of West Africans brought to the New World in bondage to work in sugar production and fostered the expansion and growth of the West African slave trade, bringing thousands more West Africans to the Americas and the Caribbean in bondage to work in the European colonial sugar plantations.

Many historians and critical race theorists have tied the emergence of plantation-style agriculture, in this case for sugar production, to the advent of a distinct racial hierarchy that defines Africanness or blackness as inferior and places Anglo whiteness at its apex. In order to justify the brutal captivity that was slavery on a sugar plantation, Europeans needed to justify the bondage and continual violence against African slaves, and hence, the category of “black” was constructed as subservient and inferior to Anglo-European whiteness. To exploit slave labor in such a brutal fashion, European colonists associated blackness with racial and biological inferiority and imagined slaves innately subhuman and determined for such bondage. This form of slavery required exploitation based on racial logic, and the emergence of such a distinct racial hierarchy can be linked directly to plantation-style sugar production and the increased consumption of sugar throughout Europe.

African American Foodways During Slavery

Decisions about what to eat are of utmost importance to preserving cultural and racial identity across geographic spaces and temporalities. Colonization and the slave trade caused an enormous amount of cultural exchange, blending, and hybridization that affected every aspect of cultural life, including food. This process of exchange, known as creolization, laid the foundations for African American food in the United States. African American food has its roots in the Igbo and Mande communities of West Africa because of the large number of slaves sent to the

New World from this region (Opie 2008). Several foods that are common among African American communities have historical incarnations in this region of Africa. For example, grits are closely related to millet served in West Africa. Another example, fried chicken, which has a long historical and racialized connection to African American identity, has culinary roots in the West Africa palm oil-fried guinea hen. In addition, African slaves brought many foods such as rice, sorghum, coffee, okra, watermelon, and the “Asian” long bean to the Americas during the transatlantic passage to the Americas (Carney and Rosomoff 2011).

Since slaves were thought of as a valuable economic commodity, slave owners throughout the Americas often provided slaves with a daily provision of food which provided enough nutrients to sustain life and maximize their ability to function as a bonded source of labor. Although slave diets varied greatly throughout the Americas, slave provisions in the American South often included an allotment of grain or other simple carbohydrate and a weekly ration of salted meat (Eisnach and Covey 2009). However, these slave provisions were often lacking in size, variety, and nutrients, and as a result, slaves found creative ways to supplement their food intake. In the United States (both before and after the American Revolution), slaves often maintained small garden plots adjacent to slave quarters (such gardens were not very common in the Caribbean) where they grew foods common to West Africa. This allowed slaves not only the ability to supplement their nutritional intake but also an important means to maintain their cultural connections to the African diaspora and their West African cultural and culinary roots. Hence, these foods became an important means with which slaves maintained cultural and racial identity despite the brutal violence of their living and working conditions in American plantation bondage.

What’s more, foods brought by slaves to the Americas not only became crucial to the assertion of African and African American identity but also became highly influential to American culinary identity. Because it was common to have slaves

work in the slave owners home or “big house” as cooks and domestic servants, many of the African culinary staples and cooking techniques mixed and blended with European cuisine to form new distinct American culinary cultures. Many of the foods that are commonly understood by most Americans today as “Southern”, corn bread, biscuits, fried chicken, pork dishes, greens, gumbo, and jambalaya, are the direct result of African slave foodways and its central role in shaping Southern cuisine. Another prominent example includes barbeque, which is a central cooking style in the United States, which also remains central to African American cultural identity. Barbeque as a cooking style is a derivative from a combination of Indigenous pit grilling techniques, African grilling traditions, and African American cookery both before and after slavery (Warnes 2008). Many of these African American and distinctly Southern culinary traditions spread throughout the United States as a product of the Great Migration, which resulted in further culinary mixing between black and white populations. As a result, culinary cultures that remain central to African American identity, most notably barbeque, became common in places such as Kansas City, St. Louis, Chicago, the Midwest, and various cities in the Northern United States.

Post Slavery, Reconstruction, Jim Crow, Civil Rights, and Soul Eras

Much like during slavery, in the postbellum era, African Americans utilized cooking and eating as a means to maintain the African American community and diasporic connections, as a form of cultural resistance, and as a means of creatively subverting white cultural domination. However, during this time, white Americans found ways to associate African Americans with certain foods, in particular chicken and watermelon, as a means to correlate blackness with inferiority and demeaning tropes such as laziness, buffoonishness, and propensity for criminal activity.

Minstrel shows were a form of American entertainment popular in the United States from the post-Civil War era into the early twentieth

century. Minstrelsy consisted of musical and dance performances, comic skits, and variety acts that were performed by white people in blackface (and also to a lesser extent African Americans in blackface). Blackface is a form of theatrical makeup used in minstrel shows, vaudeville, and film in which performers paint their faces black using makeup or burnt cork in order to create an offensive stereotypical caricature of an African American. The minstrel show often began with brief burlesque performances and comic shorts in the early 1830s and emerged as a full-fledged form in the next decade. By 1848, blackface minstrel shows were widely popular and considered the most important popular culture entertainment of the time. They gained popularity, in part, by translating formal art such as opera and Shakespearian theater into popular terms accessible by a general audience. Minstrel shows and later vaudeville theatrical performances remained popular into the mid-twentieth century, and the tropes common of these theatrical performances were utilized in the early years of the film era.

Minstrel shows caricatured African Americans as dim-witted, lazy, buffoonish, superstitious, happy-go-lucky, musical, and innately criminal. Common tropes in these performances included “the mammy,” a nurturing and subservient African American housekeeper and childcare provider; “the Uncle Tom,” a subservient, religious, and passive older African American man; “the buck,” a larger menacing and sexually dangerous powerful African American man; “the Jim Crow,” a buffoonish, lazy, criminal, and dirty African American man; and “the coon,” a mockery of African American men that was an arrogant, ostentatious figure who dressed in high style and spoke in a series of malapropos and puns that undermined his attempts to appear dignified.

Food and eating were often utilized in these theatrical and film performances to construct problematic and damaging tropes that associated African Americans with buffoonish, criminal, and dim-witted behavior. In particular, minstrel performers utilized watermelon and chicken to portray black Americans as less than human for the purpose of justifying systematic

discrimination and a racial hierarchy that privileges whiteness. While it is unclear where these stereotypes originated, numerous primary sources chronicle black resistance to slavery through day-to-day acts of defiance. Stealing from the slave master is an example of such forms of resistance, and it seems logical that food would be among the most desirable items to have been stolen, especially since slave provisions were often lacking. Both chickens and watermelons would have been commonly available on Southern plantations, and while the theft of these items can be seen as a challenge to slave master authority and a sign of slave agency, it is plausible that the stereotypical correlation between African Americans and these food items could have emerged at this time.

Minstrel performances, vaudeville, film, and consumer culture utilized images of chicken and watermelon to produce a constant stream of anti-black imagery by depicting African Americans as constantly eating, craving, stealing, and feverishly pursuing both chicken and watermelon above all else. This racist imagery produced by and sold to white Americans presented African Americans as unkempt and in tattered clothing, buffoonish, innately criminal, speaking in a highly stereotypical dialect, living in extreme poverty, lacking any ambition for education or social power, and largely content with their impoverished standard of living. Chicken and watermelon were utilized in these cultural forms to portray African Americans as animalistic and so subhuman that it was not education, wealth, or power that satisfied black ambition, but rather within this negative imagery African American desires were problematically directed solely towards chicken and watermelon. The “coon” character especially was depicted in such popular cultural performance as illiterate and lazy, content to waste the day either eating watermelon or chasing chickens (often unsuccessfully).

Three specific ways that both chicken and watermelon were utilized in popular performance and consumer culture to perpetuate racial oppression and antiblack sentiment warrant specific attention. First, African American men were depicted as constantly attempting to steal either

chicken or watermelon in both minstrel performance and popular ephemera. Often these attempts were foiled by the overseer or slave master because of the African American’s own blunders. It was also common to see the chicken personified and escaping capture by easily outwitting the reckless, ludicrous, and fatuous coon character. Such images were always decontextualized from a reality both during and post slavery where many slaves and sharecroppers faced high levels of poverty and often stole to supplement their food supply or as an active act of resistance against racial oppression. Rather, chicken and watermelon were used in such imagery to construct a discourse of the black male as innately criminal, an association that in many respects remains today. Second, often these popular culture productions often literally depicted African Americans as chickens. This literal construction of black man as chicken closely correlates African American identity with that of an animal, and in the case of chicken, an animal that is thought of as crude, witless, and only valuable in the eyes of white Americans as a source of food. Finally, by correlating African American men with chicken, in particular the rooster, popular culture was constructing a discourse on black male sexuality that viewed the black man as having an animalistic and uncontrollable sexual appetite, especially for the perceived purity of white femininity (often associated with the hen). Correlations between chicken and the black male body in part functioned to create a stigmatization and fear of black sexuality, which also remains salient in popular rhetoric today (Williams-Forson 2006).

It also should be noted that both chicken and watermelon were not simply utilized by white performers in minstrelsy, vaudeville, film, and consumer culture to construct detrimental racial tropes but also that these foods were appropriated by African Americans to resist racial domination. Not only did slaves and post slavery blacks steal such foods as a means to challenge the authority of Southern whites, but African American men and women utilized the sale of food in the ante- and postbellum eras to assert their collective agency and autonomy. In particular, “waiter

carriers,” female African American cooks, sold food along railroad lines to train passengers to assert themselves as valid members of the nation-state through the demonstration of their economic value, build community, continue cultural traditions, and travel, all of which challenged existing racial (and gendered) power structures of the time (Williams-Forson 2006).

Food has also remained a crucial part of African American sociopolitical activity and organization during the Civil Rights, Soul Eras, and beyond. In the 1960s, the Black Panther used a free breakfast program to critique white American imperialism and domination by sustaining their own African American community through radical food spaces. This breakfast program advocated a revolutionary politics that rejected governmental food aid, which the Black Panther Party saw as a means to pacify and make docile the African American community. For the Nation of Islam, restricting one's diet and the consumption of healthy food protects against the consequences to one's health and domineering culture of a racist society. The Nation of Islam rejected soul food, especially foods like pork and chitterlings, because of their direct correlation to slavery and the diets imposed by slave masters. Other food activists during the Soul Era embraced soul food claiming it as a statement of “racial pride precisely because it reclaims food previously despised – those animal parts that slave had to eat because their owners would not” (Slocum 2011).

Colonizing Native Diets

It also should be noted that European colonists and white American expansionists also used food to colonize Indigenous peoples throughout American history. Practices such as forced farming on Indigenous reservations, European eradication of the wild buffalo population, and highly processed US food provisions became a means of imperialism, colonization, and racial oppression enacted by Europeans and white Americans against Indigenous peoples. For example, the US federal government, in efforts to oppress and control the Indigenous people of the American plains, forced these populations to ranch,

slaughter, and consume of beef, instead of hunting wild bison, which had been a common practice of Plains Indians for generations (Wise 2011). This food-based colonization has resulted in high levels of obesity, diabetes, and other diet-related health problems among many Native peoples. However, throughout the history of settler colonization, Indigenous peoples throughout the United States have fought back against this food-based colonization and made a radical claim of autonomy by decolonizing their own diets and restoring traditional foods, culinary techniques, and foodways to Indigenous cultural life. One notable contemporary example is the consumption of wild rice by the Ojibwa peoples of Minnesota.

Racialization Beyond Blackness: Diaspora, Culinary Nostalgia, and “Ethnic Spice”

As mentioned above of African diasporic foodways, for immigrant groups throughout US history, food has functioned both as a means for racial othering and oppression and as a means for diasporic cultural continuity and the maintenance of a distinct ethnic identity. And while this entry does not detail the history of immigration and food in its entirety, it is necessary to point to some important trends in the ways which immigration implicates food and ethnic foods in racial hierarchies and racialization throughout US history.

“Nostalgic gastronomy,” or the process by which one recreates their memories of home through food, has allowed immigrant groups, often in the face of oppression, alienation, and isolation, to bridge a “sensual gap” between the homeland and the United States by engaging in many of the culinary practices and cultural traditions of their respective home countries (Slocum 2011). While there is great culinary hybridization and exchange in the American culinary landscape, working against efforts to normalize their diets and firmly entrench them within mainstream American culinary habits, immigrant populations have pushed back and reasserted their cultural identity through the continued production, consumption, and sale of foods, dishes, and products unique to their cultural identity. For example, as

Krishnendu Ray and Anita Mannur detail, the Indian-American community has utilized food, articulated through either the literature or the restaurant industry, respectively, to maintain South Asian identity and remain culturally connected to the Indian subcontinent (Ray 2012; Mannur 2009).

However, despite the importance of immigrant foodways to the continuation of ethnic and cultural identity, immigrant foodways in the United States are often associated with the lower end of the culinary (and racial) hierarchy through a discursive connotation with toil, labor, and uncleanness. On the other hand, European cuisine has often been understood within mainstream culinary discourse for its refinement of taste and culinary skill (Slocum 2011). In fact, ethnic food itself is a racialized term that has been used to “invoke the ‘exotic’ nonwhite other and that some ethnic foods are indeed more ‘ethnic’ than others.” As such, the foods of racialized immigrant populations have often been used by Anglo whites to the maintenance of an articulate racialized cultural hierarchy (Padoongpatt 2011). For example, in the mid-eighteenth century, white American nativists often associated the Chinese population with the consumption of certain foods (most commonly rice but even sometimes cats and rats) as a means to claim that Chinese immigrants were disease ridden, dirty, weak, and unfit to enter into the larger American body politic. Despite the fact that food, specifically the prevalence of Chinese restaurants, has remained a central communal node and important source of labor for the Chinese American community, Anglo whites have used a discourse of Chinese cuisine as “foreign” and “exotic” to perpetuate the orientalist exoticization of Chinese culture and continually render them outside of American normative cultural identity.

Mexican Identity, Borderlands, and Food

One example of this simultaneous process of racial othering and the maintenance of a distinct cultural identity through nostalgic gastronomy can be seen in the cuisine of the Mexican/Mexican American community. As Jeffrey Pilcher’s several texts point out, food has been

central to the development of Mexican nationalism and the emergence of a distinct Mexican identity in the face of European and American imperialism (Pilcher 1998). Popular Mexican foods such as corn, tortillas, and the working-class staple taco essentially fused European and Indigenous Mexican cuisines together, resulting in a new hybrid cuisine. This cuisine which merged parts of European and Indigenous culinary cultures together formed a new cuisine which came to be seen as representative of a distinct and emergent Mexican identity. These “Mexican” foods expanded into the United States with the annexation of Texas in 1845, the cession of Mexico in 1848, and the subsequent influx of Mexican immigrants across these newly established borders. The continuation of Mexican culinary traditions by Mexican populations in the United States offered the ability to remain connected to that Mexican ethnic and national identity by populations no longer living in what was politically considered part of the Mexican nation-state. For the Mexican American and Mexican populations, food became a way to maintain cultural and ethnic identity despite the shifting and permeable nature of the national borders and changes in national governing bodies.

However, much like Chinese cuisine before it, Mexican cuisine was used within popular American rhetoric as a means to distinguish Mexicans as outside of white American cultural identity and hence in a marginalized place in the racial hierarchy. In the 1940s, 1950s, and 1960s, especially in Southern California, Mexican food was associated with the influx of working-class migrant labors entering the country as part of the *bracero* program (a federal program which encouraged the immigration of seasonal farm laborers from Mexico). Mexican food, just like Chinese cuisine before it, was exoticized and racialized in this context. Mexican food came to be commonly understood by white Americans in Southern California as cheap, dirty, and of a lower culinary and cultural status as compared to European cuisine. Hence, this rhetoric surrounding Mexican cuisine hardened the racial tensions in California during the mid-twentieth century (which boiled over into physical violence

during the Zoot Suit Riots). According to Pilcher, it wasn't until Glen Bell opened several fast-food Mexican-themed eateries, known as *Taco Bell*, that Mexican food began to gain popularity outside of Mexican ethnic enclaves. Pilcher argues that Taco Bell succeeded not just by selling fast food but rather by selling a form of exoticism that allowed white Americans to sample Mexican cuisine without crossing the lines of segregation in the 1950s in Southern California, hence making it "safe" for white Americans to explore (a highly corporate and hybridized version) Mexican culture (Pilcher 2008). Therefore, food allowed Mexican and Mexican Americans to remain culturally connected to Mexico, while it was simultaneously being used to racialize Mexicans as outside of and inferior to normative American cultural identity.

Food and White Racial Privilege

It also should be noted that within the racial ideologies of late twentieth-century liberal multiculturalism, white Americans have often utilized the consumption of "ethnic food" as a means to rearticulate their cultural and racial privilege. Common among progressive white food-conscious consumers of the late twentieth century is what Lisa Heldke defines as "cultural food colonialism," a white American passion for eating, cooking, and appreciating food that is rooted in a racist colonial thirst for adventure, authenticity, and novelty. As Heldke and other food scholars have noted, this logic reaffirms white privilege and white normativity by simultaneously rendering ethnic food as foreign and by securing the "food adventurer" as willing to collect and publicly display their experiences of ethnic and racial difference (Heldke 2003). White Americans have utilized orientalist logic to construct many ethnic foods from communities of color as peculiar, bizarre, unfamiliar, and even sometimes dangerous. Eating ethnically often becomes a performative act that progressive white consumers utilize to express a sense of bravery and adventure, as well as an adaptability and openness to experiencing the supposedly exotic cultures of immigrant groups. What is crucial, however, about eating ethnically for

white consumers, however, is not just that the act is predicated on constructing ethnic food cultures as exotic or even grotesque (which is part and parcel of a nativist racializing project that throughout US history has understood immigrant bodies as unclean and disease ridden) but also how that consumption is then called upon to articulate a very particular type of ethnic cultural cachet and reinforce the cultural privilege of one's own white (privileged and normative) identity.

In summary, while white US citizens have used the taste of foreign foods to racialized immigrants of color people from Asian, African, and South American populations as exotic and hence racially other, these diasporic populations have also relied on cuisine and taste to discern and maintain their ethnic identity and assert their cultural validity within the dominant white normativity of mainstream American culture.

Food Justice and Contemporary Correlations Between Eating and Race

This entry concludes by detailing some of the contemporary correlations between eating and racial identity by paying particular attention to contemporary debates surrounding food justice as well as by exploring the racial practices of contemporary alternative food movements. Communities of color often have not embraced alternative food movements (including the organic movement, local food movement, and slow food movement), which many of these movements' proponents envision as a solution to the widely documented ills of industrial agriculture. However, this is not the result of an African American community unsympathetic to the movements overarching goals of improving food quality and national health, but rather because of the use of color-blind rhetoric and exclusionary practices by active members of movements. These movements often articulate white ideals of health and nutrition as well as present a whitewashed vision of farming that erases the past and present of an American agricultural system predicated on racial exploitation. The US agricultural legacy

is tied to an institutional racism that forced African Americans and Mexicans into agricultural labor and removed Indigenous people (Mexicans and African Americans as well) from their land (Guthman 2008). However, the practitioners of alternative food movements present a vision of an idealized agricultural past that is free of such racial oppression. The primarily white members of alternative food practice seldom see the color-blind and whitewashed agricultural history as problematic, in part because of their own place of racial privilege and in part because of the pervasive normativity of their white racial identity. However, black activists are beginning to make a claim for the centrality of an African American space within alternative food movements, and it is increasingly common to see people of color at the center of alternative food practice, especially in inner cities throughout the United States.

Due to the long-term effects of institutional racism, African Americans disproportionately live in economically disadvantaged neighborhoods that lack access to quality, healthy, affordable food. These neighborhoods, known as food deserts, often lack an adequate number of (if any) quality supermarkets. It has been proven that such urban spaces have spatial and structural characteristics that result in poor diets, which have a detrimental impact on African American health and lead to disproportionately high levels of diet-related disease in the black community. The pervasive rhetoric has been that these health effects are not structural but rather a direct result of unhealthy characteristics of African American cuisine, in particular soul food, which critics argue is high in saturated fats and cholesterol. However, African American scholars, activists, and cookbook authors such as Bryant Ferry and Breeze Harper have written against such negative associations and have used food to combat the health problems of the black community by making radical claims against the colonization of the African American diet. Rather, it is important that the lack of access to quality food and the detrimental health effects that result in black communities are seen as a direct result of racialized institutional policies that have historically left African American communities at a disadvantage.

As expressed in the film *Soul Food Junkies* by scholar and activist Marc Lamont Hill,

There is no better example of racism in the twenty first century than the relationship between black people and access to healthy foods. People think about racism as an individual act of discrimination from one person to another, but that's not what it is about. It is about systems, it is about structures, and it is about institutions. And the fact that black people live in neighborhoods where they can't get access to healthy food choices, and white people can get healthy food choices, that is classic text book racism. You want to wipe out an entire generation of people, you want to engage in a kind of twenty first century genocide, all you have to do is continue to do what we have been doing; which is deprive black people access to healthy food. (Hurt 2013)

Summary

Race is defined as an evolving and historically contingent social construction predicated on the ability of Anglo whites to assert, promote, and maintain the ideal of white supremacy against all other racial groups. This racial hierarchy is predicated on a racial contract that underwrites and guides all major institutions and cultural practices in the United States and thus assigns political, economic, and social privileges based on racial identity. Despite the shifting nature of race, since the advent of New World slavery, there has remained a salient racial hierarchy in the United States, which consistently places whiteness at its apex.

Food and the sociocultural act of eating have been significant markers of racial identity and central to the process of racialization and the maintenance of distinct racial hierarchy throughout American history. Since the advent of New World slavery and the emergence of sugar plantations in the New World, food has been used to correlate communities of color, in particular African Americans, with a marginalized position in this racial hierarchy. However, communities of color have also used food as a means to assert their agency and self-determination, thus challenging their position within the dominant racial structure. Some of the major correlations

between African American identity and food include sugar consumption, plantation slavery, and the advent of racial hierarchies; transatlantic slavery and food in the construction of American cuisine; common African American tropes as constructed through food in postbellum popular culture; the role of food in radical black politics; and the role of race in alternative food movements and contemporary food justice issues. In addition, food and eating have been central in the process of colonization and racialization of Indigenous peoples; in the racialization and exoticization of immigrant populations, including but not limited to Chinese, Thai, and Mexican communities; and in the construction of white privilege. As such, this entry has maintained that food/eating culture and racial identity have been inextricably linked and have symbiotically functioned to construct one another throughout American history.

Cross-References

- [Culinary Cosmopolitanism](#)
- [Culinary Tourism](#)
- [Ethnicity, Ethnic Identity, and Food](#)
- [Food Deserts](#)

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Recipes

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Synonyms

Description; Formula; Instruction; Method; Procedure; Process; Receipt

Introduction

Recipes are the instructions for preparing an item or description of a process to accomplish a final

product. They also represent a style of literary writing described as “discourse” and can be structured in multiple different ways, depending on the product, the author, or the audience. Recipes are featured in many different formats, such as books, blogs, memoirs, websites, textbooks, newspapers, magazines, and still by word of mouth. Each of these sources targets a different audience, which allow the recipes to be shared with a large variety of people. Some may target professionals, while others write for home cooks. This entry will follow the history of recipes and look at the different sources of recipes such as cookbooks, websites, blogs, magazines, and other sources. It will discuss the different types of formats to write a recipe and delve into the ethical questions that arise from the writing and sharing of recipes.

History

Recipes did not begin as a culinary source. Their beginnings were of a medical root. *The English Housewife*, written in 1615, was one of the first publications to contain written recipes, or “receipts,” geared to the housewife. It used food ingredients as medicine, from both a curing standpoint and a preventative one. The wives of the farmers needed to know how to cook food, since they used cooking as a method of preventing many illnesses caused by unsafe water sources used for crop irrigation. Housewives needed to be intelligent and learned enough to be able to follow the written procedures, but not smart enough to bypass doctors. Doctors became the first recipe authors, of sorts, as they wrote down ingredients and procedures for women to care for the family; these included medicinal uses of food and food as prescribed lifestyles (Knight 2012).

In Roman times, around the first century, mothers taught their daughters how to prepare the foods commonly consumed in the home. This method of handing down recipes was common for many centuries, all the way through the nineteenth century, when literacy finally began to increase within female populations. When the

recipes were first written, they did not follow the same guidelines or structure as modern recipes. In many cases, there were no lists of ingredients or any specifics on the quality or amounts required to produce a recipe with a consistent outcome. The instructions had people working off of descriptions of the end result of the product without including measured quantities. Descriptions such as add enough flour to make the dough stiff were meant to provide enough guidance to prepare food. Even though the instructions were written down, there was still a practical or oral aspect that must have occurred in order for the recipe to be passed down successfully. A person who prepared the item had to really understand how much flour is enough to make the dough stiff and how stiff the dough must really be. This made the recipes less accessible to people outside the family circle (Arnold-Ratliff 2011).

The early twentieth century began to see more formalization of a recipe. There were new tools introduced to the home and to the market that simplified the process of having real measures and also new methods of distributing recipes (Arnold-Ratliff 2011). However, in the 1920s and 1930s, in the time of the industrialization and depression, published recipes showed off an unethical approach in being published. This time was an era of the growth of industries, gadgets, and processed foods. The recipes published, many times were created by the companies of these food products or gadgets, made to sell what was needed to make the recipe perfect, thus making the recipe more about the use of the product, than the cooking of the meal (Wajda 2008).

Women’s magazines of the early twentieth century featured recipes for the housewife to produce in her own home; they were also the perfect source to publish recipes laden with hidden advertisements for women to buy processed foods and products that advertisers wanted to sell. The manufacturers and producers of fast food and convenience products began to advertise the lack of time for women in the household to cook and did that not only through the products but through the recipes of easy-to-make, fast food in the home. Many times, these were advertised as

such in their titles, by including phrases such as easy to make or fast within the titles of the foods. In addition, recipes began to include suggestions of tools to use within the recipes that would also help to speed up the process, continuing the effort by manufacturers to sell. This made a recipe less of a cooking guide and more of a consumer marketing campaign.

Recipes in magazines, however, continue to be popular since then due to their style of writing and the fact that they are embedded within other topics that attract women. Whether it is fashion, news, or gossip, women's magazines feature recipes that target the type of reader. The recipes within magazines have attracted readers since the late nineteenth century; these now included more precise measurements and procedures that could be followed by a person, even if they had not before seen or tasted the food. Not only were the recipes published in the magazine itself, but the tradition of printing recipe cards for subscription began. Women signed up for a publication, which included both a magazine and recipe cards sent to the home in small collections. Some publications also included the wooden box to organize the recipes in. These recipe cards became more than just a way of sharing recipes; they are now a part of nostalgia and to many a diary of loved ones passed down through generations. Recipe cards spattered with grease, dough, or batter tell the story of a family. Martha Stewart Living magazine still prints recipe cards and also has more modern approaches such as applications and websites to accompany their printed magazine (Arnold-Ratliff 2011).

In the early twentieth century, a new cookbook genre became popular with the rise of immigrant cookbooks written due to nostalgia. Those far from home continued to learn their cooking heritage and traditions that had been lost or forgotten since moving far away from their homeland and, in many cases, their families. Many of these cookbooks are written in the form of community cookbooks, which are not only often a memoir filled with recipes, but one that is written from many different perspectives and which tell different stories, since they are a compilation of the recipes of a myriad of families. This was also

a good way to share the one attachment that people tend to long the most when migrating, the food. Replicating the eating habits that in many cultures also include the traditions of eating as a family and form the bond between family members was important to immigrants. Writing it down was, in part, to keep the tradition alive and also to tell the story of their family and migration. In many cases, these hid a deeper story or context that would have been seen as unethical or illegal to share in the motherland. The cookbooks were a way of integrating recipes into a critique of the social, political, or economical context of a country, by writing about the food of their homeland in the language of the country they moved to, sharing experiences about life and culture in their home country.

Community cookbooks became a new way to share recipes, usually benefiting a good cause. However, this genre made it harder to leave out an ingredient or change the product, since many community cookbook projects were advertised “real” recipes that were tried and true. Due to this, the publishing of these recipes in these books attached the name to the reliability of a recipe. This became a form of “contract” which made it necessary for the recipes to be shared honestly (Kelly 2012).

Through the evolution of society, recipes have marked societal changes that changed households. Before the introduction of refrigerators, freezers, and stoves into the household, recipes commonly included procedures that described how to prepare and serve food without these devices. As the more modern implements were introduced into the home, recipes began to change in their procedures, teaching housewives how to properly prepare meals that made use of new kitchen gadgets. So, though the recipes and cookbooks are not themselves history books, their contents reflect the historical changes from the time, allowing historians to use them as historical sources (Kelly 2012).

Recipes also mark family histories. As recipes are passed along from one generation to the next, they usually are labeled with the name of the person passing along the recipe or the events in which they were usually served. As families have

welcomed other members and grown, recipes change and are modified, new ingredients are added, and different procedures are tested, until the result has become a newer, more modern version of a family classic. As families have become multicultural, the recipes have managed to record the societal changes. Many have also initiated food traditions for communities, which have also evolved through time, but have become part of what represents that community (Kelly 2012).

Recipes can be a way of showing societal needs and changes, since recipes are created for many different reasons. They can be as a source of need to feed one or many, a way to wisely make use of ingredients when resources are scarce, and creativity and passion for those who may want to explore a new avenue or, in many times, even competition (Heldke 1988). The way a recipe is created can also have a direct correlation with the literacy and socioeconomic levels. People with low literacy rates will not be able to read a cookbook, magazine, or any other written source of recipe. For that matter, many of their recipes continue to be passed down through oral tradition or they must rely on television or other visual format or aural format. It then becomes a matter of expertise and who the audience is. Part of writing a good recipe is making it clear to follow for the target audience. Part of writing a good recipe is making it clear to follow for the target audience.

Community cookbooks were the most popular during the late nineteenth and early twentieth centuries in the United States. The recipes were compiled and made into cookbooks by churches, community centers, aid centers, and other entities, usually as an item for sale used for fundraising. They were not considered great culinary resources or pieces of literature, since the authors were common people, usually homemakers, sharing family recipes. They are now recognized as primary sources for the history of small communities, families, towns, as well as gastronomic history. Due to the small circulation within these small communities, they are rare finds now stored in the Library of Congress and most recently scanned and digitized to allow for better

record keeping of books in poor conditions due to age (Kelly 2012).

Community cookbooks are a different category of food writing. Each cookbook is written from multiple perspectives, since it usually contains a collection of recipes sourced by a myriad of people from a particular community or group, making the style in which each recipe is written different. Many of these cookbooks were also funded by local businesses in order to cover publishing costs, which in turn entitled them to advertisements within the book. Today, these advertisements provide a historical guide to the businesses and products sold in the different communities where these cookbooks were published. They also give insight on new products in the market at the time when they were written (Kelly 2012).

Most community cookbooks are not heavily circulated. Instead, their main readership is from the local community. Even though the recipes all vary due to the different authors who provide them, they are not all going to provide the same feeling of comfort with preparing the recipe as the cookbooks all written from an author that is usually followed. Instead, those people who have a good cooking reputation within the community will generally provide the recipes that are said to be better in quality by the standards of other community members who spread the word (Tomlinson 1986).

Modern Recipe Sharing: Families, Cookbooks, and Blogs

Until recently, with the popularity of blogs, cookbooks were the main source of recipe sharing. At first glance, food recipes, in general, appear to be structured in the same way regardless of the source in which it is published. They generally list the ingredients at the top and below and include the instructions with which to put the ingredients together. This can be done in the form of a list or in a paragraph form. Many recipes have been guarded as a family's best-kept secret. Some will share recipes by omitting an ingredient. Oftentimes, that omission will

make the recipe falter. Other times, it will just alter the taste slightly, leaving it a little less delicious than its own version. Lying by omission is an unethical approach to recipe sharing, but a common practice, nonetheless. Many times, the owner of the recipe guards it and only gives out parts of the recipe, in order to remain the expert in preparing the dish. The same is true with celebrity chefs who are also on television or are cookbook authors. They want to be able to sell their products, so they will create special “secret” spice mixes that are needed in order to make the dish. These spice mixes are one of the ingredients listed in the recipe. Emeril Lagasse, for instance, has a line of spice mixes needed to prepare his dishes, which are sold in stores. In order to prepare these recipes, one would require his spice mixes (Essence), forcing readers to have to purchase the ingredient within his line of products to have the expected results of the recipe. Because of the importance placed on using that particular ingredient, a reader may steer away from the recipe due to not having such an important ingredient.

Recipe ownership or copyright becomes a legal matter best discussed by attorneys. Some recipes are altered to just meet the requirements to give an author new ownership to a creation. Copyright laws are not as specific or strict when it comes to the publishing of recipes, especially since the advent of the electronic recipe. This is due to the classification of recipes as a list of ingredients rather than a literary publication. Because creations have no protection to copyright laws and recipes have been declared as such, the same is true for them. The increased use of Internet sites as methods of exchanging recipes has had a huge increase on the number of recipes that are shared in blogs and other electronic methods, allowing readers not to buy magazines, newspapers, and cookbooks they would have otherwise published. Many publications have and will continue to lose audiences due to the use of online journals and blogs, and publishers will cease advertising in such publications, possibly leading many to cease printing (Lawrence 2011).

Cookbooks are one of the most popular forms of public recipe sharing. Cookbook sections in

bookstores have continued to grow, flooded by books promising easy-to-make, flawless, gourmet, diet, ethnic foods sure to impress. Others become beautiful coffee table ornaments, meant to feature beautiful pictures of culinary creations or ingredients from around the world. So, though filled with recipes, some of these books will never be cooked from. The recipes will serve more as a literary text, a romance or adventure novel, or a fable, rather than a guide to food preparation. This can be true with many cookbooks, which feature beautiful pictures of the country and its dishes, but recipes that are unlikely to be featured in the common American household. Some of the recipes can be tedious to prepare, requiring more time than is available for the home cook. Others will have recipes of food products not likely to be consumed in the home today, such as organ meats or products that are expensive to buy in a time of troubled economy, such as caviar. However, the role of the woman as the homemaker may still entice her to read a cookbook, even if just as a literary work, reading through the recipes she knows she will not prepare (Bower 2004).

Many modern cookbooks have changed their style. No longer do cookbooks just list a series of recipes and are meant to be a source of culinary instructions as they once were. Many cookbooks now will blend in a story, making them more of a memoir and a cookbook and not just a recipe book. This is especially true of the cookbooks written by authors of blogs or stars of cooking shows, whose stories people have become familiar with and have become part of the family. The Barefoot Contessa Foolproof: Recipes You Can Trust, authored by Ina Garten, Food Network star, for instance, is embedded with first-person advice and instructions as well as personal stories and photographs of her family and friends, all of whom helped her illustrate the story of her dishes (Garten 2012). Deb Perelman, author of the Smitten Kitchen blog, recently published her first cookbook, the Smitten Kitchen Cookbook, which also features photographs of her family embedded with stories of when the recipes were made, written in the first person (Perelman 2012). So, the recipes take the backseat of the cookbook. Many of the recipes featured in both of these

books as well as other similar books note that they are adaptations of recipes from other sources and authors, slightly modified to fit a different setting, taste, texture, or purpose.

Though recipes themselves cannot be copyrighted, cookbooks and other media, which contain descriptions, photographs, or any other source of material that may be copyrighted, or a combination of other material mixed with recipes, are eligible for copyright. However, even within the copyrightable material, there is an unethical consideration; the US government copyright page states that if a person has specific ingredients within a recipe that they would not like revealed, they must not include them in the recipe, since copyright applications are public record. This allows for the lack of protection to occur (US Copyright Office 2011).

Recipe blogs, as is the case of *Smitten Kitchen*, *101 Cookbooks*, and many others, have become more than just a collection of recipes. Many of them are known for their food photography. Others have become a new type of memoir. Blogs are embedded with the story of the author and allow for commentary from the community of readers who will also inspire and impact future entries. Also, there are more characters involved, since most of them have an autobiographical style that allows readers a glance into the life of the author. Blogs are nothing more than an electronic journal, one that is published immediately for people to read, allowing the authors to create a following. Many blogs have a female readership and resemble postwar cookbooks. They have become a source of teaching, not only food recipes but the recipe to being a successful housewife or hostess. The recipes will generally follow a common theme, such as comfort foods, vegetarian foods, healthy foods, or whatever the author's focus may be (Salvio 2012).

Blogs changed food sharing, since a cookbook or recipe within a journal or magazine would include the preparation of the dish itself and maybe a photo of the food. Blogs, however, do not just focus on the food itself but also discuss the process the cook had of getting to the final result, interspersing it with photos, which often

illustrate the different steps of food preparation that allowed them to arrive at the final dish. This does not always include a flawless preparation, as is thought to have in many cookbooks. They also tell about the failed attempts to make, what in their imagination would turn out to have a fantastic end result, in the hopes to get commentary from readers on the process or even advice on how to make it work. These become part of the "story," since many food bloggers are professional writers, photographers, or graphic designers, who are amateur cooks and would like to combine one of their hobbies with the one thing they do best, in order to show off their skills in the hopes of being discovered. That blog at that point becomes more than the platform on which to share cooking advice and becomes an electronic portfolio, the beginning of a book proposal of sorts, becoming a gateway for publishers to find talented authors (Salvio 2012).

Many recipe blogs become the easiest sources for home cooks, since many are written by home cooks and housewives, who are constantly reminding readers they too are regular people, as they apologize for lapses in writing due to heavy workloads, travels, or taking care of their families. They have also become a quicker way to search for recipes as well as one that is less expensive. The recipes themselves and the ways their style differ, though most of them take the more modern approach of listing the ingredients first and providing the detailed instructions on how to put them together later.

Each blog has a topic that threads the recipes together depending on the author; this form of e-autobiography focuses on the one aspect of a person's life that is the most important and that becomes the glue that attracts readers (Salvio 2012). *Smitten Kitchen* focuses on family and comfort foods enjoyed by adults and children, oftentimes featuring recipes that are quick to make while taking care of a child or more detailed, time-consuming recipes prepared while someone else is caring for the child, while she has time to try out a recipe the author had been longing to make. Another style of blog is the one focusing on a dietary restriction or preference, as is the case of *101 Cookbooks*, which is

about vegetarian, healthy options, or the myriad of blogs that take us through a person's struggle with chronic diseases, which change their eating and lifestyles forever and allow us to participate on their quest to making the perfect dish that will not taste as if it is missing something.

In one sense, many blogs resemble the cookbooks of the era of the depression and postwar World War II. In those decades of the 1930s and 1940s, women began to work to help support the family while men could not do it on their own or had gone to war. This created the need for two types of foods: comfort foods and those that were quick to prepare. These cookbooks also usually featured more of a memoir style of writing featured within modern blogs (Salvio 2012).

Blogs now feature many published recipes by home cooks and amateurs sharing their story of making it and even sharing what modifications they made to the recipe to make it more to their liking. Sometimes, they will change the name a little bit. Other times, they will simply state adapted from a source or inspired by such other sources. However, there are also the times when none of that is mentioned and the recipe is simply published as one more favorite within a repertoire that now gives readers the idea that the recipe was made up by the author of the blog, who is actually hiding the true creator of the recipe. Though the US copyright laws do not protect the lists of ingredients and claim that recipes cannot be copyrighted due to their constant evolution, the International Association of Culinary Professionals (IACP) has come in to protect the creations and created ethical guidelines that request people to use the aforementioned words of adapted by or inspired by to give proper credit to the originators of the recipes (Gemperlein 2006).

Recipes Writing Styles

The first part of the writing style of a recipe is witnessed when reading the title. Many recipes are not given a name that is realistically describing the dish to be made. Instead, titles are used to be enticing (chewy chocolate chip cookies), sometimes to give information about the author

(grandmother's pot pie), and other times to show prestige (best cookies ever). However, these do not tell a lot about the end result of the product. This can create a high expectation, one that is subjective and left to the imagination of the reader; if the end result of the product is below the expectations of the reader, they may feel misled, causing them to believe that they were lied to. Also, oftentimes, there may be ingredients that are unexpected in the recipe from reading the title that may cause a reader to believe that the recipe is not what they were promised. For instance, chocolate chip cookies or brownies may have walnuts in them, but were not listed as walnut brownies or chocolate walnut cookies.

The body of recipes can be written in many different styles. Recipes written in the style of procedural discourse will follow a structure that focuses on organizing the steps. The language will vary depending on the audience the recipe is geared towards. Recipes written for professionals feature jargon and industry terms, while that for the home cook uses more common language understood by nonprofessional cooks. However, whichever the audience, the procedure is very organized by numbering or listing the steps of the procedure. In some cases, keywords within each step can be highlighted, making each of the steps easier to read (Wharton 2010).

Prose is another method of writing a recipe. Some recipes will list the ingredients on the top and write the procedure as prose, with a more densely structured paragraph that goes through the entire preparation process. In the case of Escoffier, the entire recipe is done in prose, not listing the ingredients first, but rather the entire book structured as paragraphs (Escoffier 1979). Because the structure of these is blocky, it does not allow for easy skimming through the steps and will require more time and effort to go through the recipes. In many cases, these will be geared to professionals or people who enjoy cooking and understand the reward gained from reading through this style of recipe style. Reading through a recipe is not like reading through any instruction booklet, since recipes tend to have a more rewarding result to the process than most other sets of instructions (Wharton 2010).

In addition to how the recipes are written from the instruction perspective, many recipes are formatted in such a way that there is a short description at the introduction of the recipe. This may be within the beginning of a recipe. Many include instructions on serving sizes, serving suggestions, and a little bit about the recipe. Others will include a short introduction that explains the final outcome of the recipe. In the end, these prior instructions and observations may lead to prior misconceptions and judgment for the reader, in many cases causing the reader to try out or dismiss the recipe proposed to the author due to the dislike of the introduction or the instructions provided to preface the recipe. The opposite may also be true with instructions or descriptions appealing to the reader in such a way that they automatically buy into the recipe without even having prepared it yet and will be more likely to try it (Tomlinson 1986).

The choice on how to write the recipe and the style to use, though sometimes not purposefully, will become unethical. Recipes have the tendency of lying, sometimes to protect the integrity and “rights” to the recipe, and others simply by omission. Some families have such pride for the creations that are adored by many and also deeply connected to their roots that they will “take them to the grave.” Many great recipes have probably been lost or forever morphed into a variation, due to people leaving out one key ingredient that no one can know about because it is what made grandma’s recipe the best in the community. Many people find that tradition normal and acceptable; if they gave others the full recipe, the recipe would be able to be replicated, and they would no longer have the right or privilege to be the one to always prepare it (Tomlinson 1986).

The lying by omission occurs oftentimes depending on the audience to which the recipe is targeted. Many recipes, especially those geared to professionals, will include certain ingredients listed with the measurement of taste. Some books will have recipes that at a glance will seem easy, but as the cook reads on, it has them cooking out of two or more recipes from the cookbook, in

order to complete the one recipe intended, making it way more complicated than the original impression. Food recipes are written based on a number of assumptions made by the author; for the amount of food per serving, for instance, when not noted by measure, the recipe will state the number of servings. However, that is relative, since the author will likely not know how hungry the person cooking will be, and if the amount considered to be a serving is not included, the amount may be different than what the cook expected to make (Tomlinson 1986).

Many recipes are a compilation of unfinished instructions; recipes will follow all of the steps of listing ingredients and then the basic description of how those are put together. However, oftentimes, they are done in a way that assumes that all the readers will know basic cooking steps or understand certain qualities about an ingredient that they have not yet been exposed to. When transferred orally, whether by a family member, television, or a demonstration, a person is able to see what the ingredients look like and what the textures feel like and see the thread of every single part of the process answering questions that are left unmentioned and more importantly unanswered to the reader. For instance, many bread recipes will list the amount of flour needed but will oftentimes say more flour for kneading or five cups of flour (or more if needed). The recipe, however, will not specify how much is more, how much flour for kneading, or any other details that will allow a nonprofessional or person who has never had access to bread making to understand the real instruction (Tomlinson 1986).

The incompleteness of recipes is also illustrated within the preparation of the ingredients used within the recipes themselves. Oftentimes, a recipe will include a small instruction within the list of ingredients, oftentimes also differentiating when that preparation must take place with just a small detail. For instance, a recipe may ask a cook to have flour sifted. This automatically makes an assumption that the person will know how to sift flour; in addition, having the ingredient first, with the comma, then the action, will mean the action must take place after measuring.

However, if the instruction read sifted flour, then the action must occur before the ingredient is measured. Many do not know this, since it is not readily explained. Missing the step of preparing the recipe will very easily ruin the dish, which the reader had a high expectation for (Tomlinson 1986).

This follows through into the assembly of the ingredients as well. For instance, recipes that call for creamed butter assume that a reader will know that they should beat the butter with sugar until it has enough air incorporated to it and that it will be creamy and lighter in color. However, many readers will not know that, and others may not have a mixer to facilitate the process already making it deceiving to the reader that they would be able to make the recipe (Tomlinson 1986).

Though the recipes themselves are usually structured with a list of ingredients and a set of instruction, their publication becomes different through the voice of the recipe or the person preparing it. Each of them has an emotional connection for the author and those who read it. They are also more than just an instruction to cook; recipes and their collections are also a part of history, literature, culture, and craft.

Summary

Recipes are instructions to accomplish a final food product. They include the ingredients and procedures needed to prepare them and can be written and formatted in different ways. There are many different sources where they are published, each with a different readership. From cookbooks to blogs, this entry looks at the different writing styles of recipes as well as the ethical considerations behind recipe writing and sharing.

Cross-References

- [Cooking Tools and Techniques: Ethical Issues](#)
- [Culinary Tourism](#)
- [Restaurant Reviewing](#)

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Resource Conflict, Food, and Agriculture

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Synonyms

Climate Change; Colonialism; Conflict Resolution; Egalitarianism; Foragers; Global Land Grab Controversy; Globalization; Land Disputes; Lifeboat Ethics; Malthus; Neo-Malthusian; Peasants; Resource Scarcity; Resource Tenure; Small Farmers; Structural Inequality; Violence; Weapons of the Weak

Introduction

Resource conflict refers to tensions, disagreements, disputes, and struggles involving control over, or use of, land, water, forest, pasture, and related environmental features. Wars, violence, and insecurity related to resources, ranging from the oil fields of Iraq, the savannas of Darfur, the jungles of Chiapas, and the rural-urban interface of China. What constitutes a resource seems straightforward: an element of nature that people value and seek to use to attain an end. Defining value and use, however, is always culturally mediated, so that different societies may hold very different meanings, needs, and priorities regarding the world they inhabit. Despite the global spread of commercialization, Elizabeth Emma Ferry and Mandana Limbert (2008, p. 4) point out that "... nothing is essentially or self-evidently a resource. Resource-making is a social and political process, and resources are concepts as much as objects or substances." The presence of different cultural views and practices about the environment might not be recognized or easily translated, so that this incommensurability of understanding may in itself become a source of conflict.

The language of conflict, including of its resolution or transformation, is notoriously

imprecise. For present purposes, "conflict" is defined broadly here as a situation where people clash due to a perceived serious incompatibility in their needs and interests, making the status quo no longer acceptable. This definition draws attention to the importance of focusing on underlying concerns and motives, rather than on outward manifestations of discord or antagonism. When dealing with food and agriculture, many conflicts are latent, reflecting structural inequalities, differences of power, or similar social cleavages. These latent conflicts are often deeply rooted in historical political economies and cultural institutions. Similarly, seemingly local or small-scale disputes may have broader socioeconomic, political, or cultural conflicts embedded in them. In general, the form and intensity of resource conflict vary widely. Conflict occurs at all societal levels, from the intra-household to the global. In many places resource conflicts appear to be increasing, driven not only by rising demand but also by political, socioeconomic, and cultural change. While humanity possesses the capacity to address issues of injustice and competitive consumption that drive many of these conflicts, it is by no means certain that it will be able to do so.

The Questions of Causality and Understanding

Resource conflicts abound, and so do explanations for them: structural inequalities rooted in historical political economy, environmental scarcity, need or greed, resource curses, bad governance, and so on. To a large extent, these different interpretations reflect the varying theoretical interests and assumptions of their proponents. For example, Thomas Homer-Dixon's (1994) neo-Malthusian analysis highlights the role of population growth and rising consumption pressures as key factors in sparking violent environmental conflicts. In contrast, Nancy Lee Peluso and Michael Watts' (2001) collection of political ecology case studies focuses on how violence is a social project shaped by the imperatives of state power and market-driven actors in

specific settings. These differences in approach also underscore the wide range, complexity, and dynamism of conflicts, making it impossible to understand them fully from a single analytical framework. Resource scarcity, competition, inequality, poverty, neoliberalism, neocolonialism, and so on may seem as if they are “obvious” causal or triggering agents for conflict, yet people may decide to respond to circumstances through peaceful, rather than conflict, pathways. The plausibility of singular prime movers or triggers declines when one moves from the macro level to particular cases, where site- and actor-specific variables become more visible. This is not to say that inequalities, scarcity, governance, and so on do not matter, but rather that their relevance and significance in any setting be demonstrated rather than stipulated.

Understanding resource conflicts means understanding people, their characteristics, capacities, interests, and priorities. This means recognizing human diversity, including differences of gender, age, cultural background, and other dimensions. Gender, which refers to the culturally defined roles, relationships, and responsibilities of females and males, is an especially significant variable. The importance of women as resource controller and users is often underestimated or downplayed, which in itself has been a source of conflict. Discrimination against women embedded in tenure systems defined by custom, religion, or state authority is an inherent source of tension, given on-the-ground realities of women’s actions as resource decision-makers and users. It is important to bear in mind, however, that conflict can follow “myriad social fault lines, pitting national and local elites against ordinary citizens, neighbor against neighbor, kinsmen against kinsmen, and husbands against wives” (Berry 2002, p. 639). In a study of land conflicts in pre-genocide Rwanda, for example, Catherine André and Jean-Philippe Platteau (1998) found that intense competition for resources spurred by population pressures, increasing inequalities, and changes in inheritance custom had brought property disputes into “the very heart of family life” as children clashed with parents and siblings with each other.

Egalitarianism and Its Legacy

Unequal access to resources is one of the major factors generating conflict at all societal levels. It is a pervasive feature of today’s globalized existence, as well as for many societies in the past. In fact, the legacy of past structural inequalities still influences the occurrence and character of resource conflicts in several parts of the world. For most of human history, however, food procurement occurred in a very different setting: small-scale, egalitarian foraging societies. The legacy of this long period of humanity’s past is worth considering, Christopher Boehm (2012) observes, since it is the period when humanity’s sense of morality emerged as a part biological and cultural evolution. His account of forager society differs from the Hobbesian portrayal of a realm where everyone was the enemy of the other. Drawing on ethnographic and other evidence, Boehm argues that sharing and cooperation in hunting, food distribution, and other tasks served as the cauldron for the rise of a moral community. Boehm also contends that egalitarianism was not the inevitable outcome of food or other material limitations among foragers but an outcome of an “intentionally reverse dominance order.” Peer pressure and sanctions held in check those deemed as too self-serving and disruptive. Douglas Fry (2006) has observed that foraging bands most frequently dealt with resource scarcity by sharing, rather than with hostile competition, expecting reciprocity at a future time. Crosscutting ties based on kinship, friendship, shared rituals, and trade fostered trust and cooperation.

Sharing and reciprocity continue to be major economic principles in contemporary foraging societies, as well as among family-based farmers and herders, along with the urban poor. For people with low incomes, mutual assistance from relatives, friends, and neighbors constitutes a key economic resource, helping to overcome shortfalls in money, food, labor, and other needs. The reliance on cooperation does not mean that intra- or intergroup resource competition or conflict is not present. As in all places, at all times, conflict happens. Its occurrence may serve to

jeopardize these networks of assistance. People recognize their importance, taking care to maintain social ties, striving to mend them when breakdowns occur. Leading procedures of conflict resolution – negotiation, mediation, adjudication, and reconciliation – also arose during humanity’s long history as foragers. A significant body of literature on conflict management and peace-building for resource conflicts and land disputes has emerged, including policy- and training-oriented works emphasizing collaborative approaches (Castro and Nielsen 2003; Castro and Engel 2007).

The Rise of Structural Inequalities

Despite these measures, societies eventually arose in human history characterized by what Jean-Jacques Rousseau called in 1754 moral or political inequality, organized on the basis of “different privileges enjoyed by some at the expense of others” (1987, p. 38). The emergence of hierarchical societies based on differential access to power and productive resources is recent by human evolutionary terms, first appearing only a few thousand years ago. With great insight, Rousseau attributed political inequality to the rise of agriculture and the gradual emergence of new ideas and practices regarding property. People came to accept privileged access to land, which altered in a fundamental way their relationships to each other:

The first person who, having enclosed a plot of land, took it into his head to say *this is mine* and found people simple enough to believe him was the true founder of civil society. What crimes, wars, murders, what miseries and horrors would the human race have been spared, had someone pulled up the stakes or filled in the ditch and cried out to his fellow men: ‘Do not listen to this imposter. You are lost if you forget that the fruits of the earth belong to all and the earth to no one!’ (Emphasis in the original; Rousseau 1987, p. 60)

Agrarian states, such as in Europe and Asia during Rousseau’s lifetime, were characterized by deep social inequalities. Disempowered rural populations had been converted into serfs, slaves, and tribute-paying peasants. As John Bodley (2001)

observes, hierarchical societies by their very nature are predatory, always seeking to expand their access to resources, while experiencing competition from within for control over assets and the benefits from them.

The rise of the industrial capitalism based on global trade, wage labor, and technology run by fossil fuels extended and intensified inequalities. Resource conflicts were rife as enclosure movements, market pressures, and political actions promoted greater commercialization of property and rural labor arrangements. Colonial regimes in the Americas, Asia, and eventually Africa used violence and treaties to dominate and displace local populations. Estates, plantations, mines, forest reserves, and other commercial enclaves appeared, while colonial policies sought to convert local populations into cheap labor reserves to meet the needs of these new enterprises. Small farmers, herders, and foragers frequently found themselves in a precarious existence, their tenure rights insecure or unacknowledged, and with market and political processes favoring haves over have-nots. Political independence by itself failed to alter the circumstances of rural populations in the former colonies. The new leaders, like their predecessors, generally felt that indigenous or local resource institutions lacked development potential.

Agrarian inequality has generated conflict throughout history. On a daily basis, however, these tensions have been usually latent rather than open in character. For various motives, including feeling vulnerable to reprisals, people have avoided demonstrating dissatisfaction. “Agrarian peace,” noted James Scott (1985, p. 40), may be “the peace of repression (remembered and/or anticipated) rather than the peace of consent or complicity.” Scott coined the phrase “weapons of the weak” to describe covert acts of resistance by oppressed groups. Resistance could take the form of theft, false compliance, sabotage, or other acts interpreted as criminal rather than political by those in power. Sometimes rural grievances erupted into rebellions and revolts. Karl Marx and Fredrick Engels predicted that capitalism’s inequalities would provoke revolutions in industrial societies, but these upheavals

mainly occurred in agrarian nations. Conflicts over land, resources, and political rights triggered revolutionary struggles in Mexico, Russia, China, and elsewhere. In some countries significant reforms occurred such as land redistribution and greater investment in rural public services. But these measures inserted new forms of state control vis-à-vis the rural population through land nationalization, collectivization, market controls, or other actions. New vulnerabilities and grievances arose among rural dwellers. Maoist China offered one of the most deadly examples, where perhaps 30 million people died of hunger during its Great Leap Forward program of the late 1950s. Market-based reforms since the late 1970s removed many of these “revolutionary” policies, opening new economic opportunities, but also setting launching new scrambles for resources.

Resource Conflicts in a Globalized World

Market reforms embraced by most of the world’s governments in recent decades have aimed to promote economic growth as the solution to humanity’s problems. Economic globalization has accelerated resource extraction to meet rapidly, if unevenly, expanding demand worldwide while simultaneously promoting deterritorialization, reducing the role of political boundaries in separating humanity. As Jack Weatherford (1997, p. 7) points out, “we now are united in one network, in a single grid of interlocking institutions that spans the globe... The same market connects every country, every language, and every religious and ethnic group.” While money allows these social relationships to appear transitory, their connections and consequences still exist. Seemingly trivial decisions made by individuals connect them with people elsewhere who may suffer great harm. For example, rising consumption of processed foods has greatly increased demand for palm oil among manufacturers. Consumers are usually unaware of its presence in their snacks and meals. Food processors find this saturated fat a useful ingredient. One of its main attractions is its low cost to them, which they obtain from Indonesia and other tropical

countries. Rising palm oil demand has resulted in the expansion of plantations, displacing many communities and destroying rain forests. Globalization has helped to some extent the critics of the palm oil industry, facilitating their ability to transmit information about this situation. It is an uneven contest, at least for now, as palm oil consumption continues at a brisk pace.

Multinational businesses increasingly exercise influence over the allocation of agricultural and food-related resources globally. According to Raj Patel (2007, pp. 99–100), “Today, transnational agricultural corporations control 40 percent of world trade in food, with twenty companies controlling the world coffee trade, six controlling 70 percent of wheat trade, and one controlling 98 percent of packaged tea.” Corporate involvement in food and related sectors has been touted as a way of promoting efficiency and innovation, promoting application of the latest industrial and biotechnology innovations. Agribusiness itself, however, is a source of conflict. Critics have long charged that corporations have used their market power and political connections to squeeze profits from both farmers and consumers. The health and environmental impacts of industrial agriculture have been other sources of controversy; for example, consequences arising from farm chemicals, feedlot wastes, and factory pollution. Agroecological studies carried out by Jules Pretty (2005) and others document industrial agriculture’s externalities – enormous financial costs absorbed by society and ecosystems as a subsidy to business. These costs include numerous and widespread damage to human health; declining quality of water, soil, and air; and reduced wildlife and overall biodiversity. Nevertheless, the political and market clout of industrial agribusiness interests are so powerful that such concerns are not easily addressed in civic society.

The scope and magnitude of conflicts related to corporate investment in agriculture and related sectors is likely to increase in the future, reflecting its current boom occurring worldwide. The so-called global land grab emerged in the news media during 2008, in the midst of rising food prices and collapsing financial markets.

It had been already under way for years, stimulated by deregulation, privatization, food security concerns, China's economic rise, and promotion of "green" businesses such as biofuels and carbon forestry. Investors have targeted agriculture and resource sectors on all continents. An early report by GRAIN (2012), a nongovernmental organization, identified investments as coming heavily from China, India, and the Gulf States, as well as the West. The types of investors also attracted notice, as they included not only the expected agribusiness firms but also hedge funds, financial service organizations, and sovereign wealth funds. Governments, especially in developing countries, often sought out investors as a means of promoting economic development through capital and technology transfers. Officials leased or sold areas, usually without consulting the communities that depend on such areas for their livelihoods. Public information is generally lacking about these deals. No one knows how much land has been transferred to investors. The Land Matrix Project verified the existence of 924 agreements in the Global South and Eastern Europe involving 200 ha or more through September 2011. These agreements involved 48 million hectares, with 35 % of this land located in Africa. Many deals have yet to be verified.

The land agreements pose a major threat to the livelihoods and lives of communities, generating conflict. According to Human Rights Watch (2012), more than 70,000 people from Anuak and Nuer ethnic groups from Gambella, Ethiopia, are slated for involuntary resettlement so that Karuturi Global, an Indian agribusiness firm, can take over their land. They have sought redress in a number of settings, though without success to date. Their situation is by no means unique. On the contrary, development projects worldwide, including dams, roads, urbanization, mines, industrial complexes, and resorts displace an estimated 10 million people annually (Oliver-Smith 2005). In China alone, officials expropriated more than six million hectares of land for urban expansion between 1990 and 2010 (Amnesty International 2012). Aside from the trauma of the moves, these communities have had to struggle with issues of compensation, the process of

moving, and the conditions of resettlement. Their experiences have often underscored their lack of bargaining power and inability to get governments, development agencies, and businesses to fulfill their obligations and responsibilities. Voluntary performance standards regarding human rights and environmental sustainability, such as the Equator Principles, have been adopted by development institutions and private businesses, but their effectiveness is not yet demonstrated. Communities have used lawsuit to pursue resource grievances, though they usually encounter substantial institutional, political, and other obstacles.

Global demand for resources has prompted modes of resource extraction that are less orderly than those found in land agreements and performance standards. Robert Buijtenhuijs (2000, p. 115) observed that in the 1980s, "a new phenomenon of 'predatory war' emerged in Africa. . . insurgent movements [who seek]. . . to secure by force of arms the economic resources in those areas which combatants control." They have focused on control of petroleum and valuable minerals such as diamonds, gold, and coltan, but agriculture and food supplies are often severely impacted by violence and insecurity. The unchecked global spread of small arms has enhanced the lethal capacity of these wars. Many studies have identified a "resource curse," which correlate to a rich natural resource endowment with seemingly incongruent poverty and endemic conflict (Collier and Venables 2011). "Cursed" situations are not inherent but the outcome of interests internal and external to these countries that benefit from modes of resource extraction utilizing violence and insecurity.

In spite of the challenges posed by globalization to community-based resource users, it has made it possible for them and supporters to mobilize on a wider scale. The uprising by the Zapatista National Liberation Army (EZLN) in Chiapas, Mexico, an area of perennial resource, class, and ethnic conflicts in 1994, received a tremendous boost from information-technology savvy supporters. Instead of being a little-known agrarian struggle in a remote part of southern Mexico, news spread quickly and globally about the

EZLN's agenda, including its opposition to the newly adopted North American Free Trade Agreement. Their information network also raised the visibility of the Mexican army's counterinsurgency campaign, causing it to halt on occasions. This situation contrasted with the government's past heavy-handed actions. Analysts at the Rand Corporation bestowed a new term, social network, to convey the skillful use of information technology in the opening phases of the EZLN's campaign. Globalization's influence is also evident in social movements such as La Vía Campesina, which brings together peasant, small farmer, and rural labor groups from around the world into a single organization. The United Nations now has a Permanent Forum on Indigenous People. Numerous NGOs such as GRAIN, the Oakland Institute, and Oxfam now deal with a range of land- and resource-related issues. Issues of agrarian justice such as land reform, which disappeared from policy discourse with the rise of pro-business policies, are being raised again by activists and academics (Rosset et al. 2006).

Resource Scarcity

A recent report by the United Nations Environmental Program estimated that in the twentieth century, "... extraction of construction materials grew by a factor of 34, ores and minerals by a factor of 27, fossil fuels by a factor of 12, and biomass by a factor of 3.6" (UNEP 2011, p. 11). Remarkably, the report noted that overall prices for resources fell by 30 % during this same period. Patterns of resource supply have been dynamic, however, with newer sources of supply being sought, while greater efficiency is pursued. Skeptics of this seemingly endless horn of plenty have argued that ratios of energy returned for energy invested appear to be declining for key economic sectors, including food, petroleum, and mining (Hall and Day 2009). As mentioned earlier, the price of commodities ignores many costs, which end up absorbed by the public and the biological system they depend on. Human-driven global warming and its complex impacts underscore the dangers of continuing business "as is."

Low-income rural communities constitute the most vulnerable populations to climate change, yet they are the ones least responsible for it (Castro et al. 2012).

With global population nearing seven billion and pressures for increased levels of consumption on the rise, the issues of scarcity and limits to growth within the context of current and future resource conflict. Thomas Malthus argued in 1798 that populations will procreate beyond the capacity of their habitat to support them. Their numbers tend to increase geometrically, while their food supply expands only arithmetically, with famine, poverty, and death the inevitable outcome of this imbalance. His ideas proved influential and controversial, coming in and out of favor. Neo-Malthusianism grew in the 1960s with the rise of environmentalism and fears about ongoing demographic growth in a world of finite resources. At a time when insurgencies raged in Third World countries, skepticism emerged about whether governments and markets could meet the challenge of uplifting the poor. The Paddocks (1967) claimed in *Famine 1975!* that today's "hungry nations" would be tomorrow's "starving nations." Garrett Hardin (1974) urged rich nations to adopt "lifeboat ethics," maintaining their security by eliminating immigration, foreign aid, and other actions to help the world's poor, whose overpopulated lands were essentially sinking ships. When Ethiopia's famine shocked the world in the mid-1980s, Hardin (1985) recommended withholding relief, since it would only exacerbate the underlying problem of too many people. The "let them starve" approach did not gain the public's attention.

The United Nations Environmental Program (2011) expects resource scarcity to emerge in coming decades. Michael Klare (2002, p. 213) believes that intensifying global competition for vital commodities will result in greater tension and disputes: "... resource wars will become, in the years ahead, the most distinctive feature of the global security environment." He suggests that this scenario could be avoided through cooperation, especially by setting up "robust international institutions" dealing with vital resources. Similarly, Thayer Scudder (2010) sees declining

living standards ahead, as humanity exceeds biophysical limits to growth. Once again, he warns that conflict and strife are likely unless cooperation and remedial action occur. Such predictions have been wrong before, but what will happen in the future remains to be seen.

Summary

Conflicting interests in resources is a ubiquitous part of social life. How people have responded to such situations has varied through time. Forager and other egalitarian societies often relied on sharing and cooperation. The rise of structural inequalities in agrarian and industrial civilizations fostered more contentious circumstances, generating violence and insecurity regarding resources on a national and global scale. Resource conflicts are a pervasive part of today's globalized world, driven by consumerism and population growth in the context of deep inequalities. Globalization also offers opportunities for empowerment of marginalized populations and the international and equitable management of conflicts. Whether such actions will occur is unclear, especially given current fears about future global competition over vital resources.

Cross-References

- [Access to Land and the Right to Food](#)
- [Corporate Farms](#)
- [Environmental Justice and Food](#)
- [Land Acquisitions for Food and Fuel](#)
- [NAFTA and the Food and Agricultural Industries](#)
- [War and Food](#)

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Responsible Innovation in the Food Sector

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Synonyms

Corporate responsibility; Ethical evaluation; Food industry; Innovation and risk; Stakeholders

Introduction

Corporations carry the responsibility of ensuring their own profitability, the key to their survival. Yet they have widespread impacts on people that share the social space with them, people who are in turn instrumental to their profitability. The food sector, perhaps more than any other, brings into sharp focus the contradictions inherent in this setup. Food is a basic human need, critical for sustenance, health, and well-being. Innovation is at the heart of increasing yields, lowering production costs, and optimizing profit margins. Yet what if they come at the cost of lowered quality or safety of the food thus produced? Such dangers have led to increased awareness and a keener knowledge of food and nutrition issues among consumers, which in turn has put public pressure for greater transparency and accountability from the food sector.

Lawmakers have recognized the need to intervene, including, for instance, enforcing better

labeling of ingredients and nutritional facts on food packaging. Corporations have been legislated or pressured to minimize or eliminate ingredients known to be harmful. However, the listing of components and percentages of various types of nutrition in a specific food product does not bring out information pertaining to practices used in producing, processing, or preserving food products. And some innovations will always be ahead of existing labeling requirements or known health risks. Are food corporations alone responsible to manage innovations whose results end up being ingested by millions of consumers? How could the food innovation process be better shepherded through to final regulatory approval? What if the innovation process were more fully integrated into the matrix of societal values from the outset of the design process? That notion is at the heart of Value Sensitive Design.

This entry aims to identify the stakeholders influencing the food industry and present the role and responsibility of each actor in working toward the common objective of growing and producing food that is both safe and healthy. Innovation in the food sector opens the way for corporations to harness the cutting edge of technology. In this context, Value Sensitive Design is an approach which seeks to better address uncertainty and ethical issues at an earlier stage in the life cycle of innovative food production so as to increase the probability that technological applications have a positive impact on health and safety.

Stakeholders Involved

The food industry consists of companies and corporations that are directly involved in the production, processing, preservation, distribution, presentation, and sale of food. The methods adopted and the courses of action taken determine the nutritional value, quality, and long-term safety of food. Entities that play indirect roles may include research organizations, public agencies, and decision-makers, along with media that reflect societal values surrounding food and eating-related behaviors.

Research organizations include universities and other public agencies or private organizations that partake in innovation through experiment, analysis, and design. They naturally focus their research on the objectives of the parties that fund their efforts. Studies funded by industry tend to be geared toward profitability, taking less account of the wider value matrix through which the resulting innovations eventually ripple. The objectives of such studies may not include the fullest possible evaluation of health and safety. The testing done to identify harmful effects of cutting-edge food technology is often difficult to implement or non-exhaustive, due, for instance, to the presence of unexpected molecules or new biochemical combinations and the practical limitations of experimenting the synergistic or cumulative effect of each new element using methods based on previous food technology.

Public decision-makers and lawmakers are often influenced by the food sector toward approving industry practices even as they rely on the analysis and recommendations made by policy organizations for ensuring the health and welfare of consumers. Government agencies can protect the best interests of the latter by promoting responsible practices in the food industry. However, the current practices by which food products are certified as “acceptable” have often been challenged or found to be based on contradicting evidence. How best then to widen the net of social responsibility for innovative food design?

Based on their ongoing need to ensure profitability in a fiercely competitive market, whole sectors of the food industry understandably incite and encourage individuals and retail or institutional food purveyors (e.g., hotels and restaurants, schools, hospitals) to choose certain higher-profit margin foods over others, in spite of their doubtful nutritional value, at times contributing to overall unhealthy lifestyles (e.g., overly high fat, sugar, or salt contents, vestigial traces of growth hormone).

Consumers find themselves making food decisions based on emotional aspects rather than rational ones, such as the actual nutritional value or safety of given products. While it is difficult to curb misleading information in the

mass media, it is possible to counter them through public awareness campaigns about healthier and safer behaviors (Glanz et al. 1998). As to the media proper, outside the realm of direct advertising, they influence individuals and institutional customers in their relationship to food. It has been reported that television advertisements directly affect children’s eating habits and their food consumption (Arnas 2006). Prior research indicates that the media play a critical role in transmitting information to the public about the most pressing public health problems and framing attributions about who in society is responsible for solving these problems. For instance, it has been shown that the media served an important agenda-setting role in educating the public about the presence of trans fat in the US diet and describing the health risks these foods pose (Jarlenski and Barry 2013).

With a growing desire on the part of various societal actors and stakeholders to ensure better-informed decisions concerning the actual value of food products on offer, they will seek to take on more weight in the decisional matrix of what society perceives and allows as acceptably safe and nutritious food innovation. To keep in step with this evolution and better spread the burden of responsible technological innovation in the food industry, and thus increase predictability of innovation acceptance, food corporations will gradually move toward Value Sensitive Design implementation so as to ensure greater harmony between their mission statement and societal values, in the end better ensuring their long-term survival, which can come to be threatened by short-term profit orientation combined with post hoc strategies to convince various stakeholders of the innocuity of their innovative food designs.

In brief, to help innovation succeed, it is important to ensure an increasingly responsible process of innovation in which stakeholders are collectively accountable to other stakeholders within a process fully embedded in the societal value matrix, including a focus on the health and safety of anything that ends up on the dinner table, and Value Sensitive Design is a means to actually operationalize social values within an ethical design process.

Innovation and Risk in the Food Sector

Food sector innovation is both product innovation *and* process innovation. The trend toward increasing vertical integration of food production, from seed development, farm crop production, food processing, and distribution, continues to evolve. This trend coexists with the concentration of development and production by an ever smaller number of corporate parties, partly due to the increasing scientific complexity of food product development and the associated need to quickly achieve economies of scale (Hellstrom 2003). With increasing advancements in technoscientific capability and market organization, the food sector may generate risks that could be difficult to assess or predict. The risks to society from food production arise along an increasingly science- and technology-dependent value chain but also with corporate practices that resort to emerging technologies with indeterminate health impacts. In such a context, the food sector is facing a number of difficult scientific, technological, socio-sanitary, environmental, and economic challenges. If the latter are not responsibly addressed, they may have systemic repercussions and harm societies' ability to provide healthy and nutritious food for their citizens. The transformations in market structures, modes of production, and distribution are often presented as increasing the rationality of food sector innovation. However, it is not yet clear what type of impact technoscientific capabilities, such as the genetic modification of crops and livestock, may have on individuals' health or on the environment. Popular understanding of these capabilities is often partial or biased. Despite the uncertainty of benefits and risks of these technoscientific advances, concentration in the market does not favor options such as organic or integrated farming systems, but rather promotes riskier technologies in order to remain competitive. Even if institutional customers' and consumers' expectations about food safety have generally increased, the additional costs linked to improved health and safety often constitute barriers to healthier food. Overall, the incentives to promote an eco-healthy food sector are weak.

Risk management becomes increasingly difficult when the desire to innovate outstrips the ability to assess and absorb the risks (Smith 1992). Due to the coevolution of technological innovation and risk in the food sector, many new risks seem inevitable and impossible to predict. Some authors even consider that the interpenetration of complex technologies and daily life makes risk a greater part of reality (Beck et al. 1994; Lash 1994). If this is the case, should it be recommended to go beyond traditional risk assessments founded on observationally grounded science and include broader approaches, taking into account public involvement (through awareness, negotiation, facilitation, regulation, and monitoring), Value Sensitive Design, in brief, the infrastructures through which the agro-food innovations pervade socioeconomic life? While a precautionary approach has been proposed, such an approach does not seem viable because it would generate restrictions on food sector innovation (Hellstrom 2003). A systemic approach, namely, one that can better assess the unanticipated consequences of existing or new technologies, seems to be more appropriate for reducing technological risks while promoting responsible innovation. Such an approach could take into account the chain of risk factors in conjunction with the cycle of innovation in a variety of areas. One thinks of, among others, the insufficient knowledge of key regulatory stakeholders, which can affect a system adversely, or the marginalization of specific groups with knowledge, interest, or indirect bearing on a system, or still minimal support for public officials or corporate managers who have the potential to enforce measures to better balance benefits against risks in the corporate pursuit of profit (McEntire 2001).

Value Sensitive Design in the Food Sector

In order to encourage responsible food sector innovation, a Value Sensitive Design approach goes beyond profitability (and the relevant efficiency and usability requirements) to take into account the wider socioeconomic context,

i.e., the consequences and risks as well as viewpoints about how science is related to technology and society, making it somewhat easier to anticipate some of the consequences of innovation (Korthals 2011). It becomes a proactive form of responsible innovation where peripheral experts, industry representatives, and lay publics are called in to help shed light on the consequences of new proposed technologies, resolve problems of risk assessment and management practices, provide new cognitive frameworks for complexity reduction, and suggest new ways of managerially drawing the boundaries of emerging technological systems (Funtowicz and Ravetz 1993; Hellstrom 2003). However, such an approach calls for a high level of mutual trust and sustainability. It is known that personal choice is pivotal in moving society toward a more sustainable food future, and it could be argued that sustainable food producers are looking to give consumers opportunities to make a positive impact. However, producers and consumers are often unable to connect because of the lack of reach or consideration or exposure for various initiatives.

Just as converging technologies bring forth synergistic innovations which can be highly unexpected and sometimes risky, so could this convergence inspire the very design process from the outset. This willingness to imagine the food sector as a “convergence of technologies,” crossing traditional boundaries between fields or disciplines, is vital to the success of the food sector. “Converging Technologies” is a label used to point at synergies between originally separate fields leading to revolutionary innovations and thereby new impacts (Houdy et al. 2011). In the food sector, the convergence of high-tech disciplines makes it increasingly difficult for specialists in one field to assess the work of others also involved in the process. Multiple ethical and social issues arise that need attention and the traditional way of addressing these issues is becoming problematic as the roles and stakes change due to the developments instigated by technological advances. For instance, it has been suggested that instead of conducting an ethical evaluation after a genetically modified

food has been marketed, it could be incorporated into the design phase. In this way, researchers and producers can recognize their responsibility to address the ethical issues involved in food sector innovation (Timmermans et al. 2011). Value Sensitive Design does justice to this shift of responsibility in addressing ethical issues at an earlier stage in the life cycle of innovative food developments. It supports design processes that take into account rapid technological development, on the one hand, with uncertainty and urgent ethical concerns, on the other.

Value Sensitive Design starts from the premise that technological applications are value laden in the sense that they have a morally relevant impact on individuals and society (Van den Hoven et al. 2008). Acting in accordance with moral values such as freedom, trust, or fairness is facilitated or constrained by technology (Timmermans et al. 2011). Where other design frameworks focus on functional requirements such as usability, efficiency, or speed, Value Sensitive Design primarily and specifically focuses on values and requirements of moral import. For instance, by including the moral values of trust and fairness and implementing them into the design, first, ethical issues can be addressed in the design phase and, second, relationships between the producers and the organizations promoting a sustainable food sector can be enhanced and lead to a much greater awareness of, and access to, food choices for people and communities as a whole. By working together, a more trustworthy relationship is achieved and a wider network of support established toward the goal of a responsible innovation in the food sector.

Among other principles, Value Sensitive Design calls for inclusiveness of and openness to all stakeholders and accountability of researchers and other promoters, due to the social, environmental, and human health impacts that their work may have on present and future generations (Houdy et al. 2011; Timmermans et al. 2011). Stakeholders’ involvement is a key feature of Value Sensitive Design. At present, the traditional actors involved in the food sector are not able to assess and control the technological artifacts. The burden of responsibility shifts to

technological specialists involved in design and implementation. Value Sensitive Design offers a methodological stance that can help to bridge the gap between responsibility and design in the food sector. It is an operationalization of social values within the design process. This methodological stance, not bound by specific applications or issues, provides a general approach to deal with human values in innovative design processes. For instance, in the conceptual investigation stage, one inquires about how the technology could both benefit and negatively impact stakeholders, whether the latter interact directly with a technology or are peripherally connected to the technology. By connecting the values discerned to specific stakeholders, a more specific picture is drawn of the impact of any given innovation.

Social Responsibility in the Food Sector

The food sector relies on the creation and maintenance of consumer trust. Growing consumer awareness is demanding greater transparency and accountability from the food industry, and corporations must demonstrate their willingness to be held accountable for the quality and long-term safety of their products. To keep up with these demands, corporations have engaged with research organizations in new ways of innovation or have deliberately integrated social, environmental, and health concerns in their business operations. A number of studies have argued that such strategic management – through the use of social, environmental, or sustainability drivers – can be a route to responsible innovation, to create new products, services, processes, and new marketplaces (Little 2006; Mahlouji and Anaraki 2009). Other studies have reported that companies that do not take into account the increasing importance of social responsibility may not survive, in much the same way as those who fail to innovate (MacGregor et al. 2007). However, other commentators consider that some aspects of socially responsible innovation could be incompatible with certain types of innovation. For example, Midttun (2006) argued that

in the case of disruptive innovation – innovations that improve a product or service in ways that the market does not expect, typically first by designing for a different set of consumers in the new market and later by lowering prices in the existing market (Christensen and Rayner 2013) – firms have to change rapidly and as a result, they may disappear in a competitive market. In such circumstances, it might be difficult to combine competitiveness and responsibility objectives. Disruptive innovations often rely on new techniques or technologies, for which scientific knowledge is still limited and for which all consequences cannot always be foreseen. For instance, the impact of certain food innovations, which are now used in many consumption products, is still uncertain, and the consequences on health and environment are not precisely known. Responsibility, through the ability to understand and anticipate the consequences of actions, is a major criterion which should be integrated in innovation models, and especially in disruptive models, where anticipating consequences is a major challenge and where the integrity of individuals is at stake (Pavie and Egal 2010).

Most of the time though, it has been shown that the ripple effects of engaging in responsible innovation are unlimited and the benefits multiple, and not only for corporations (Business for Social Responsibility 2010). In fact, the strong demand from the market for quicker product or service development can threaten responsibility in the medium or long run (Pavie and Egal 2010). The more rapidly decisions are made, the more responsibility is needed to balance the risks. Therefore, corporations being aware of market pressure and time constraints, responsibility should remain a strong concern in the innovation process. Moreover, it strengthens accountability, helps improve quality of life, increases opportunities, empowers people, and is an investment in communities. While the concept of social responsibility is often associated with business practices, meaning that companies should contribute to the welfare of society and not be solely concerned with making a profit, it is the people who run businesses. Therefore, responsibility

begins with the people. And in regard to food, since food is fundamental to human life and a vehicle for improving health and welfare, everybody – as stated by the American Dietetic Association – needs to be responsible (Rodriguez 2010), whether they work in production, processing, preserving, or presenting food products. According to another organization, Business for Social Responsibility, since the production, distribution, and sale of food and beverage products affect global sustainability issues, ranging from access to water and workers' rights to hunger, poverty, health, and wellness, companies need to understand these impacts in order to devise effective strategies to promote sustainable farm-to-fork food chains and to meet the demands of customers, investors, NGOs, and government regulators (Business for Social Responsibility 2010).

Summary

There is no clear agreement on how to regulate the application of new technologies in the food sector. The risk assessment and management of these technologies have to take into account a complex array of human needs, economic interests, technoscientific uncertainties, and political responsibilities. One of the key considerations will be how far regulatory authorities are willing to compromise between competing stakeholder interests (Hellstrom 2003). The positions of all the actors involved, from the farmer to the consumer, need to be analyzed, in connection with the scientific and ethical implications of the new technologies, so as to identify how to encourage responsible innovation, despite the uncertainties. The diffusion of a new technology is not only a matter of technical progress but also of public approval and policy. As other authors have pointed out, because of their systemic intersection between technology, society, and market, food sector policies will have to reflect safety goals, state technological limits, and requirements as well as outline ethical issues (Foray et al. 2012; Hellstrom 2003).

Value Sensitive Design widens the sphere of responsibility within any innovative process,

better integrating the unforeseeable impacts of emerging technologies into the social fabric from the outset, anchoring the process to the contextual set of values of the society within which the innovation may spread.

Cross-References

- [Agricultural Ethics](#)
- [Corporate Social Responsibility and Food](#)
- [Eating and Nutrition](#)
- [Ethics in Food and Agricultural Sciences](#)
- [Farmer-Scientist Knowledge Exchange](#)
- [Food Ethics and Policies](#)
- [Food Labeling](#)
- [Food Risks](#)
- [Informed Food Choice](#)
- [Systemic Ethics to Support Wellbeing](#)

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Restaurant Reviewing

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Synonyms

Food columnists; Food journalist; Food writer; Restaurant critic

Introduction

The most famous of the American restaurant reviewers are those who work at the *New York Times*. The national newspaper has largely set the standard for restaurant reviewing and food criticism. One of the most well-known critics is Craig Claiborne who became the food editor of the *Times* in 1957 and began using the star reviewing system (Claiborne 1982). On May 24, 1963, Claiborne first used a three-star scale. He added a fourth star a year later without explanation. The use of stars in a restaurant review was copied by newspapers across the country and is commonly used today (McNamee 2013). Some culinary historians have regarded the role of restaurant reviewer to be similar to theater or book reviewers at newspapers (Davis 2009). Journalism historians consider food critics to be part of the women's pages of newspapers until the mid-1970s (Voss and Speere 2013, pp. 41–50).

There is no specific training for a professional restaurant or food critic. The *Village Voice's* restaurant critic Robert Sietsema said that that being a journalist was the best preparation for the role. He said: "We're reporters who happen to write about food." *Washington Post* restaurant reviewer Tom Sietsema said he received his training from his predecessor food editor Phyllis Richman. He said: "I learned what a good story was. I got to test the bulk of the recipes for the paper. I was making no money but I was eating very well" (Raskin 2012). Richman also said that journalism ethics were central to her approach to criticism: "I hardly ever use the first person in my reviews. Perhaps it's out of some traditional journalistic priggishness on my part. But I think it's appropriate that there be a distance and a sense of objectivity in that distance" (Dornenburg and Page 1998, p. 165).

Growth of Restaurants

By the 1800s, various incarnations of Delmonico's were established in New York City; some consider it America's first great restaurant. Antoine's opened in New Orleans in 1840, which was

a move away from New York having all of the premier restaurants. The Michelin Guide to restaurants began using a star-rating system in 1926. Prohibition which forbids the consumption of alcohol hurt restaurants and led more people to eat at private clubs. Another significant moment in restaurant history occurred when Henri Soule's Le Pavillon opened in New York City in 1941. According to the *New York Times* food editor Jane Nickerson, there were more than 21,000 restaurants in her city by 1949. She wrote: "They serve to the city's residents and guest foods in so many languages as to rob the city of any one set of distinctive dishes." She went on mention Polish, French, Italian, Chinese, and German restaurants (Tracy 1952, p. 143).

The growth of fast-food and chain restaurants occurred in the 1950s and the 1960s. Typically, these eateries are not reviewed as the business model is for food to taste the same at each franchise. A few chain restaurants have been reviewed. The *Grand Fork Herald* reporter Marilyn Hagerty's March 7, 2012, review of the new Olive Garden in town turned into national news. Soon after it was posted online, the review had gone viral – picked up by Gawker and mentioned on numerous blogs (Hagerty 2012). Before long, there had been more than a million page views of the article, and the reviewer ended up as a judge on the television show *Top Chef*.

Food Reviewing History

Likely the first American restaurant reviewer was Duncan Hines – in the years before, he went on to help found the cake mix company that bears his name. A traveling salesman, Hines would take notes about the places where he dined and what he ate while on the road. In 1935, he and his wife first included short reviews of diners and other eateries on the back of their Christmas card. The following year, he published his reviews in the booklet "Adventures in Good Eating" which went on to be published in 46 editions. The reviews were brief and largely focused on the menu. For example, in 1939, he wrote about

Colonel Sanders' Café in Corbin, Kentucky. (This was before Sanders began his Kentucky Fried Chicken franchises.) Hines noted that it was a good place to eat "sizzling steaks, fried chicken, country hams and hot biscuits, 60 cents to \$1." Later, he collected recipes from the places where he dined that led to a three-times-a-week syndicated newspaper column "Adventures in Good Eating at Home" (Reynolds 2012).

For decades, most restaurant reviewing was about local eateries and restaurant criticism ran in the women's pages of newspapers. In later years, there would be stand-alone food sections. One of the most well-known food journalists in the 1940s through the 1960s was Clementine Paddleford who reviewed restaurants and wrote about food for the *New York Herald Tribune* (Alexander and Harris 2008). Often in her own plane, she flew to different cities to write about home cooks and what was served in restaurants. While in Milwaukee, for example, she wrote about the city's famed Mader's restaurant which had been serving German food since 1903. She described the history of the restaurant and included recipes for Sauerbraten, potato dumplings, and cheese torte (1960, pp. 346–347). In a 1964 column, she wrote that she had visited 36 countries searching for the best restaurants but found that the top eateries were in Manhattan. She explained: "The exploring gourmet can eat here in lavish elegance or in quiet simplicity" (Paddleford 1964, p. 148). The newspaper food section normalized the otherwise exotic dishes, the growth of restaurants, and the increasing trend of eating out. The dishes were unique to the demographics of those who lived in the readership area versus national food-related magazines.

In 1964, the *New York Herald Tribune* published a collection of columns from its top writers including Paddleford who noted that "restaurants are my beat." Of the 18,000 eateries in the city, she detailed her 100 favorites. Rather than being negative about a restaurant's failings, she focused on what was best. In the French category, she recommended Café Argenteuil. She wrote: "My favorite appetizer there is Baked Clams done garlic and herbs, with a dash of lemon and Pernod." She wrote that at Le Veau

d'Or, 90 % of the customers spoke French. She gave three stars to Italian Pavilion. Of Michael's Pub, she wrote: "When a pub becomes famous in New York City you can bet your buttons it's quite a place." Rather than being anonymous, she went into the kitchen to speak with the chef. At Karachi Restaurant, she described the chef bending over his curry pots (1964, pp. 147–148).

Jane Nickerson was the first person to review restaurants for the *New York Times*; she was the food editor from 1942 to 1957. The pre-Claiborne food section had been thought of as being largely fluff. Then in a journalism industry publication, former *New York Times* food journalist Molly O'Neill credited Nickerson with being one of the first food journalists to apply ethics and news values to her craft. According to O'Neill, news was central to the story lines in the vast majority the *Times'* food stories during Nickerson's tenure. During one period early in the 1950s, 646 out of 675 food stories possessed a news hook, as catalogued in the *New York Times* index, and the percentage remained the same throughout the 1950s (2003, pp. 38–45).

When Nickerson reviewed restaurants, her dinner partners often included popular chef and cookbook author James Beard and longtime Associated Press food editor Cecily Brownstone. At that point in the 1940s, the reviewers ate for free at the restaurant and the focus was on the best dishes rather than a focus on the negative elements. It was a practice that changed after the Charles Van Doren television scandal in the late 1950s – made famous by the 1994 movie "Quiz Show." He confessed to cheating on the popular quiz program *Twenty-One* in front of the Congress. In the aftermath, many media outlets, including the *New York Times* and the Associated Press, strengthened their ethics policies. In part, this meant that critics could no longer accept free meals at restaurants as it was perceived as potentially slanting the review.

Restaurant Reviewing Culture

American restaurant reviewing has long been based on the critic maintaining a high level of

anonymity. Like the reviewers of the future, Hines said that he tried not to be recognized so that he did not get preferential treatment. For example, he used a photo that was two decades old on his book jacket. He did, however, ask to see the kitchen after his meal. He wrote: "Food is a matter of taste. Good food is fresh, carefully prepared under sanitary conditions" (1955, p. 30). Staying anonymous is a key to ethical reviewing for most critics. The goal is to experience the restaurant the way an average customer would experience it. To demonstrate how different a dining experience can be when a critic is known, consider *New York Times* critic Ruth Reichl who had two different experiences when she ate in disguise and later as herself; she wrote about both meals and how critics tend to get better treatment than an average diner.

Some of the restaurant critics wore disguises while dining. Mimi Sheraton who followed in the footsteps of Claiborne at the *New York Times* wrote the she worked hard to preserve her anonymity for as long as possible. She turned down all invitations to restaurant-related events, wore a wide-brimmed hat for press photos, and never appeared on television without a disguise. Reichl not only ate in disguise, she created different characters, which she outlined in her 2005 memoir, *Garlic and Sapphires* (Reichl 2005). The concept of using disguises may be a gendered one. *New York Times* restaurant reviewer Pete Wells wrote that he does not wear a disguise as the hair pieces for men tend to be of poor quality and would draw attention to the person wearing it. He wrote in 2012: "Anybody can spot those from across the street. The whole point of a disguise is to make you inconspicuous" (Wells 2012).

Richman was able to dine anonymously for the first 5 years she reviewed restaurants in Washington, D.C. She said her gender helped her: "There were hardly any women reviewing restaurants in the 1970s, and restaurants did not recognize women." After the *Washingtonian* Magazine ran her photo, she was recognized more often. She said that she did not think it impacted the meal, other than portions being larger and with more garnish. Quality appeared to remain the same.

She said: "It just astonishes me how much obviously bad food I get when I am recognized in restaurants" (Dornenburg and Page 1998, p. 44).

It is common for restaurants in America to keep a photo of the area newspaper critic in the kitchen in the hopes of spotting him or her. The need for anonymity is an American concept. French critics call ahead to let a restaurant know he or she is coming. In Britain, the photo of the restaurant critics runs next to their columns. The point is to impress the critic with the chef's best performance (Parsons 2010).

The American restaurant reviewers typically make reservations under false names and use various phone numbers. They paid using cash or credit cards in other names. The reviewer typically brings guests so that several dishes can be sampled at the same meal. According to current *Los Angeles Times* food editor Russ Parson: "This ensures that a restaurant has minimum warning that a critic is coming, on the theory that there is little that can be done once he or she is in the door. There is no way for a chef to dream up some super-elaborate dish or acquire higher-quality ingredients at the last minute" (2010). On the other hand, at the *New York Times*, Sheraton was asked what a chef could do on short notice to improve a meal when a reviewer is spotted. Her answer was: "Just about everything" (2004, p. 104).

The internet has begun to chip away at the ability for a reviewer to remain unknown. In December 2010, the *Los Angeles Times* published an article in its food section about the public outing of its food critic. One of the owners of the new Beverly Hills restaurant Red Medicine created a firestorm by confronting *Times* restaurant critic S. Irene Virbila while she was waiting for a table. Her photograph was taken and her party was kicked out of the restaurant. The photograph was then posted on the Internet. A newspaper article about the evening noted: "By the next morning, more than 15 years of working to remain anonymous were ruined" (Reynolds and Lynch 2010).

To be ethical and fair, most critics follow the recommendation that the restaurant be visited three to five times before a review is written.

Claiborne initially dined at a restaurant twice before reviewing it. He later added a third visit. Some newspapers will wait a certain amount of time after a restaurant opens before they review it. At the *Los Angeles Times*, the policy is to wait a 3-month grace period "to get the kinks worked out before reviewing" (Parsons 2010). Other critics feel that if restaurant is open and charging full price for meals, it is fair to be reviewed immediately (Rousseau 2012).

The Association of Food Journalists includes ethical guidelines for restaurant reviewers on its website. The organization recommends: "Reviews should be conducted anonymously whenever possible. Critics should experience the restaurant just as ordinary patrons do." The organization also addressed ethical concerns about new restaurants: "To be fair to new restaurants, reviewers should wait at least 1 month after the restaurant starts serving before visiting. These few weeks give the fledgling enterprise some time to get organized."

Small-Market Restaurant Critics

While New York, Los Angeles, and New Orleans tend to dominate restaurant reviewing, most metropolitan newspapers employ their own restaurant critics. For example, Ruth Gray was the food editor and restaurant critic for the *St. Petersburg Times* in the 1970s (Gray 1975). She got into food writing after earning a degree in home economics from Kansas State University. She regularly reviewed restaurants in her "The Realm of Dining Out" and her "A la Carte" columns. She wore hats and scarves and ducked inside the ladies room to take notes and stay inconspicuous. When one server called her by name and said the meal was on the house, she did not write the review. It was a busy beat. For example, between September 1974 and January 1977, she reviewed 118 local restaurants. She would take her husband and two to four friends to eat at the restaurant. She rated the restaurants based on quality of food, atmosphere, service, and price. Only four restaurants earned excellent in all areas that were evaluated (Witwer 1977).

One particular review led to a pile of letters in response, so many that an ombudsman editor's column was devoted to the review and response. Gray's review had begun with an account of what she believed to be rude treatment by the staff. Gray and her husband arrived on a rainy evening and by the time they entered the restaurant, their clothes were soaked. Gray had removed her wet coat and was treated rudely by the hostess. In Gray's review, she wrote that the embarrassment and indifference had impacted her meal. Readers wrote in to support the restaurant, arguing that the restaurant needed to have standards if it was to uphold its elegant reputation. Gray didn't back down from her assessment. "My assignment is to give a truthful account of my dining experience," Gray responded in an editor's column (Goldman 1978). Reviews that included treatment by a restaurant's staff, in addition to the food served, is typical protocol in the industry.

One of the best-known modern newspaper restaurant critics was Elaine Tait of the *Philadelphia Inquirer* who wrote restaurant reviews for 35 years. Upon retirement, said of the job: "I didn't realize how exhausting and invasive it was until I was out of it." She has a wheat allergy which prevented her from eating too much pasta or cake while reviewing. She recalled that "You have to have a full battery of people to go out with you, and it has to be a convenient location and time for them. People tend to get very blasé about it after a few times" (Ludwig 2011).

Food Magazines

Food magazines have been common for decades and often featured food criticism. *Gourmet* was introduced in 1941. While World War II was looming, the magazine focused on luxury rather than the everyday work of home cooks. Its tagline was: "The magazine of good living." It was largely based on a male audience. As culinary historian Laura Shapiro wrote: "Haute Cuisine was strictly a male preserve in France, and America inherited the prejudice" (2004). Publisher

Conde Nast closed the publication in 2009 after an almost 70-year tenure. The magazine *Food & Wine* was started in 1978 as a more down-to-earth alternative to *Gourmet*. Initially, it was called the *International Review of Food & Wine* which had a prototype published in *Playboy*. The magazine continues today, as does *Bon Appetit* which began in 1956.

A significant difference between the newspaper and magazine was the business models and ethical guidelines. At newspapers, there is a distinct separation between the editorial department which produced the food section and the advertising side of the publication. Advertisers cannot dictate what reporters write about, how something is written, or where an advertisement will appear in a publication. There is a looser relationship at magazines. Advertisers can dictate where their ad appears and what kind of stories it is advertising near in the publication. Further, newspaper journalists are more fact based than their magazine counterparts who may take a more creative approach. Reichl wrote that she learned that when she went from writing for a magazine where she could invent dinner partners to writing for newspapers where she needed to take a different approach (2012, p. 32).

Democracy of Restaurant Reviewing

A new democracy for food and restaurant reviewing was on its way even before the internet. In 1979, Tim and Nina Zagat started distributing their restaurant reviews based on a poll of customers. Rather than the experts from newspapers or magazines, regular consumers judged the eateries based on food, decor, service, cleanliness, and cost. A 30-point scale was used to evaluate the restaurant. Initially they self-published the Zagat Guide and distributed it through individual bookstores. By the 1980s, they were publishing commercially and caught the New York restaurant community's attention. They sold 75,000 copies per month in 1986. They went on to survey restaurants across the country. In 2011, the company was acquired

by Google and reviews are integrated into Google Maps and Google+.

Today, reviewers can check in on social media sites like Yelp, Foodspotting, or Foursquare and describe their meals and service experiences. Research has found that about 45 % of consumers have already decided where to eat with the help of an online dining guide (Pan 2012). Online reviews are significant in deciding what's for dinner – 57 % of patrons rely on them. This does not mean that the system is democratic. There are numerous public relations firms that offer services to eliminate or bury negative reviews and to increase positive reviews. Signe Rousseau examined the interaction between food and individual reviewers in her 2012 book, *Food and Social Media*. She wrote: "The main narrative around social media and food criticism concerns the fact that, as the saying now goes, everyone is – or at least can be – a critic." The legal and ethical implications of this new model are still being debated.

Summary

Restaurant reviewing or food criticism is a written critical analysis of culinary dishes or eateries. Both terms are used to describe a critical, evaluative opinion that often involves some kind of rating system. Women's magazines and the food coverage within have been studied to some extent, but the same generalizations drawn from those works cannot necessarily be applied to newspaper food sections. The two media forms usually operated quite differently in its separation of the editorial and advertising relationship. Further, a newspaper has a local readership unlike a national magazine.

Cross-References

- ▶ [American Cuisine, Existence of](#)
- ▶ [American Food Rhetoric](#)
- ▶ [Culinary Cosmopolitanism](#)
- ▶ [Food and Class](#)
- ▶ [Restaurant Workers](#)

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Restaurant Workers

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Synonyms

Chefs; Cooks; Food service workers; Food workers; Servers; Waiters

Introduction

Restaurant workers include a diverse group of occupations and jobs that contribute to the operations of a restaurant. While tasks and occupational demands vary according to each specific position, there are issues that are shared among all workers. These issues include low pay, long hours, occupational and safety hazards, recognition for their services, and representation in the wider workforce.

Background

Restaurant workers are classified as individuals who work within the wider leisure and hospitality industry at the site of a restaurant. What

constitutes a restaurant is open to interpretation. Broadly speaking, a restaurant is an eating place where meals are served to customers. Depending on the interpretation, there have been different dates named as the establishment of the first restaurants.

However, the founding of what many consider to be the modern ideal of a restaurant is dated to eighteenth-century France. The term restaurant evolved from a dish. In eighteenth-century France, a restaurant was a quasi-medical bouillon, a type of restorative broth. Restaurateurs' rooms were opened, specializing in the preparation of these broths (Spang 2000). They also provided other fare and became popular in post-revolutionary France. What distinguished these eating houses from that prior is that modern restaurants were places to be seen as much as they were places to dine. Moreover, they were located in urban centers and became part of the social landscape.

The first restaurants in America originated in the late eighteenth century. These were originally modeled on those developed in France. They were found in the cities of Boston and Philadelphia and later spread to other metropolitan centers.

These early dining spaces in France laid out the signature elements of modern restaurants. Restaurant cultures thrive in urban centers, although they can also be found in smaller towns and villages. They provide a selection of prepared food for clientele and are social spaces as much as they are commensal spaces. Today, the restaurant can even be considered part of the entertainment industry as it is heavily involved in the selling of desires and moods alongside the selling of its food.

Contemporary restaurants have evolved from their eighteenth-century origins. Today in the United States, restaurants are part of what the Bureau of Labor Statistics calls food services and drinking places. The range of modern restaurants includes full-service restaurants as well as limited-service eating places; cafeterias, grill buffets, and buffets; snack and nonalcoholic beverage bars; special food services; and drinking places serving alcoholic beverages. Although

fast-food restaurants and fine dining restaurants serve dramatically different clientele at different price points, many of the occupational issues, hazards, and ethical quandaries exist across different dining venues.

Restaurants have a significant financial impact on local and national economies. In the United States, it is the largest private sector employer. Across the country there are 980,000 locations of restaurants with 13.1 million employees. The industry is predicted to bring in \$660 billion dollars of sales in 2013. Restaurants are a popular form of small business as they have low start-up costs and relatively few institutional barriers to entry (Fine 1996). In the United States, 93 % of restaurants employ less than 50 individuals.

Depending on the needs and size of establishment, the types of restaurant workers employed will vary. They can include bartenders, chefs and head cooks, station cooks, food and beverage servers, food preparation workers, and waiters and waitresses. Overall, these jobs require little entry-level education. In the United States, the only notable difference is that the entry-level education required for a chef or head cook was nominally higher, at the level of a high school diploma or equivalent. Most require less than the equivalent to a US high school diploma. Pay for these occupations are also largely low, with median pay at approximately \$20,000 US dollars as of 2010. In 2010 median pay for a bartender was \$18,680; a waiter or waitress earned around \$18,330. For a cook that figure would rise to \$20,260. Among restaurant workers, chefs and head cooks earn the most with median pay around \$40,630. Overall restaurant jobs represent 7 of the 11 lowest-paying occupations in the United States.

Barriers to Entry

There are few barriers to entry to restaurant occupations. As a result, the restaurant industry has a diverse workforce, employing significant numbers of women; immigrants, including undocumented immigrants; and ethnic minorities. In the

case of new immigrants and undocumented immigrants or groups like the physically challenged or mentally handicapped, restaurants become one of the few places for employment (Fine 1996).

It is also a widely accessible form of employment. Roughly one-third of Americans gained their first work experience in a restaurant and half of all adults have worked in the restaurant industry at some point in their lives. In particular fast-food restaurants and chain restaurants employ large numbers of new jobseekers because they do not require previous relevant work experience. Because of the accessibility of restaurant work, there is a common misconception that restaurant workers are young people earning extra spending money or saving for higher education (Jayaraman 2013). In actuality workers represent a diverse range of ages and skillsets, and many remain in the industry for decades.

While there are educational institutions that provide training in some of the restaurant trades, such as culinary schools, bartending academies, and wines certification programs, they are not necessary for this industry. Among cooks and chefs, some receive training through formal and informal apprenticeships. This remains a strong tradition in Europe where cooks would be educated on the job, although this practice is less common in other parts of the world. Even in today's culinary industry, this tradition continues to persist. Short-term informal, often unpaid, work experience called a stage may be taken to expose one to different culinary ideas or to network and develop contacts. It has been argued that having a formal education is useful for promotion, particular among cooks seeking future administrative or managerial positions.

While restaurant work has become a trendy occupation among the middle and upper middle classes in the United States (Zukin 1995), workers in this industry still come primarily from lesser socioeconomic and underrepresented backgrounds (Fine 1996). Women represent approximately two-thirds of workers in tipped occupations in 2011 in the United States. Women of color, notably Black and Hispanic women, are disproportionately represented

among these numbers. Although the restaurant industry is one that has a diverse workforce, discrimination on the basis of race, gender, and other factors have created inequalities.

The Restaurants Opportunity Center has found that white applicants were nearly twice to receive job offers and earned nearly 12 % more than workers of color. Male workers also earned nearly 22 % more than female workers (2009). Notably in New York City, discriminatory hiring practices are often used to control the “symbolic economy” of the restaurant (Zukin 1995). High-end restaurants have a preference for hiring young people of European-American heritage with artistic backgrounds for front of house staff under the guise of enhancing the atmosphere of the dining room. Back of house positions are also plagued by inequalities. In the United States, only 19 % of chefs are female. Male executive chefs earn \$18,000 more per year than their female counterparts. And while the restaurant industry in the United States may employ workers from a range of ethnic backgrounds, very few minorities are visible in positions of power or leadership. Few attain the position of head chef outside of ethnic restaurants.

Categories of Restaurant Workers

Restaurant workers are generally divided into three categories: front of house or those whose duties fall primarily within the dining room; back of house staff or those who work in the food preparation and kitchen areas; and management, a category which includes the owners of the establishment. While all types of restaurant workers are involved in the everyday production of food and service to customers, their occupational identities and occupational challenges differ based on their roles in the environment.

Within restaurant operations, their tasks, occupational identity, and responsibilities are designated according to whether they are front of house or back of house workers. Those working in front of house positions deal primarily with customer service, although they also liaise with management and food preparation staff. Those

employed in back of house positions are primarily responsible for food preparation and production, although they will collaborate with management or front of house staff in matters of food and beverage pairings, service efficiency, and other issues that concern restaurant operations as a whole.

Restaurants employ systems of hierarchies to distinguish one restaurant worker from another. Many formal French kitchens are organized through a brigade system, a system of rankings based on military hierarchies invented by Auguste Escoffier in the nineteenth century. Kitchen workers were ranked according to task and status, with a chef serving as a top commander. Even in those kitchens that lack some of these formal distinctions, there is an element of distinction between different tasks and different responsibilities held among chefs. These hierarchies are significant because chefs are often publicly recognized for their labor, with some attaining celebrity status (Rousseau 2012). Meanwhile those who work in lesser ranks, such as dishwashers and pot washers, receive limited recognition for their work. Although these workers perform critical operational tasks, often serving as the “backbone” to operations, they are rendered largely invisible in the eyes of the public.

Servers, sometimes called waiters or waitresses, are another highly visible category of food worker. These front of house workers interact directly with restaurant clientele. Their tasks include serving food and beverages and some cleanup of the dining space. Their roles also include interactions with kitchen staff in the back of house: placing food and beverage orders, communicating customer requests, and some food preparation. While this group of workers is the most “public” because they deal directly with customers, they too are often rendered “invisible” because of their servile roles (Cobble 1992; Paules 1991).

Though excluded from the United States Bureau of Labor Statistics’ classifications, restaurant workers can also include managers, service directors, and other managerial or administrative staff. These individuals, however, are not counted officially as restaurant workers in the

US Bureau of Labor Statistics' classifications. Nor are they thought of to be on the front lines of restaurant work, through either the food preparation end or customer service. These individuals often earn more than their counterparts. Also excluded are those who provide extraneous services. They may be part of the restaurant atmosphere but are not counted as restaurant workers. These positions include the coat check attendant or parking valet. Also left out of this classification are sommeliers or wine stewards and sanitation and cleaning staff, which also are responsible for the upkeep and running of a restaurant.

Status and Professionalization of Restaurant Workers

Public perception of restaurant workers is mixed. Although in the United States and Western Europe there has been a growing awareness of food culture through the popularization of cooking shows, food magazines, and food blogs, this reflects the lifestyles of a very limited few in the restaurant industry. Sociologist Gary Allen Fine's study of restaurants in the Twin Cities area revealed conflicting viewpoints on the public perception of cooks. Fine's restaurant industry informants revealed that some cooks believe that the public does not respect them and that they would face difficulties transitioning to a professional job if they chose to leave the restaurant industry. Others feel that they are recognized as artists (Fine 1996). Cooks and kitchen workers report the emotional satisfaction as one of the positive elements of their work. There is high self-satisfaction and the public acknowledgement of their work, through restaurant reviews, write-ups, blog posts, and word-of-mouth comments. Restaurant work is also highly mobile and employment is relatively flexible, as culinary skills are portable.

Restaurant workers have been parodied in popular media. Many of these portrayals of restaurant workers have been negative. Strong stereotypes in service work exist, such as the trope of the rude or incompetent waiter (Bell and Valentine 1997). Some restaurants have used it to their advantage as a marketing gimmick.

Edsel Ford Fong, a waiter at the former Sam Wo Restaurant in San Francisco, was legendary for his brusque service and was nicknamed the world's rudest waiter. However, most of these stereotypes are used to suggest incompetency rather than an act performed by the worker.

Cooks and chefs, in particular, have seen their share of stereotypes. Sometimes these stereotypes are promoted and aggrandized as part of a glamorous, "rock 'n' roll" lifestyle. Celebrity chefs like American Anthony Bourdain and British Gordon Ramsay have played up these characterizations to the advantage, using it as a scripted form of personality for the media. However, these stereotypes reveal an underlying issue in the public image of cooks. They have been, throughout various historical periods, viewed as problematic or troublesome. To deal with the problematic character of cooks and restaurant workers, there have been attempts to reform the industry through the establishment of standards.

In the Western culinary world, the matter of "professionalization" has been a part of the discourse surrounding restaurant workers, particularly chefs, since the eighteenth century (Trubek 2000). The "professionalization" of cooks has resulted in the formation of chefs' associations and organizations, the establishment of cooking schools, and the adoption of industry standards that range from uniform to hygiene standards. Two of the most widely recognized symbols of a cook – a white chef's hat known as a toque and a white high-collared jacket – were adopted in the nineteenth century. Other elements of professionalization, such as the formation of a brigade system used in classical French kitchens, suggested a reporting hierarchy. It also helped generate status among different workers in a vocational kitchen setting. In other culinary contexts cooks were professionalized as part of political campaigns. In the former Soviet Union and in China, vocational cooking schools were established as a means to control and widely disseminate culinary knowledge. All of these discourses surrounding professionalism have impinged on the suggestion that cooks are morally deficient to some capacity and needed to be vocationally reformed through the interventions of outside institutions.

Labor Conditions

Restaurant work is physically demanding. Issues of long hours, stress, pressure, poor working conditions are among the drawbacks of restaurant work. Working hours are long and workers can suffer from a range of occupational injuries. Kitchen workers are subject to burns, cuts, and other bodily injury incurred during the preparation of food.

Restaurant workers are often expected to work through injury, pain, and illness. Compounding the issue is that many restaurant workers are not given paid time off for illness or medical care, which is problematic in an industry where injury and illness rates are high. This has also caused debate about public health, as restaurant workers come in contact with customers and their food and can easily transmit illnesses. A Restaurant Opportunities Centers United study in 2010 found that 87.7 % percent of restaurant workers in America surveyed were not given paid sick days. Nearly 90 % did not have health insurance through their employer.

Cooks and kitchen workers are prone to injuries like carpal tunnel syndrome, tennis elbow, herniated discs, hip pain, and other conditions due to long hours and the repetitive nature of kitchen tasks. Many governments have legislation and bodies that govern workplace safety. In the United States, the Occupational Safety and Health Administration (OSHA) has standards to minimize workplace injury and a reporting mechanism to cite violators. While there are protective measures in place like rest breaks, nonslip shoes, or nonslip floor mats, restaurant work is still considered to be dangerous due to the physical demands and long hours required. Despite governmentally mandated safety measures, employers may violate the rules. The Restaurant Opportunities Centers United found that 38.1 % of restaurant workers in America surveyed in 2010 were asked to perform tasks which put their own safety at risk.

Restaurant work is not only physically demanding, but it is also an emotionally challenging job. Restaurant workers, especially front of house workers, are expected to “perform” and

entertain restaurant patrons, providing a form of “emotional labor” alongside physical labor. Their job requires emotional management, from changing their surface emotional displays to controlling deep inner feelings to accommodate customer needs and to conform to management demands for hospitality. Servers, in particular, are often required to exhibit a high amount of emotional management. In countries where tipping is part of the social norm, emotional labor can directly impact income as customers often base gratuities on the level of emotional service received.

Unions and Professional Associations

There are organizations that recognize and represent restaurant workers. In various countries, restaurant workers can gain certifications as a mark of distinction or accomplishment. The French government awards a *Meilleur Ouvrier de France* (MOF) for accomplishment in specific trades. A food work is a category recognized, and cooking and running restaurants is a category for which one can achieve an award.

The American Culinary Federation provides certifications for cooks, chefs, and other culinary workers at different levels in the United States. This often is for those seeking advance certification leading to advancement and senior positions in a restaurant. Often these certifications can command higher salaries or serve as a recognizable accomplishment on a job application. But the drawbacks to obtaining these requirements include a minimum number of years of relevant work experience, letters of reference, application fees, testing fees, and fees to pay for tuition, travel, housing, and meal during the testing certification period that come out to estimated \$4,000–6,000, a sizeable cost in a what remains a low-wage industry.

Numerous other organizations exist representing the interests, including CulinaryCorps, the International Association of Culinary Professionals, the James Beard Foundation, the National Confectioners Association, the World Association of Chefs Societies, *Confrérie de la Chaîne des Rôtisseurs*, and *Les Dames d’Escoffier*. Many of

these associations cross professional lines, representing restaurant workers and other culinary professionals. *Confrérie de la Chaîne des Rôtisseurs* is a gastronomic society that boasts both industry members and those who are generally interested in promoting and developing the gastronomic arts. Many of these associations deal more with raising the public profile of cooks and restaurant workers and engage with the role of gastronomic development rather than addressing labor conditions.

Restaurant workers voice their labor and industry concerns primarily through unions. The Hotel Employees and Restaurant Employees Union (HERE) is an American labor union founded in 1891. It later joined with the Union of Needletrades, Industrial, and Textile Employees to form UNITE HERE in 2004. It represents major hospitality industry employers, including large casinos like Harrah's, Caesars Palace, Wynn Resorts, major hotel brands (Hilton, Hyatt, and Starwood), and Walt Disney World Resorts. Individual states and local districts have local chapters of UNITE HERE, such as the Culinary Workers Union located in Nevada with 60,000 members. Restaurant Opportunities Centers United is the largest worker center in the United States dedicated entirely to the concerns of restaurant workers. Around the world, there are also trade unions that represent hospitality workers and restaurant workers. For example, the Swedish Hotel and Restaurant Workers' Union has a membership of 61,000 members. While there are a number of labor organizations representing restaurant workers in the United States and globally, the majority of industry employees are not unionized and do not have collective and formal channels of addressing occupational concerns. Overall less than 1 % of restaurant workers in America have no collective representation.

Fair Pay

Fair pay among restaurant workers is a source of contention. Workers are often expected to work long hours. While many may only be paid for their legal working hours, which in the United

States is an 8-h shift, restaurant workers are often expected to work longer than the legal time period with no overtime pay. Wages overall for the industry are low, as mentioned in a previous section. In America workers' wages have remained stagnant over the last 20 years, in part because the federal minimum wage for tipped workers remains \$2.13 an hour. Workers have been fighting to receive fair pay and the right to receive a "living wage."

A major controversy in the United States surrounds the matter of tipping. Servers and other front of house workers receive the majority of their pay through gratuities or tips. Many front of house restaurant workers are classified as tipped employees by the United States Department of Labor. Tipped employees are workers who customarily and regularly receive more than \$30 per month in tips. The Fair Labor Standards Act (FLSA) allows the employer to withhold a tip credit. In other countries, notably for some in Western Europe, servers are paid set hourly wages. Gratuity for service is often built-in to the bill or added as a standard service charge. Additional gratuity may be left at the whim of the customers, but it is not expected and the amounts are often small change. In some parts of the world, such as Japan, gratuity is not part of restaurant culture and may possibly cause offense. In Australia, tipping in certain establishments, such as a casino, can be constituted as a form of bribery.

In the United States, gratuity is not often built into dining costs and customers are expected to compensate front of house staff through the practice of tipping. This often amounts to 15–20 % additional payment on top of the dining bill. Depending on the individual management policy, tips can be pooled among workers or distributed to individual servers. Tipping is meant to reward quality and efficient service; however, this practice creates much tension between restaurant workers. Kitchen staff normally do not receive any percentage of tips, even if they are pooled among workers. Pooling tips rewards higher amounts to servers and lesser amounts to other front of house workers like bussers. Tensions between tipped and non-tipped workers can

exist between restaurant workers. There can be resentment between these two groups, leading to conflict within the work environment. Many restaurants that participate in tipping do not require tipped workers to share their tips.

Legislation in the United States has regulated pay among workers who receive tips. The Fair Labor Standards Act (FLSA) requires a minimum wage of \$2.13 for tipped workers, compared to \$7.25 for nonexempt workers. Legally tips are considered the sole property of the tipped employee. However, restaurant workers have complained that the FLSA creates an unfair system, as employers can withhold tips. Furthermore, millions of workers have also experienced wage theft when they were not paid the wages and tips they were owed. Fair pay for restaurant workers has long been an issue of contention, which has affected restaurants at all socioeconomic levels.

Summary

In summation, this essay raises some of the issues currently faced by the diverse category of workers in the restaurant industry. While occupational demands vary across job segment in this industry, many of these problems are universal among all restaurant workers. Restaurant workers are receiving more attention for their efforts as issues of industry discrimination, labor conditions, fair pay, collective bargaining, and recognition of their labor are being addressed on a political and social level. Social media has raised attention to their plight, and unions and organizations continue to draw public attention to their causes. In the end, restaurant workers are a critical part of many economies while contributing strongly to the social landscape of a community.

Cross-References

- [Food and Place](#)
- [Occupational Risks in Agriculture](#)

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Right to Food in International Law

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Synonyms

Food security; Food sovereignty; Human right to adequate food; Right to feed oneself

Introduction

The *right to food* is a human right. It protects the right of all human beings to live in dignity, free from hunger, food insecurity, and malnutrition. The right to food is protected under international human rights and humanitarian law. The right to food has been defined as

the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and

qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear. (Ziegler 2008, 17)

With almost 870 million people chronically undernourished in 2010–2012, the number of hungry people in the world remains unacceptably high. The vast majority live in developing countries, where about 15 % of the populations are estimated to be undernourished (FAO 2012). The right to food approach to food insecurity is based on the premise that tackling world hunger requires improving not the availability of food, but access to food for the vulnerable and deprived. Indeed, the lack of access to food is almost never the result of a general scarcity of food. Instead, people are deprived of food because they have no opportunity to produce it, cannot earn a sufficient income to buy the food they need, or are unable to work at all (Künemann and Ratjen 2004, 1). For this reason, the right to food approach calls for a specific focus on categories of people that are vulnerable or marginalized, such as the landless, the unemployed, the elderly, indigenous peoples, women, children, and people with disabilities.

Most accounts of the history of the right to food point to Franklin Delano Roosevelt's famous 1941 "Four Freedoms" speech as a starting point. The speech – which looked forward to a world founded upon four essential human freedoms (freedom of expression, freedom of worship, freedom from want, and freedom from fear) – is notorious because it set out the idea of civil and political rights and economic and social rights as part of an indivisible and global value system (Roosevelt 1941). The holistic notion of human rights was subsequently expressed in the Universal Declaration of Human Rights of 1948, which included the right to social security; to work; to rest and leisure; to an adequate standard of living, including food, clothing, housing, and medical care; and to education.

This entry presents internationally agreed definitions of the human right to adequate food,

conceptual developments in the last decades, and an overview of the challenges facing the full realization of this fundamental human right globally.

Definitions of the Right to Food

The human right to food is recognized in Article 25, paragraph (1), of the Universal Declaration of Human Rights:

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control. (UN General Assembly 1948)

The right to food is also recognized in Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), which came into force in 1976. The Food and Agriculture Organization (FAO) of the United Nations actively participated in the drafting of Article 11, and FAO's Director-General proposed the substance of what became paragraph 2 of that Article, which addresses the negative right to freedom from hunger. Article 11 reads:

1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.
2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programs, which are needed:
 - (a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific

knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

- (b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.” (UN General Assembly 1966)

In addition, the human right to adequate food is recognized in specific international instruments such as the Convention on the Rights of the Child (Art. 24(2)(c) and 27(3)), the Convention on the Elimination of All Forms of Discrimination against Women (Art. 12(2)), or the Convention on the Rights of Persons with Disabilities (Art. 25(f) and 28(1)). The right to food is also recognized in regional instruments – such as the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, known as the Protocol of San Salvador (1988); the African Charter on the Rights and Welfare of the Child (1990); and the Protocol to the African Charter on Human and Peoples’ Rights on the Rights of Women in Africa (2003) – and in numerous national constitutions.

The right to food is to be distinguished from the concepts of “food security” and “food sovereignty.” One of the most commonly used definitions of *food security* is that of FAO, which states that “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO 2008). Food security is the most widely used term in global debates about hunger and malnutrition; it is commonly used by UN agencies, development organizations, and governments across the globe. *Food sovereignty*, in turn, is a concept originally coined in 1996 by La Vía Campesina, a transnational social movement of peasant and indigenous organizations (Vía Campesina 1996). Food sovereignty calls for the rights of local communities and nations to decide their own food policies. A large number

of actors, including governments, have integrated the food sovereignty concept into their terminology and have contributed to its further development. Today, the definition provided in the 2007 Declaration of Nyeleni is considered to be the most representative. Food sovereignty is defined as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Nyeleni Food Sovereignty Forum 2007). Contrary to food security, food sovereignty is generally described as a rights-based concept, for it includes the right to food and the right to produce food, as well as a number of other associated rights (to land, resources, live in dignity, etc.) (Claeys 2012).

Normative Elaboration of the Right to Food

Following its international recognition, the right to food underwent a period of intense conceptual elaboration in the period ranging from the coming into force of the International Covenant on Economic, Social and Cultural Rights, in 1976, to the adoption by the FAO Council of “Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security” in 2004.

A large number of such developments took place within the United Nations. In 1979, the UN Economic and Social Council (ECOSOC) began monitoring the right to food. In 1983, the UN Subcommission on the Promotion and Protection of Human Rights named Asbjørn Eide Special Rapporteur on the Right to Food. The same year, the ECOSOC commissioned a report on food as a human right, which began the process of adding clarifications and new implementing instruments. In 1985, the ECOSOC established the Committee on Economic, Social and Cultural Rights (CESCR) to receive country reports and monitor progress on implementing the International Covenant on Economic, Social and Cultural Rights (ICESCR). The Committee is composed of

independent experts, serving in their personal capacity, elected by the states parties.

In the early 1980s, a number of committed civil society groups started working on specific economic, social, and cultural rights. In the NGO field, the foundation of FoodFirst Information and Action Network (FIAN) in 1982 was followed by the establishment of the Habitat International Coalition (HIC) in 1987, the Centre on Housing Rights and Evictions (COHRE) in 1992, and the Center for Economic and Social Rights (CESR) in 1993. FIAN International, which developed as an international network with its secretariat in Heidelberg, Germany, focused exclusively on the defense and promotion of the right to food. FIAN members substantively contributed to the conceptual debates on the right to food that took place at the UN and in academic circles. Yet, the organization rapidly developed its own interpretation of the right to food: from the outset, FIAN insisted that the right to food be understood and implemented as the *right to feed oneself* (Künneemann 1984, 95). FIAN activists put a lot of emphasis on the situation of the rural poor (and small-scale farmers in particular) who constitute the bulk of the hungry and malnourished and on the importance of securing access to the means of producing food, such as land, water, and other natural resources.

In 1996, the World Food Summit convened in Rome reaffirmed “the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger” (World Food Summit 1996). Responding to pressure from civil society organizations (CSOs), governments requested that the right to food be given a more concrete and operational content (World Food Summit 1996, objective 7.4). Two documents were released in the following years to provide a better understanding of the right to food: the General Comment No. 12 of the UN Committee on Economic, Social and Cultural Rights and the FAO Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security.

General Comment No. 12 on the right to food was adopted in 1999 by the Committee on Economic, Social and Cultural Rights (CESCR). General comments aim to elucidate the Committee’s own understandings of the rights and obligations anchored in the Covenant (Riedel 2009, 143). General Comment No. 12 helped define the core content of the right to food and how states could implement the right to food domestically. The core content of the right to food is described by three A’s – *accessibility*, *availability*, and *adequacy*. While adequacy refers to the quality and nutritional and cultural value of food consumed, accessibility and availability address the means of acquiring food. *Accessibility* requires economic and physical access to food to be guaranteed. Economic accessibility means that food must be affordable. Individuals should be able to afford food for an adequate diet without compromising on any other basic needs, such as school fees, medicines, or rent. Physical accessibility means that food should be accessible to all, including to the physically vulnerable, such as children, the sick, persons with disabilities, or the elderly, for whom it may be difficult to go out to get food. *Availability* requires, on the one hand, that food should be available from natural resources either through the production of food, by cultivating land or animal husbandry, or through other means of obtaining food, such as fishing, hunting, or gathering. On the other hand, it means that food should be available for sale in markets and shops. *Adequacy* means that the food must satisfy dietary needs, taking into account the individual’s age, living conditions, health, occupation, sex, etc. For example, if children’s food does not contain the nutrients necessary for their physical and mental development, it is not adequate. Food should also be safe for human consumption and free from adverse substances, such as contaminants from industrial or agricultural processes, including residues from pesticides, hormones, or veterinary drugs. Adequate food should also be culturally acceptable.

General Comment No. 12 also contributed to a better understanding of the obligations of states to *respect*, *protect*, and *fulfill* the right to food

(following the typology developed by Asbjørn Eide) and of the responsibilities of third parties with respect to the right to food. The obligation to *respect* peoples' existing access to food (be it through agriculture, fishing, husbandry, or purchase) requires states not to interfere with the means by which people acquire food. This obligation requires that states look at the impact of legislation, regulation, and government action on how people procure food. The obligation to *protect* the right to food requires states to adopt measures to ensure that enterprises or individuals do not deprive individuals of their access to adequate food. This obligation provides that states regulate non-state actors and create entities to monitor and investigate third parties and that institutions are in place to ensure that those whose rights have been violated are able to seek remedies. The obligation to *fulfill* the right to food has two elements: provide and facilitate. The obligation to *fulfill* (provide) requires that states meet the right to food directly when individuals or groups are unable to meet their food needs by their own means, for example, through food stamps, social security schemes, or food aid delivery. The obligation to *fulfill* (facilitate) requires states to be proactive in creating activities aiming at reinforcing people's access to and utilization of resources and means to ensure their livelihood in the future, for example, through reinvestment in small-scale farming or employment creation.

The right to food, as described in the General Comment 12, is to be achieved progressively. The concept of *progressive realization* seeks to take into account the potentially costly implications of some state obligations, especially of the obligation to protect and the obligation to fulfill, in particular for Southern countries. Yet, states are required to take steps to achieve the full realization of the right to food *to the maximum of available resources* and to seek international assistance in case they lack the resources they need. They must also immediately prohibit discrimination in access to food and to the related resources (on the basis of race, color, sex, language, age, religion, political or other opinion, national or social origin, property, birth,

disability, or other status) and adopt measures to eradicate discrimination on these grounds.

In addition to the *substantial* requirements described above, the right to food places a number of *procedural* requirements on states. States are required to ensure that people can adequately participate in government decision-making, from policy formulation to lawmaking down to administrative acts. For example, when negotiating trade and investment agreements, states should conduct *human rights impact assessments* to ensure that the agreements they conclude are consistent with their obligations under international human rights instruments (De Schutter 2011). The procedural principles at the heart of the right to food – participation, accountability, nondiscrimination, transparency, human dignity, empowerment, and rule of law – have been summarized by the FAO with the acronym PANTHER (FAO Right to Food Team 2013).

The Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security were adopted in 2004 by the 187 Member States of the General Council of the FAO. The Guidelines were celebrated for bringing an economic and social right “from formal recognition at the international level to full engagement by governments and international organizations” and from principle into “proposals for concrete action” (Rae et al. 2007, 457). The history of the FAO Voluntary Guidelines is considered a success story by many observers for the importance of civil society's contribution to the process and content and for managing to gather the necessary impetus to make it happen. Contrary to the elaboration of General Comment 12, the content of the Guidelines was discussed in an intergovernmental process rather than by experts alone. The negotiation process paved the way for the increased involvement of CSOs in the policy elaboration work of the FAO and is said to have had a lasting influence on the way FAO interacts with civil society (Rae et al. 2007, 457). It has also facilitated the inclusion of CSOs as active stakeholders in the reformed Committee on World Food Security (McKeon 2011).

Monitoring and Implementing the Right to Food

Following the adoption of the Voluntary Guidelines, significant progress has been made in the implementation of the human right to adequate food at the country level. Advances are patent in five areas: the integration of the right to food in constitutions, the adoption of legal and constitutional frameworks, the development of national strategies based on the right to food, the use of the right to food in courts, and the design of institutions charged with ensuring progress toward the realization of the right to food (De Schutter 2010, 2012a, b). In addition, country assessments conducted either by the UN Special Rapporteur on the right to food (called official missions) or by nongovernmental organizations have done a lot to demonstrate that the right to food requires attention to be paid to multiple policy areas in order to be fulfilled. The right to food approach to hunger and food insecurity is increasingly associated with interministerial and cross-sectoral coordination as well as with the setting of clear targets and adequate budget allocations.

At the international level, a Right to Food Unit (now Right to Food Team) was set up within FAO with the aim to support the implementation of the right to food. The Unit develops methods and instruments to assist stakeholders in the implementation of the right to food and information and training materials on the right to food. It is also supposed to work toward integrating the right to food into FAO's work. The UN Special Rapporteur on the right to food, a new institution established in 2000, also contributes significantly to the implementation of the right to food at the global level. Appointed by the Commission on Human Rights, the Special Rapporteur belongs to the UN Special Procedures system. The mandate of the Special Rapporteur is to establish cooperation with governments; intergovernmental organizations, in particular the FAO; and nongovernmental organizations and to make appropriate recommendations on the realization of the right to food as well as to identify emerging issues related to the right to food worldwide.

In parallel, developments have taken place in the area of monitoring efforts undertaken by states to meet their human rights obligations. The Committee on Economic, Social and Cultural Rights (CESCR) developed indicators to address the problems of how to measure effectively the degree of rights realization. Three kinds of indicators were elaborated with the support of academics and specialized NGOs: *structural indicators* (measure whether or not appropriate legal, regulatory, and institutional structures are in place), *process indicators* (assess whether laws, policies, and programs are in place to implement specific rights), and *outcome indicators* (evaluate the results achieved) (FAO Right to Food Unit 2008, Vol. II, 18).

Progress has also been made, in recent years, in better understanding the extraterritorial implications of the right to food. Indeed, the advent of economic globalization has meant that states and other global actors exert considerable influence on the realization of economic, social, and cultural rights across the world. In 2011, in an attempt to address this situation, a group of experts in international law adopted the "Maastricht Principles on Extraterritorial Obligations of States in the area of Economic, Social and Cultural Rights." The *extraterritorial obligations* of states broadly fall under two categories: the obligations relating to the acts and omissions of a state, within or beyond its territory, that have effects on the enjoyment of human rights outside of that state's territory and the obligations of a global character that are set out in the Charter of the United Nations and human rights instruments to take action, separately and jointly through international cooperation, to realize human rights universally (ETO Consortium 2011, paragr. 8).

Finally, in December 2008, an "Optional Protocol to the International Covenant on Economic, Social and Cultural Rights" (OP-ICESCR) was adopted, following intense advocacy by a network of international civil society organizations, including, among others, the Amnesty International, the Centre on Housing Rights and Evictions (COHRE), the FoodFirst Information

and Action Network (FIAN), the International Commission of Jurists (ICJ), the International Federation for Human Rights (FIDH), and the International Network for Economic, Social and Cultural Rights (ESCR-Net). The OP-ICESCR allows victims of violations of ESCR to present complaints before a United Nations body against a state that violates the obligations established in the Covenant, if the state has ratified the Optional Protocol. Following ratification by 10 states, the Optional Protocol will come into force on May 5, 2013.

Despite the development of new legal frameworks, institutions, and mechanisms to monitor the implementation of the right to food, at both the national and international levels, violations of the right to food remain a daily reality. Despite decades of the growing global wealth, poverty and food insecurity remain pervasive, and socioeconomic and gender inequalities endure across the world. Individuals and communities face the continuing deprivation and denial of access to essential lands, resources, goods, and services by state and non-state actors alike. The full realization of the right to food will require structural changes both at the national and international levels. At the national level, the elaboration of participatory *right to food strategies*, ensuring policy coherence across sectors, could go a long way toward addressing the specific needs of the most vulnerable segments of the population, either in urban settings or in the countryside. At the international level, an alternative global governance framework for food and agriculture will need to be developed as an alternative to the still prevailing Washington consensus (De Schutter 2009) to ensure that international trade, finance, and investment rules, as well as global development and cooperation policies, effectively contribute to the realization of human rights for all. The recent reform of the Committee on World Food Security (CFS) could be promising in that regard, in that the reformed CFS provides a new space for the meaningful participation of non-state actors in intergovernmental decision-making processes and new ways of setting international norms.

Summary

The right to food is an internationally recognized human right. The normative elaboration of the right to food was achieved, in the last decades, mostly through interactions between academics and human rights experts at the UN level. The normative content of the right to food is now well defined, and so are the obligations that fall on states when it comes to its realization. The right to food now faces challenges of enforcement and implementation.

Cross-References

- [Access to Land and the Right to Food](#)
- [Extraterritorial Obligations of States and the Right to Food](#)
- [Food Security](#)
- [Food Security and International Trade](#)

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Rousseau and Food

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Synonyms

Taste and distaste and food; Vegetarian diet; You are what you eat

Introduction

Throughout his work, Jean Jacques Rousseau is concerned with food and diet. His writings suggest that a wholesome diet leads to a wholesome character and that good taste is a matter of purity and simplicity in both diet and actions. A vegetarian himself, he often advocates a vegetarian diet, especially for children.

Civilization Is the Result of Moving from Meat Eating to Grain Eating

In both *A Discourse on Inequality* (Rousseau 1984) and *On the Origin of Languages* (Rousseau 1966), Rousseau describes “civilized man” as the result of the evolution from savage hunter, through barbaric herdsman, to civilized farmer. The different social organizations described by Rousseau correspond to “man’s”

livelihood and, more specifically, to his relation to what he eats: “The savage human is a hunter, the barbarian is a herdsman, and civil man is a tiller of the soil” (Rousseau 1966, p. 38). Rousseau describes the savage men as “terrible meat eaters” who hunt and kill animals (Rousseau 1966, p. 35); while barbaric herdsman are a step forward because they cultivate and domesticate animals for food, civilized men have learned to use animals both directly and indirectly for food through harvesting crops using animals to till the soil. The movement from spontaneity to convention, from savage to civilized, is a movement away from chance and toward necessity.

The Birth of Love and Nations Is Related to Food

Even Rousseau’s most romantic description of the birth of love, and thereby of nations, is related to consumption: the girls come to the watering hole to fetch water and the boys to water their herds. “Feet skipped with joy, earnest gestures no longer sufficed, being accompanied by an impassioned voice; pleasure and desire mingled and were felt together. There at last was the true cradle of nations: from the pure crystal of the fountains flow the first fires of love” (Rousseau 1966, p. 45). Language is not only from, but also for, passion; “stirring the heart and inflaming the passions takes words” (Rousseau 1966, p. 8). Language, then, becomes part of a mating ritual that gives birth to love. But, the fire of love is not far from the fire necessary to cook the cattle that the boys are herding; and the stirring of hearts is born from the stirring of pots into which the girls have poured their bounty. The beginnings of love and therefore of nations were the result of the combination of water and cattle, eventually boiling together in the cauldron of domestic bliss.

On Rousseau’s account, human society is organized according to providence in accordance with its provisions. In other words, “we are what we eat.” Savages eat wild animals and they are wild. Herdsmen eat domestic animals, so even if they are still barbaric and their manners crude, they have been domesticated. Civilized men eat cultivated grain and through their cultivation of the soil, *they* become cultivated: “Concerning

agriculture, which is slower to come into being: it is connected to all the arts; it leads to property, government, and laws, and gradually to the misery and crime that are inseparable for our species from the knowledge of good and evil” (Rousseau 1966, p. 37).

Not only are the human and humanity constituted in relation to what they eat, but also men constitute themselves as humans by using animals directly and indirectly for food, by eating animals. At one point, Rousseau suggests that humans are separated from animals through their ability to make and use fire, but it turns out that fire is motivated by the need to cook meat. Again, the ability to cook other animals and eat them becomes a sign of our distinctiveness and intelligence. In a footnote, Rousseau remarks “. . . no one would say that any beast, wild or domestic, has acquired the skill to make a fire in the same way that we do. Thus these rational beings who are said to have formed a short-lived society before human, still did not reach a level of intelligence at which they were able to strike a few sparks from a flint to make a fire, or even to preserve whatever random fires they might come across” (Rousseau 1966, p. 41). Here, the ability to make fire is seen as a sign of intelligence and of man’s capacity for reason. Yet, in the paragraph to which this footnote is appended, Rousseau claims that the stomach and intestines of human are not made to digest raw meat and that “with the possible single exception of the Eskimos. . . even savages cook their meat” (Rousseau 1966, p. 41). So, fire is not a sign of intelligence as much as a natural necessity given the constitution of man’s gut. Rousseau goes on to say that people gather around fire because the flames are useful and pleasing “and on this simple hearth burns the sacred fire that provokes in the depths of the heart the first feeling of humanity” (Rousseau 1966, p. 41). Humanity, then, is born out of man’s *need* to cook and eat animals (even while for Rousseau civilization is born out of human overcoming the need to eat animals). In this passage, man’s intellectual superiority over animals appears as a consequence of man’s *need* to cook his meat. Again, the providence of nature gives human a necessary advantage over animals

when it comes to fire; and the proof of this advantage is that men can kill, cook, and eat animals.

Man Is an Omnivore, Which Makes Him Superior to Other Animals

Man also has the advantage that, unlike animals, he is not a picky eater. Because men will eat anything, they are more adept at survival than other animals. Again, Rousseau links man's distinctiveness to his digestive track and eating habits, which, it turns out, he appropriates from other animals: "Man dispersed among the beasts, would observe and imitate their activities and so assimilate their instincts, with this added advantage that while every other species has only its own instinct, human, having perhaps none which is peculiar to himself, appropriates every instinct, and by nourishing himself equally well on most of the various foods the other animals divide among themselves, he finds his sustenance more easily than do any of the others" (Rousseau 1984, pp. 81–82). Men *learn what and how* to eat from animals; through this animal pedagogy, they are able to imitate animals and assimilate animal instincts. And, while each animal eats only what is natural to it, by imitating all of them, men eat everything.

In fact, Rousseau's argument for man's freedom against animal instinct hinges on his observation that men will eat everything while animals have more restrictive diets. It is noteworthy that it is not animal in general or animality that teaches men what is edible; rather, the assortment of animals in their midst teaches them about different food stuffs that may be eaten. It is only by learning lessons from various animals that men develop the multifarious diet that gives them the edge, through which men become human. Men eat/assimilate animals both literally as food and figuratively insofar as men ape animals' eating habits.

In his discourse on inequality, this argument takes many forms involving diet and food, including the fact that unlike other animals, human does not serve as food for another (Rousseau 1984, p. 83); he is distinctive in that he eats but is not eaten by other animals. Rousseau also cites differences in human and animal

infancies and maternal feeding practices as reasons for human sociality – human mothers are able to carry their young to feed them at all times while other animals cannot (Rousseau 1984, p. 84). Ultimately, though, human is distinguished from animals through his "free will," which is based on the freedom to eat anything while "a pigeon would die of hunger beside a dish filled with choice meats and a cat beside a pile of fruits or grain, even though either could very well nourish itself with the foods it disdains, if only it were informed by nature to try them" (Rousseau 1984, p. 87). Man's resistance to "the call of nature" is the result of his ability to appropriate instincts from a variety of other animals that allows him to eat indiscriminately among their foodstuffs. So, it is man's assimilation of animal instinct that enables him to transcend instinct, which amounts to the freedom to eat as he will, which he learns from animals (Rousseau 1984, p. 87).

The Virtues of Vegetarianism

Given Rousseau's stance on eating meat, the sign of more civilized men should not be that they can eat anything but rather that they can choose what they eat. In *Émile*, Rousseau repeatedly condemns meat eating, especially in children and nursing mothers. He claims that children fed a vegetarian diet are less likely to get worms and colic because farinaceous foods produce more blood than meat and they are less likely to rot (Rousseau 2003, p. 28). He extols the virtues of milk, which (along with cheese, judging by his recollections in *Confessions*) is one of his favorite foods; he proposes that "Milk, although manufactured in the body of an animal, is a vegetable substance; this is shown by analysis; it readily turns acid, and far from showing traces of any volatile alkali like animal matter, it gives a neutral salt like plants" (Rousseau 2003, p. 29). And as further proof of the benefits of a vegetarian diet, he says that the milk of herbivores is sweeter than that of carnivores. He argues that a diet of vegetables is not only healthier than a diet of meat but also more natural. As "proof" that eating meat is not natural, he claims that children do not like to eat meat

(Rousseau 2003, p. 140). And, as he does so often, he points to the behavior of other animals to demonstrate what is natural to human animals: “Women eat bread, vegetables, and dairy produce; female dogs and cats do the same; the she-wolves eat grass. This supplies vegetable juices to their milk. There are still those species which are unable to eat anything but flesh, if such there are, which I very much doubt” (Rousseau 2003, p. 29). That all animals eat vegetables is proof that it is natural to do so. As we have seen, although meat eating is natural to savage human, the more civilized man becomes, the greater the distance from his “prey.” Or, conversely, the more human distances himself from the animals that he eats, the more civilized he becomes.

Recall that the third stage of man’s development, as Rousseau describes it, is plowman who cultivates grain instead of cattle. At this point, there are two possible directions for human: he can continue to eat meat but now distance himself from the killing of his animal food in order to disavow his killing, or he can choose not to eat meat. Grain becomes either a means to feed animals for man’s consumption or a means by which human makes the transition from carnivore to herbivore. Rousseau begins by arguing that a vegetarian diet is healthier, then he claims that it is more natural, and finally, he makes a connection between taste and morality: vegetarianism is a moral choice that is evidence of man’s freedom not to eat meat. Unlike other carnivores, human can choose to become an herbivore. Unlike animals, in humans, eating gives rise to moral inclinations. For Rousseau, this is another reason why the child’s diet is important. Given his statements on taste, in a paradoxical sort of way, animals should have a better moral sensibility than humans.

The Beginnings of Private Property Is also Related to Food

Rousseau maintains that “the first cake to be eaten was the communion of the human race” (Rousseau 1966, p. 35). It is cake that brings men together; cake is the basis of human society. No other animal can make a cake, which for

Rousseau is the result of the cultivation of fields, the beginning of all art and artistry (never mind that Rousseau does not talk about the making, but the eating, of cake, ignoring the fact that other animals can eat cake and ignoring the fact that even cavemen painted pictures). Sowing for harvest requires ownership of land, tools, foresight, and community, all of which are lacking in hunters or shepherds (Rousseau 1966, pp. 33–34). Although animals are used for farming and many of the early tools for tilling the soil required oxen and horses, Rousseau imagines the civilized man as a grain eater who begins to separate himself from the animals that he consumes, which are raised and slaughtered elsewhere and for which he trades his harvest. In this regard, distance between human and his animal-eating is a sign of civilization. He no longer hunts wild animals or slaughters his domestic animals; now, he uses animals to produce crops that he can exchange for animals once they have become meat and other commodities. This is the beginning of property, which Rousseau identifies with the beginning of dependence, bondage, servitude, and the inequality of men (e.g., Rousseau 1984, pp. 105–106). We could say that for Rousseau as human disavows his dependence upon animals and his diet of animals by shielding himself from their production for food, by turning them into commodities – meat instead of animals – he becomes more civilized (and more corrupt). Human society, then, is based on the double sacrifice of animals: first the killing of animals for food and then the concealing of that killing so that human can continue to eat animals without guilt. Rousseau’s text seems to argue that vegetarianism might be a sign of higher development.

Rousseau’s writings suggest that choosing to eat cake instead of eating animals is a sign of the higher evolution of natural human. Rousseau also identifies the inequality of men in society with differences between foods that did not exist with natural or primitive human: “Now if we compare the prodigious diversity of upbringings and of ways of life which prevail among the different classes in the civil state with the simplicity and uniformity of animal and savage life,

where everyone eats the same foods, lives in the same style and does exactly the same things, it will be understood how much less the difference between human and man must be in the state of nature than it is in society..." (my emphasis, Rousseau 1984, p. 105). Eating the same foods is the first characteristic of the equality among animals, including savage men. Like the differences between animals and human, differences between men are evidenced in the differences between what they eat. Again, freedom is described as the freedom to eat what one will, to eat freely from a variety of foods, while servitude (whether it is to instincts in the case of animals or to other men in the case of humans) is evidenced in not having a choice about what one eats.

Rousseau compares the accumulation of slaves as property to the collection of cattle. And, he says that the rich are like "ravenous wolves, which, having once tasted human flesh, refuse all other nourishment and desire thenceforth only to devour men" (Rousseau 1984, p. 120). It should not be surprising, then, that for Rousseau, man's relation with animals sets the stage for his relation with humans – we mistreat each other because we mistreat animals. For example, collecting and owning cattle prepare human to collect and own human slaves (Rousseau 1984, p. 131). And, from hunting and killing animals, human learns war and conquest; "war and its conquests is just a kind of manhunt" (Rousseau 1966, p. 36). Herding cattle teaches men to herd men; hunting wild animals teaches men to hunt men. Man's cruelty to other men echoes his cruelty to animals. The rich can be "like wolves" and "devour" men only because men first prey on wolves. Again, Rousseau claims that man's character is formed in relation to what and how he eats: flesh eaters are cruel while flower eaters are gentle (Rousseau 2003, pp. 140–141). He asserts that "all savages are cruel, and it is not their customs that tend in this direction; their cruelty is the result of their food. They go to war as to the chase, and treat men as they would treat bears. . . Great criminals prepare themselves for murder by drinking blood" (Rousseau 2003, pp. 140–141).

Moral Tastes Develop from Tastes in Food

Arguing for a vegetarian diet, in *Émile*, Rousseau maintains that it is not only for health's sake that children should avoid eating meat but also for their characters (Rousseau 2003, p. 140). He argues that eating flesh begins and ends in cruelty. Quoting Plutarch, he gives a forceful account of the barbarity of killing and eating animals (Rousseau 2003, p. 141). Barbarity toward animals begets barbarity toward fellow humans. Rousseau's analysis suggests that hunting and killing animals are training grounds for hunting and killing men; war is a natural outgrowth or at least a side effect of slaying animals. Flesh eaters make war and war-makers are hunters.

For Rousseau, when it comes to ethics or morality, the process of assimilation is not just metaphorical but also literal. In *Émile*, he describes in detail the proper diet to nourish both body and mind. There, he recommends a vegetarian diet, especially for children, who he says are healthier when they do not eat meat (Rousseau 2003, p. 28). As we have seen, he extols the virtues of milk, particularly the milk of herbivores, which he says is sweeter than that of carnivores (Rousseau 2003, p. 29). Even the curds in milk are healthy because they nourish by becoming solid and therefore do not merely pass away as liquid (Rousseau 2003, p. 29). Rousseau prefers simple, easily palatable, pure foods, such as milk and cheese. But food is much more than nourishment for the body. In *Émile*, food is also a pedagogical tool used to "lead children through the mouth" (male children are more susceptible to these techniques than female children, who are "more eager for adornment than for food") (Rousseau 2003, p. 139, cf. 396). Cakes are used to teach children the value of industriousness and exercise (Rousseau 2003, p. 127). And ice cream becomes a tutorial in coldness (Rousseau 2003, p. 199); and finding lunch is the goal of astronomy lessons (Rousseau 2003, p. 173).

Indeed, for Rousseau, what and how one eats are signs of the strength of one's mind. He says "gluttony is the vice of feeble minds. The gourmand has his brains in his palate, he can do nothing but eat; he is so stupid and incapable

that the table is the only place for him, and dishes are the only things he knows anything about” (Rousseau 2003, p. 139). As he describes it, we should attend to good eating habits not only for the sake of our bodies but also for the sake of our minds. This is because of all of our senses, taste (*goût*) affects us most in that “it concerns us more nearly to judge aright of what will actually become part of ourselves, than of that which will merely form part of our environment” (Rousseau 2003, p. 138). Although he maintains that matters of taste (*goût*) – both physical tastes and aesthetic tastes – are physical and material, nevertheless, they both affect the mind and character (e.g., meat eaters are cruel) and can be symptoms of a weak mind and character (e.g., gourmands are stupid). It is interesting to note that Rousseau uses the same word “*goût*” for taste in both the physical and the moral sense. We need to concern ourselves with good taste but not necessarily with what tastes good. We can (and should) train our tastes to appreciate purity and wholesome “goods.” Moreover, he suggests that simple tastes are closer to nature and therefore not just good to eat but morally good. The sensation of taste gives way to, and becomes a sign of, moral taste.

Although Rousseau says that the laws of moral taste and physical taste differ, he repeatedly associates pure and wholesome food with pure and wholesome morals (cf. Rousseau 2003, pp. 365, 139, 368). Both moral taste and physical taste are good when they are close to nature, while both become corrupt the further they move away from nature. In this romantic view, nature is innocent, pure, wholesome, and good; and it is corrupted only by man’s attempts to change it. Rousseau’s writing suggests that if we assimilate what is pure, wholesome, and good, then we become pure, wholesome, and good: we are what we eat because the sense of taste affects us more than other senses insofar as food becomes part of ourselves.

A healthy and pure lifestyle satisfies itself with a healthy and pure diet: “There are no such cooks in the world as mirth, rural pursuits, and merry games; and the finest made dishes are quite ridiculous in the eyes of people who have been on foot

since early dawn” (2003, p. 379). In Rousseau’s romantic vision, exercise and picnics outdoors beneath a tree or alongside a river are the greatest pleasures because they are the purest, which is to say the closest to nature: “our meals will be served without regard to order or elegance; we shall make our dining-room anywhere, in the garden, on a boat, beneath a tree ...” (Rousseau 2003, p. 379). For Rousseau, taking pleasure in such simplicity is evidence of a pure heart.

When Rousseau turns his attention from physical tastes or food to aesthetic tastes, he once again insists that *Émile* develops simple tastes “in order to keep his taste pure and wholesome” (Rousseau 2003 p. 368). Even as he maintains that bodily tastes and moral tastes are two separate realms, he continues to develop the analogy between them: aesthetic tastes are moral only if they are natural, pure, and wholesome, while food that is natural, pure, and wholesome nourishes a good body and a good mind or soul. In the end, one of the central lessons of *Émile* is that the natural human should develop a taste for pure, simple, and wholesome nourishment for *both* body and soul. In order to be pure, however, *Émile*’s simple pleasures must be shared with others. Many of Rousseau’s lessons are designed to teach the value of generosity: “If you have pleasure without pain let there be no monopoly; the more you leave it free to everybody, the *purser* will be your own enjoyment ... real pleasures are those which we share with the crowd; we lose what we try to keep to ourselves alone” (my emphasis, Rousseau 2003, pp. 381–382). Here, Rousseau is discussing poachers and “ordinary sportsman, who on a good horse, with twenty guns ready for them, merely take one gun after another, and shoot and kill everything that comes their way, without skill, without glory, and almost without exercise” (Rousseau 2003, pp. 381–382). His ideal estate is wild and without fences where game is not preserved and therefore not poached or hunted without strenuous efforts. The way that one hunts animals becomes a criterion for good taste. Hunting and eating will be truly pleasurable – pure pleasures – only if they are close to nature and simple and one has to work for them. Only then will one truly appreciate them without squandering

them and without arrogance. The “good” hunter hunts for exercise and food to share and not for trophies or sport alone.

“Good taste,” then, also requires that Émile gives up illusions of property or ownership. His estate will have no borders to keep animals in or to keep poachers out. He will share his wealth with others because only then will it bring him pleasure – a lesson that he has taken to heart. Émile knows that “with health and daily bread we are rich enough” and that wealth “cannot buy you pleasure”; and because “his heart is purer and more healthy...he will feel it more strongly” (Rousseau 2003, p. 383).

Summary

So, for Rousseau, a pure and healthy heart is more committed to the good life, which he describes as simple and natural, without pretense or property. Conversely, the good life produces a good heart, both physically and morally. The good is related to tastes, both in food and in pleasures. Moral

tastes and bodily tastes, then, are intimately connected. If we eat good food, we become good people.

Cross-References

- ▶ [Cooking Tools and Techniques: Ethical Issues](#)
- ▶ [Gluttony](#)
- ▶ [Meat: Ethical Considerations](#)
- ▶ [Taste, Distaste, and Food](#)
- ▶ [Vegetarianism](#)
- ▶ [You Are What You Eat](#)

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S

Saving Seeds

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Synonyms

Brown-bagging; Heirloom seed saving; In situ agricultural biodiversity; Open-pollinated seed saving; Semi-subsistence cultivation

Introduction

Saving seeds is an ancient and universal practice that has both grounded and propelled agriculture for millennia. The widespread transition from “hunter-gatherer” to “agriculturalist” among humans – dated these days at 12,000 years ago – centered on the domestication of edible wild plants into cultivated crops: in short, the selecting and saving of seed with desired traits so as to replant later and/or elsewhere. The practice of saving seeds has always entailed complex social and cultural dimensions, as seeds have physical as well as metaphysical currency in many agrarian societies. The people in a community who held the responsibility of saving seeds – often women, often elders – were endowed with a critical social obligation and function. This is still the case in traditionally agrarian communities across the continents. As agriculture became

more industrialized in the twentieth century, the practice of seed saving receded in import; more growers turned to annually purchased seed stock (be it hybrid, or later, genetically modified). More recently, however, for a variety of reasons, the ethical dimensions of seed saving have reemerged, and these ethical dimensions have taken on an explicitly political framework.

This brief introduction to the rich topic of seed saving begins with a biological overview of the practice. It then moves to an historical survey of major twentieth-century changes in agriculture, emphasizing in particular ethical issues regarding the evolution of intellectual property rights, the widespread decline in agricultural biodiversity, and the ex and in situ attempts to conserve this cultivated diversity. (Of note, this essay has a US focus, but the basic phenomenon are not unique to the United States.) The essay ends with a discussion of ethical debates regarding the politics of seeds and their saving.

Biological Basics

Seeds are mobile, self-sustaining packages; they carry all enzymes required for the embryo to convert the stored nutrients to tissue-building sustenance. They also carry all the genetic information of the plant, including genetic traits that were expressed in previous generations as well as genetic potential to express other traits in response to new abiotic contexts and pressures. This genetic blueprint is encoded in the

deoxyribonucleic acid (DNA) molecules, which determine the genetic traits therein and how and when they will be actualized.

Botanically speaking, a seed is a ripened and fertilized ovule that contains the plant in embryonic form as well as nutrients for the embryo during its indefinite dormancy. This embryo and stored nutrients are encased in a seed coat. Yet, many seed savers select, save, and sow parts of the plant that are technically fruits, though they act like seeds – such as corn kernels. All seeds contain one or more cotyledons or folded, rudimentary leaves, which themselves contain stored fat, protein, and carbohydrates. The cotyledon(s) is partially wrapped around the tiny leaf bud. Next to the cotyledon(s) and tiny leaf bud rest both a rudimentary stem and a root tip, which – when the seed germinates – extends to become the plant's first root. If a seed contains two cotyledons, it is called a dicot; if one, a monocot. Squash, beans, cucumbers, tomatoes, celery, cabbage, and most other vegetables that bear seed are dicots and send forth two small seed leaves upon germination. Onions and garlic are monocots, and, once germinated, send forth a single spear-like blade of grass. Also, most grain crops in the grass family (*Gramineae*) – including corn, wheat, buckwheat, rye, amaranth, quinoa, rice, and other cereal crops – have one cotyledon and are thus monocots (Bubel 1988).

In some seeds, the stored nutrients are not contained in the cotyledon, but in the endosperm, the layer of starchy seed flesh that surrounds the embryo. For many major grain crops, the endosperm nourishes the embryo – but it also feeds the human or animal eating the seed as food, as in the case of corn, wheat, rye, buckwheat, and other cereal grains. Endosperm results from the fertilization of the plant: when a male gamete fuses with a pair of female nuclei in the embryo sac, endosperm is produced. It consists of three layers: the aleurone, which breaks down starch; the transfer layer, which absorbs nutrients for the plant itself; and the larger, internal layer, which provides the bulk of the starch.

The act of saving seed depends upon the phenomenon of dormancy, during which the seed

produces chemicals that inhibit germination. Seeds are self-sufficient and self-protected during dormancy – which can last for days or millennia. The seed coat provides a water-resistant, impermeable physical protection to the seed embryo and nutrients inside. Seed coats also protect against parasites, minor injuries, and, to some degree, high or low temperatures. When dormant, the seed's metabolic function operates slowly and efficiently, drawing nutrients from the cotyledon or endosperm at a significantly lower rate than after germination.

Dormancy culminates with the pivotal moment of germination, when a seed awakens to begin taking root and sending forth cotyledon. The first sign of germination is absorption of water, which activates an enzyme that speeds respiration and catalyzes plant cells to duplicate. This increases the size of the embryo, which ultimately must break out of its seed coat and unfurl itself. The root tip extends downward to anchor the growing plant. The mobile stage of the plant ends here, as it takes root and begins its place-bound life. Besides spatial fixity and balance, the root tip serves to absorb water and nutrients from the soil, as that by now, the embryo needs more than what its seed content could provide.

A seed germinates depending on surrounding conditions, from temperature to moisture, to light, to oxygen supply. A viable seed might not germinate if the conditions are unfavorable. Some seeds need to be coaxed out of their protective dormancy at times, such as lettuces; gardeners sometimes use fluorescent plant lights to convince a lettuce seed to emerge into a lettuce plant. Some wildflower growers “scarify” the seed coats of certain wild legumes to encourage the seed to begin germination. Most wild plants and wildflowers require a period of dormancy before they will germinate, while cultivated garden flowers usually do not. To test viability, growers run germination tests on their stored and saved seed; the percentage that sprouts indicate the overall viability rates of the seed. The grower can continue exchanging, storing, and/or sowing the seed.

Once sown, the seed germinates and grows, developing into a plant that flowers, becomes pollinated, and bears fruits – and more seeds. Whether self-pollinated or wind-, insect-, or hand-pollinated, the flowering plant produces seed that can be saved. Annual seeds produce seed each year, while perennials do not necessarily, and so must be propagated through cuttings or plant division. Seed savers usually save from more than one plant, so as to avoid inbred stock and to maintain overall genetic diversity and vigor. In most plants, seeds are gathered at the end of the growing season to make sure the seed has developed a sufficiently mature embryo and endosperm. Timing is key, since growers must gather seed at the right stage of seed development and at the right temperature and moisture level: seeds that are too wet could mold. Fleshy fruits, such as melon, cucumbers, tomatoes, eggplants, and peppers, need to be slightly overripe before harvesting them for seed saving. If the fruit begins to rot, excessive heat from decomposition could damage the seed. Also, diseased vegetables often pass along pathogens to their offspring. Once harvested, some seeds (peas, snap beans, soybeans) need to be threshed to remove the pods. Saved seeds need a postharvest drying period to allow any accumulated moisture to evaporate (Ashworth and Whealy 2002).

Genetic vigor is determined by parental lines and passed along genetic traits. Physiological vigor depends upon the conditions within which the seeds were formed: temperature, sunlight, moisture levels, and soil nutrient availability. The vigor of a seed cannot be improved with correct storage, but it can be hindered with poor storage. Seeds should be kept cool and dry, since heat and moisture activate premature internal embryonic metabolism. Also, cold and dry conditions inhibit growth of bacteria, fungus, mold, diseases, and insects. A note of caution given by seed savers far and wide is to avoid planting all of one seed variety at one planting. Saved seeds are valuable for their productive and reproductive capacity; they are saved for present and future plantings and are not all to be replanted in one season in case of crop failure.

Agricultural Changes: Historical Politics of Seeds and Intellectual Property Rights

Throughout history, seed saving has served as a chief means of obtaining seed. Even growers with access to seed markets and networks would save the best seeds from their own fields to replant later and/or exchange with or sell to other growers. Yet, during the past century, the propensity toward seed saving has decreased in the Global North and even in the Global South, as formal seed markets have grown and as seed types – be they hybrid or transgenic – have prohibited their saving.

This transition toward laboratory-based breeding drew in large part upon the early twentieth-century applications of mid-nineteenth-century hereditary discoveries of Gregor Mendel. The scientific field of genetics developed rapidly throughout the twentieth century, transforming agriculture in the process. In the USA, public and “land-grant” universities explored and developed hybrid varieties of corn and wheat – among other crops. These seeds were unusually productive during the first generation (F1) after cross parent lines. But due to intensive inbreeding, these “high-yield” hybrids did not produce a productive – or even reliable – second generation of plants (F2). Therefore, biologically speaking, they were the first single-season, annually purchased seed input. The hybrids generated high yields per hectare of commodity crops; they also generated considerable income for the private industries that took an increasingly share of research and development from public institutions. American Seed Trade Association, formed in 1883, lobbied, successfully, to end the US government’s decades-long practice of distributing free seed to growers so as to encourage their field-breeding experimentation. By the 1930s, the private seed industry had established its market and begun a century of exponential consolidation and growth (Kloppenborg 1988).

The “vigor” of hybrid seeds – along with their affiliated spate of irrigation, chemical fertilizer, and chemical pesticide inputs – led to unprecedented yield per hectare increases in commodity

crops during the middle of the twentieth century. This “Green Revolution” produced massive harvests of cereal grains for the global market but heralded notorious ecological and social effects, ranging from massive biodiversity loss, soil erosion, and water pollution to consolidated land tenure and input companies. Where these profound agricultural changes took root, the practice of seed saving moved to the margins.

All the while, seeds – and the genes therein – became subsumed within a growing network of intellectual property legislation. The 1930 US Plant Protection Act helped usher in this new era of seed breeding by establishing patent systems for asexually reproduced plants (be they grafted or cloned). European law followed suit with the *Union internationale pour la protection des obtentions végétales* (UPOV) in 1961, which established plant breeders’ rights. The 1970 US Plant Variety Protection Act (PVPA) extended this framework by granting certificates of protection for sexually reproduced crops – those reproduced through seed. The 1970 PVPA clarified that farmers would maintain the right to save seed, but this exemption was repealed by congress in 1994. The UPOV maintained a corresponding exemption provision – until 1991 – when it deferred the right to save seed to national discretion and dramatically increased plant breeders’ rights (Aoki 2008).

Then, in 1980, the US Supreme Court decided the landmark case *Diamond v. Chakrabarty*, which held that people or companies could obtain utility patents on living organisms that they had genetically altered themselves. Subsequent lawsuits upheld this expansion of proprietary germplasm commodification. All the while, advances in agribiotechnology allowed plant breeders to isolate, extricate, and modify specific gene sequences, creating transgenic seed varieties that were protected by extensive intellectual property policy. Unlike their hybrid counterparts, transgenic seeds reproduce their defining hereditary traits and thus, biologically, can be saved. To protect their investment, plant-breeding industry has lobbied (successfully) to preclude seed saving through intellectual property rights (IPR) regimes. The logic here is that IPR provides

incentives for research and innovation and serves as a means of recouping costly investment.

According to US and European patent law, “naturally occurring products” cannot be patented, but if a person or company discovers an “isolated, purified, or altered form” of this naturally occurring product, they can claim a patent on it. Phenotypic and genotypic organism traits thus can be patented if proven to be (1) newly discovered or created, (2) distinct, (3) uniform, and (4) stable. These guidelines were then exported to other regions of the world through the 1994 Agreement on Trade-Related Aspects of Intellectual Property (TRIPS), a key component of the General Agreement on Tariffs and Trade. TRIPS enshrined extensive plant breeders’ rights by requiring that all countries involved in the World Trade Organization “harmonize” their intellectual property protections through either UPOV, US patent laws, or a corresponding sui generis system (Aoki 2008).

This trajectory toward proprietary ownership of germplasm has escaped neither controversy nor contention. Seeds and the genes therein have existed as a worldwide commons for millennia. Global agricultural biodiversity unfolds as seeds travel from field to field, continent to continent, adapting anew with each season. This flow has been appropriated at times for private gain: imperial enterprises sought to collect exotic seed stock from colonized outposts and capitalize upon its valuable new traits. Botanical gardens housed accessions of such exotic varieties, but, in general, germplasm remained commonly held and openly accessed.

By the beginning of the twenty-first century, however, over half of the global commercial seed market is controlled by three agribusiness conglomerates: Monsanto, DuPont, and Syngenta. This unprecedented level of private industry consolidation – accomplished through two decades of intense company mergers and acquisitions – reflects a global political economy of corporate consolidation, but the seed industry has come to embody this concentration – of revenue, resources, access, control, and political leverage. During the rise of agribiotechnologies such as genetically modified seeds, the price of seeds

has increased considerably. Meanwhile, food prices spiked in 2008 and have risen subsequently. Moreover, both seed and food prices are subject to financial volatility that has only increased as food has become a more prominent future commodity for financial speculation. Accordingly, growers, advocates, and policy makers have begun to bring the issue of seeds – and seed control – to more mainstream debates.

Agrobiodiversity Decline

As agriculture became increasingly industrialized in the twentieth century and the monocultural mode of production expanded, overall levels of agricultural biodiversity declined. Growers and plant breeders alike noted the precipitous erosion of crop diversity. The crisis has unfolded across and between all major and minor crop species: during the twentieth century alone, the UN Food and Agriculture Organization (FAO) chronicled a 75 % global loss of agrobiodiversity. Tens of thousands of plant species growing in the world are edible, and humankind has cultivated several thousands throughout history for nourishment. Presently, however, only about 150 species are grown for food, according to FAO research, while 30 crops provide over 95 % of human consumption, and only three of these (wheat, maize, rice) supply over 60 % human foods. Concurrently, each of these three staple crops has become more genetically homogenous. At all known scales of reference, the variety and variability of domesticated foods and their wild relatives are diminishing (Fowler and Mooney 1990).

Though it has not garnered the public attention of other environmental crises – with the lack of charismatic megafauna in the heirloom seed world – the larger ecological emergency of global climate change has brought its importance to the fore (or at least more to the fore than before). The standard international methods for addressing the problem of agrobiodiversity erosion are through ex situ (off-site) conservation and storage of seeds, especially through research centers, such as the mega-gene banks of the Consultative Group on

International Agricultural Research (CGIAR). The CGIAR began in 1971 as a means of connecting, streamlining, and strengthening the conservation and research capacities of individual International and National Agricultural Research Centers. Working with hundreds of government and civil society organizations around the world – as well as with private industries – this “strategic partnership of diverse donors” supports and coordinates the 15 international centers – 11 of which house mega-gene banks. These banks play an important role in facilitating agricultural researches on and for agricultural biodiversity conservation. Yet, growers, scholars, scientists, indigenous rights activists, and even international agencies have called for increased attention to and support for in situ (on-site) cultivation, such as in farmer fields and home gardens.

Despite lip service to small-scale growers and their farming skills, the politics of seeds and genetic conservation continue to favor ex situ strategies of collection and preservation. Moreover, increasingly such conservation measures serve and are subservient to certain sectors of agricultural research, such as those recently dominated by private (rather than public) plant breeding. Consequently, this research is usually funded by and oriented toward highly consolidated agribusiness corporations and expressly committed to “improving” seed stock through genetic modifications and subsequent de rigueur intellectual property rights.

Subsequently, farmers and sustainable agriculture advocates have become more pointed in their analyses of the political ecology of agrobiodiversity loss and conservation through ex situ conservation; they argue that food security is itself fundamentally dependent on viable, resilient, sustainable agriculture, which is itself predicated upon a viable, resilient, and biodiverse crop base: in short, in situ agricultural biodiversity. Accordingly, increasing numbers of small-scale growers and agrarian activists, such as those in Via Campesina, have come to argue that food security entails food – and thus seed – “sovereignty” and that the crisis of agrobiodiversity erosion and the methods to address this problem are more than merely ecological.

Though often framed dichotomously, the delineation between in and ex situ blurs somewhat upon closer inspection. After all, at times, cultivation partakes of both in and ex situ strategies. Community seed banks gather seed varieties so as to circulate them for wider cultivation in the local community, and home gardens can serve in situ needs of semi-subsistence along with ex situ objectives of “growing out” seeds for nearby community seed collectives. US-based Seed Savers Exchange serves as an ex situ hub for a wide network of in situ growers. Nevertheless, efforts that focus solely on ex situ means of conservation often belie a different understanding of agrobiodiversity, its conservation, and its value than that of initiatives focusing on in situ cultivation as the chief means of reversing, or at least mitigating, its decline.

These debates parallel a broader dispute regarding the commons of plant genetic resources: ex situ gene banks conserve this genetic treasury as a “common heritage of humankind,” even as the holdings are subsumed within growing networks of proprietary IPR. Global contestations on the asymmetrical flow of genetic resources from the gene-rich South to the gene-poor North – and the latter’s disproportionate financial benefit – spurred the 1983 International Undertaking on Plant Genetic Resources, wherein countries gathered to safeguard the genetic commons. The Undertaking was not binding, though, and its commons framework was subsequently undermined by the 1992 Convention on Biological Diversity, which upheld *national* sovereignty of respective genetic resources.

The international debates persisted and ultimately led to the 2001 International Treaty on Plant Genetic Resources for Food and Agriculture, which, when implemented in 2004, instigated a Multilateral System of Access and Benefit Sharing, such that (most) gene bank holdings could not be patented – at least not in the form received by the bank itself. Loopholes remain, but the Treaty did highlight and strengthen “Farmers’ Rights,” which formally recognized the critical contribution of farmers to past, present, and future plant genetic resources for food and agriculture.

Farmers’ Rights’ proponents advocated for: 1) the right of farmers to grow, breed, sell, and swap open-pollinated and laboratory-bred seeds; 2) open access to seeds and genes kept in ex situ collections; 3) established systems of compensation to recompense and encourage in situ agricultural biodiversity cultivation; and 4) increased participation of farmers in decision-making policy forums.

Ongoing Tensions: Rising Interest in Seed Saving, Amidst Increased IP

After generations of systemic devaluation, there has been a resurgence of interest in the act of saving seed. This has emerged on the margins of conventional agriculture for a variety of reasons. Ecologically, seed saving revitalizes cultivated biodiversity and, often, crop wild relatives as well. Open-pollinated seeds adapt to changing environments and thus constitute a means of cultivating climate-resilient food production. Seed saving usually occurs in gardens and small farms, where growers, over a few seasons, can acquire particularly strong, well-adapted, prolific, high-quality desirable varieties. Seed-saving growers select for ecological resilience as well as for specific agronomic traits (early-germinating, frost-resistant, heat-tolerant varieties with deep roots that survive well on steeper slopes or sandy soil) or culinary attributes (taste, nutrition, storage capacity, cooking preference).

Seed savers make the commitment to keep heirloom varieties alive and adapted for social reasons, finding cultural identity or continuity in a seed line or in the practice of seed saving itself. Seed savers also highlight the social bonds afforded through seed swaps, gardening networks, and agricultural communities. The seemingly innocuous act of seed saving has taken on explicitly political overtones among seed sovereignty initiatives throughout the Americas and the Asian, European, and African countries. Whether they identify their intentions as “seed sovereignty” or not, seed-saving initiatives and networks have emerged in urban and rural areas, across and throughout the continents of the

Global South and North. These growers swap, keep, and breed landraces so as to extricate from an increasingly concentrated seed industry that has gained a striking level of political-economic control over germplasm during the last generation.

In addition to political autonomy and cultural regeneration, some have (re)turned to seed saving for health and aesthetic/taste reasons, so as to assure themselves increased access to fresh produce. In urban and rural areas where fresh fruits and vegetables have become prohibitively expensive, growers with access to land might grow from saved seed as a form of bolstered food security. At the other end of the economic spectrum, growers and restaurateurs might opt to cultivate heirloom seeds due to their increased gourmet status. Rise of heirloom strains of vegetables, which can only be perpetuated through saving. Also a grower might decide to save seeds to assure herself seeds that have not been pretreated with herbicide or pesticides.

Amidst these diverse reasons for and forms of seed-saving resurgence, political tensions around the act have only increased. In the USA, for instance, the 2013 Supreme Court case *Vernon Bowman v. Monsanto* brought the controversies of intellectual property and seeds to the highest judicial review. Bowman, a 75-year-old Indiana farmer, was sued by Monsanto for IP infringement; Bowman contested that all he did was purchase and plant soybean from a local grain elevator. The grain elevator was selling undifferentiated grain seed – some of which was trademarked Roundup Ready soy. Dozens of groups filed amicus briefs on behalf of Bowman, alleging that the seed, under the doctrine of “patent exhaustion,” should be free of intellectual property, since Bowman himself did not sign a company technology contract with Monsanto (that would have legally prohibited the saving of the purchased seed). Meanwhile, numerous amicus briefs were filed siding with Monsanto (including many by public and land-grant universities), alleging that self-replicating technologies need to be an exception to patent exhaustion, so as to assure ongoing agribiotechnology investments. The Supreme Court ruled unanimously to uphold

indefinite patents on genetically modified seeds. All the while, however, the growing national and international attention to such seed policy has helped bring the complicated and contested politics and ethics of seed saving to light.

Summary

For a wide variety of reasons, the act of saving seed is reemerging as an important and powerful practice. People and communities have elected to begin, continue, or resume seed-saving networks for food security reasons, health and nutrition priorities environmental concerns, cultural identity, social interdependence, and political independence. Meanwhile, controversies have grown recently as intellectual property protection of new agribiotechnologies increases – and as corporate consolidation of the seed industry reaches unprecedented levels. Seed saving has become a political act – even for those who simply wish to grow a crop from existing seed stock. The ethical dimensions of seed saving encompass larger questions of the commons and its encroachment. The ethical aspects of seed saving also entail questions of food security – and what has come to be known as food and seed “sovereignty” or autonomy. All the while, the extensive knowledge and skills required for effective seed saving have been devalued for generations but, increasingly, are being re-recognized and revalued as critical for cultivating ecologically resilient, bountiful, and diverse agricultural systems.

Cross-References

- ▶ [Biodiversity](#)
- ▶ [Biotechnology and Food Policy, Governance](#)
- ▶ [EU Regulatory Conflicts over GM Food](#)
- ▶ [GMO Food Labeling](#)
- ▶ [Home Gardening](#)
- ▶ [Intellectual Property and Food](#)
- ▶ [Intellectual Property Rights and Trade in the Food and Agricultural Sectors](#)
- ▶ [Islam and Food and Agricultural Ethics](#)
- ▶ [Transgenic Crops](#)

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School Lunch and Gender

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Synonyms

Ancillary school services; Gender differences;
School food

Introduction

School lunch and gender research examines whether, how, and why eating differs among girls and boys and whether or not women and men are differently involved in feeding students at school. It is a subfield of school food research. The school food literature is concerned with understanding the underlying values and related behaviors associated with food in schools and with analyzing the goals and implementation of school food policy. This entry uses the terms school food, school lunch, and school meals interchangeably to refer to food or nutritional supplements available to students and the related policies governing the purchase, distribution, and consumption of food in and around schools. Publications delved into all possible scenarios for student eating: breakfast, lunch, snacks,

supplemental nutrition, and take-home-from-school food staples for the poorest of students. The literature reflected on the experiences of children who ate food prepared and served from the cafeteria, who received micronutrients distributed by transnational organizations, who brought lunch from home, and older students who left school during designated breaks.

Gender was the most prevalent variable applied in school food research. The term gender was operationalized in two different manners. The most common way to deploy gender to understand the dynamics surrounding school meals was as a headcount of girls and boys in a sample size. Less prevalent in the research was the use of gender to signify socioculturally defined difference that shaped patterns of eating; food choices; feelings toward the self, school, or school performance; and involvement in school meal administration (Robert 2014). In other words, rather than counting girls and boys, researchers who applied the latter meaning of gender to their analysis examined why girls and boys selected different items to eat or why girls were sent to school when a lunch program was initiated.

Paying attention to gender did not provide explanations for all patterns related to school lunch. Many researchers took account of other identity markers and societal factors in conjunction with gender. These included socioeconomic status (SES), which in the United States was equated with student's access to free or reduced school meals but also was reflected in who brought lunch to school or was able to purchase food during lunchtime. Race and/or ethnicity also was identified in research studies and linked to SES and gender to understand student choices and the physiological impacts of particular feeding programs.

School lunch and gender research grew exponentially over the first decade of the twenty-first century due to four overlapping concerns for the health and well-being of children. The first concern was with rising rates of childhood obesity and type II diabetes. The second concern was with interrogating the purpose of feeding students at school. The third was a concern for

understanding the qualitative impact of eating at school on students' well-being or attitudes toward schooling. The fourth is the smallest group of studies and explores how research on school lunch and gender was constructed. The rest of this entry elaborates these four concerns attending to the analytic schema laid out by Sandler (2011) to critically examine school food or school food research: "who feeds whom, what, how, and for what purpose" (p. 25). Suggestions for further research are included at the end of each subsection.

Health Impacts

Researchers from across academic disciplines are concerned with halting the worldwide epidemic of obesity and type II diabetes in children. The underlying physiological patterns of consumption or who eats (and does not eat) what and with what health outcome are the concern of these investigations. Rates of obesity and type II diabetes continue to increase worldwide across socioeconomic groups. Researchers concerned with understanding why the diseases were on the rise aimed to determine what was eaten at school that may contribute to the epidemics. Most studies observed what girls and boys consumed or recorded in food journals. Caine-Bish and Scheule (2009) examined food preferences of girls and boys across grades to determine what foods might be incorporated into school lunches to improve healthy eating at school. Their study is of importance to this entry because of the findings: girls and boys have different food preferences and those preferences change across elementary, middle, and high school. Further studies also measured body mass index (BMI) to ascertain who eats what and with what physiological outcomes. However, as Galloway (2007) showed in her examination of rural Canadian girls and boys, overweight and obesity measures were not statistically significant over a 24-h period of recall but differences in energy and nutrient intake could not be ignored. Lopez-Frias et al. (2005) similarly found boys in Southern Spain consumed more calories than girls when lunch was consumed at home though not statistically significant. "It is clear that there is

a pattern of dietary intake in this sample that produces greater energy and micronutrient intake in boys" (p. 783). Galloway hypothesized that sociocultural assumptions that favor boys when decisions were made about health-care access, quality of food consumed, and amount of food served may have shaped the differences and urged further research. Studies also examined what parents sent in packed lunches and noted differences between what was sent for girls and boys. Boys were sent more food in general perhaps reflecting the cultural assumption that boys require more overall calories without regard for the items consumed (Jones et al. 1999). The same study found that fat content of bag lunches (lunches brought from home) correlated with ethnicity and gender but not with socioeconomic status (SES). Future research needs to consider how gender and ethnicity shape what is eaten at school whether brought from home or selected at school. Girls were found to consume more fruits and vegetables than boys, a marker of healthy eating habits (Reynolds et al. 1999). Girls also were found to have more fruits and vegetables sent in packed lunches from home (Brennan et al. 2010). Few studies critiqued why girls and boys consumed different items, leaving many questions about eating behaviors that have an impact on health and the values that shape girls'/boys' choices for future researchers to answer. While not addressing ethical questions, many of the studies that related to school lunch health impacts laid the foundation for future studies to do so.

Why Eat at School?

Whether or not students should be fed at school is not a debated issue: governments around the world will feed students if funds are available (Bundy et al. 2009). In developing or high poverty contexts, school lunch draws boys and girls to school. Pertinent to this study, serving food at school encourages poor families to send their daughters and keeps them coming back. Why students were being fed, what, and for what purpose can be a driving force behind differences in school access. Studies also compared lunches eaten at home with meals available at school.

For example, Lopez-Frias et al. (2005) found students consumed more nutritious foods at school than at home where, they postulated, children influenced what was served more than at school. In particular they found boys ate more food of lower nutritional value than girls at home. Nichols et al. (2009) found that when urban middle school (grades six through eight) girls and boys did not eat lunch at school, both groups engaged in problem behaviors ranging from marijuana use (boys) to smoking cigarettes (girls). Governmental directives aimed at meeting caloric and nutritional needs of children were credited with improving calcium intake among girls (Weible 2013) and fruit and vegetable consumption among all children, particularly US minority populations in different regions (Reynolds et al. 1999). The majority of the studies in this literature grouping found positive correlations could be created between government-sponsored food policies and girls'/boys' improved lunchtime eating whether related to nutrient and caloric intake or offering lunch and keeping students in school for it. Future studies will continue to build on these findings, interrogating school food policies at national and subnational levels.

The Qualitative Impact of Eating at School

A third force behind school food research is to understand what qualitative impact eating at school has on school performance and satisfaction with learning. The concern is whether or not eating at school (and what is eaten) improves the school experience. Ask et al. (2009) probed whether weight and academic performance might be affected by a healthier in-school lunch. They found that girls dropped weight and were more satisfied with school performance. This type of study conducted in Norway, a developed nation, and with a group of students whose SES was not identified, should not be confused with research and programming from the field of development that aimed to increase nutrient intake for the poorest of the world's school-aged children. Studies probed emotional outcomes of eating at school in relation to academic achievement or body image (Zullig et al. 2006). Research

revealed links between school lunch and the learning of a variety of social behaviors such as healthy eating habits or the consumption of fruits and vegetables. When lunch was consumed at school, drug/alcohol use decreased (Nichols et al. 2009). Zullig et al. (2006), however, found that offering free breakfast did not mean high school students ate. In this case, every group except one (African American young women) cited dissatisfaction with their bodies and practiced unhealthy eating practices including skipping breakfast. Thus eating and eating at school, specifically, was a give-and-take proposition impacted by how adolescents "digested" broader sociocultural messages about gender-body type/image. More studies are needed related to this concern; particularly absent was the impact of advertising and branding of food and food products in schools.

Constructing Research for Validity and for Gender

Research design was a fourth concern identified in extant literature. Many studies on school meal consumption were identified in preparation for writing this entry. However, the variable of gender (signifying girls and boys by N sample size) was left to the wayside as the research and/or write-up was completed. That is, the number of girls and boys was identified as a variable in the abstract and first tables or graphs only to be ignored in the discussion of findings and conclusions.

A small number of studies critiqued methodological designs (though none addressed the problematic noted above). They are important to acknowledge because of their potential impact on what is known about the relationship of school lunch and gender. The vast majority of school food studies relied on student recall, or memory of what was consumed, to measure food preferences, eating behaviors, and nutritional intake. Lyng et al. (2013) questioned the accuracy of qualitative recall measures among girls and boys. Their findings, that girls more accurately reported what was brought from home for lunch and what was consumed, suggest a need for concern about how school food is measured in future

research. These types of studies are a testament to the growth and necessity of well-crafted school lunch and gender research.

Summary

The need to take account of who is involved in school lunches, how, when, from where, with what physical and/or emotional outcomes, and why is crucial to support healthy eating practices and development in all children. Such research also encourages the equitable distribution of resources to meet the needs of student populations, supporting education for all. This entry explained school food scenarios analyzed in the literature. Also described were the differing ways that gender is applied in studies as either means of sorting girls and boys/women and men or as varied patterns that shape the school lunch dynamic. The literature addressed four concerns: rising obesity and type II diabetes among all students, critiquing the purpose of feeding at school, understanding the qualitative impact of eating at school, and, finally, how to improve school lunch and gender research.

Cross-References

- [Body Image, Gender, and Food](#)
- [Child Nutrition Guidelines and Gender](#)
- [Feeding Children](#)
- [Food and Choice](#)
- [Food-Body Relationship](#)
- [Food, Class Identity, and Gender](#)
- [Food's Purposes](#)
- [Gender and Dieting](#)
- [Gender, Obesity, and Stigmatization](#)
- [Gender Norms and Food Behavior](#)

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Seed Banking, Seed Saving, and Cultivating Local Varieties

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Synonyms

Ex situ plant genetic resource conservation; Gene banking; Seed saving

Introduction

A seed bank is an organization or facility used to store and preserve plant seeds, in particular varieties that are rare, have fallen out of commercial use, and/or may have unique desirable genetic characteristics.

Over the course of the twentieth century, each year, farmers worldwide grew fewer varieties of any given crop, instead choosing from a small pool of varieties that could ensure crop uniformity that contributes to efficiency and mechanization of harvest, transport, and commodity exchange. While this resulted in unprecedented agricultural yields, the focus on a few highly productive varieties also led to decreased genetic diversity in any given farm field and thus increased vulnerability—absent genetic diversity, a single pathogen or pest can obliterate entire harvests. The United Nations Food and Agriculture Organization estimates that 75% of the world's food product diversity has been lost since 1900 (Anonymous 1999).

In response to this trend, since the 1940s, governments, coalitions of governments, and nongovernmental entities have actively saved and banked seeds as a means of preserving the genetic foundation of agro-biodiversity. The world's estimated 1,500 public and private seed banks—also commonly called gene banks—store an estimated six million seed accessions (not including tubers, cuttings, or seedlings which

are protected in other kinds of institutions) (Brush 1999). These seed banks are widely regarded as insurance policies against global food insecurity in the face of disasters such as drought, climate change, famine, political instability, or war. Banked ► [biodiversity](#) is, in essence, a genetic arsenal poised to protect humanity against future unknowns. And in preserving that diversity, scientists, governments, and others preserve potential for future medical and agricultural developments.

Over generations, climates and landscapes change, and seeds adapt. As a result, seeds hold genetic resources that are suited and specific to a given place. Seed genetic diversity is also a record of farmers' experiences and decisions over the course of centuries, as they saved seeds from plants that exhibited the most desirable traits: frost resistance, high yields, pest resistance, strong nutritional profile, excellent flavor, or hardiness on marginal cropland. These locally adapted varieties are also called landraces and make up a portion of what seed banks preserve, in addition to (for example) crop wild relatives, such as the wild wheat grasses from which cultivated wheat has been selected and bred.

Agricultural systems, genetic science, factors influencing food supply chains, and international politics governing natural resources preservation are irreducibly complex. The promotion and protection of crop genetic resources including local seed varieties can be sensitive, nuanced work that engages the fields and issues of biotechnology, corporate consolidation, trade relations, agricultural policy, cultural memory, gender differentiation in agricultural systems, heritage, and intellectual property rights.

In Situ Versus Ex Situ Agro-biodiversity Preservation

The successful preservation of seed genetic diversity through seed banking is predicated on successful long-term storage under optimal, controlled conditions, including steady cold temperatures and minimal humidity. Seed banks tend to be infrastructure-heavy, with seed-drying

machines, seed germination incubators, medium- and long-term cold storage facilities, test fields, and sufficient staff (primarily scientists and technicians) to store the seeds themselves as well as information about those seeds (in databases), to conduct germination tests, and to grow out the collection when necessary to resave seed in order to regenerate and grow the bank's collection. When stored in banks, seeds do not last forever, and each year fewer and fewer stored seeds will germinate (or sprout). Without dependable cold storage, regular germination tests, and regeneration efforts, a seed bank can become a tomb.

Funding is thin for agro-biodiversity preservation efforts around the globe, and thus maintenance of seed bank infrastructure is challenging for most regions and countries. It is particularly a struggle for those countries that ride an economic line, those that are categorized as "more developed" but in actuality, lack the resources to fund their own work and infrastructure (such as Greece, a country in a region of disproportionately high biodiversity, yet with limited national, European Union, or international resources to devote to agro-biodiversity).

Media attention to seed banking spiked in 2008 with the creation of the Svalbard Global Seed Vault, built into a mountainside in the permafrost on a Norwegian island between the mainland of Norway and the North Pole. The Vault is considered a "backup" seed bank, invulnerable to man-made disasters (such as political instability that would lead to seed banks being looted for seed for cultivation and for food) or natural disasters (even in a power outage the permafrost exterior of the Vault would keep the collection frozen). Seed banks that send backups of their accessions to the Vault retain ownership of those accessions, much like a traditional financial banking institution. The Svalbard facility is unmanned and, unlike traditional seed banks, its accessions are not shared with breeders, researchers, or farmers.

As a complement and counterpoint to *ex situ* (off-site) seed banking conservation efforts are *in situ*, on-site, methods. *In situ* methods for agro-biodiversity conservation take place on farm and depend on well-trained farmers to cultivate,

regenerate, and save seeds. Some *in situ* conservation programs the potential to improve farmers' livelihood through increased market opportunity, by empowering farmers as the stewards and curators of both seed genetic diversity and of the knowledge base it takes to cultivate those varieties. *In situ* preservation methods, farmers stand to benefit from the process of conservation, particularly when farmers are given access to gene bank materials and are well-trained in cultivation for seed saving and in seed storage techniques and when investments are made in local agricultural infrastructure to bring agricultural yields to market (Brush 1999).

In comparison with banked seed, seed conserved *in situ* is in a constant state of change, adapting to weather, soil, and pest conditions. Farmers' priorities and preferences in seed selection also influence the pace and kind of change seen in seeds over plant generations. While most conservationists agree that both *ex situ* and *in situ* methods have a place in a broad agro-biodiversity strategy, advocates of *ex situ* conservation note that certain plant characteristics and gene expressions are lost in *in situ* approaches (through continued seed adaptation and farmer selection), while *in situ* advocates note that in *ex situ* approaches, seed genetics remain too static and unresponsive to the conditions in which they might someday be called upon to grow.

Participatory plant breeding (PPB) has emerged as a collaborative model that engages producers as plant breeders, enabling farmers to set the goals and target outcomes of the breeding process and define the characteristics they need, granting them control over plant genetic resources, building their technical expertise, and often resulting in new products, markets, or supply chains. It is a response to the lack of agency many farmers experience in the mainstream seed marketplace, in which approximately five companies control an estimated 75% of the global vegetable seed market. PPB commonly brings together seed bankers, plant breeders, consumers, policy makers, and players across food supply chains (distributors, processors, marketing experts). This approach is most often implemented in and is most impactful in

agricultural systems that are heterogeneous, smaller scale, and operating on marginal lands/soils or otherwise high-risk farming systems (Brush 1999).

Community Seed Banking, Gender, Knowledge, and Memory

In addition to national, multinational, and university research stations and breeding programs, there are numerous NGOs internationally that store and catalogue seeds; cultural organizations that celebrate and promote agricultural products and practices surrounding local varieties; and grassroots networks of farmers and their advocates who actively preserve, save, and distribute traditional seed varieties. Though these groups' motivations and strategies may vary, they share the goal of preserving agro-biodiversity for its known and unknown future potential uses. Community seed banking is a broad term that covers a range of seed saving/banking organizational typologies, including those described above. Community seed banking, seed saving, or seed library initiatives are a complement and a counterpoint to formal seed banks, the infrastructure and accessions of which are not open to or available to the public at large.

Researchers and agro-biodiversity advocates describe the concept of formal vs. informal seed systems as a framework for understanding seed-saving networks, approaches, and impacts. A "seed system," whether formal or informal, includes all stakeholders involved in a variety of functions related to seeds, including breeding, processing, storage, packing, quality assurance, marketing, research, distribution, certification, cataloguing, growing, and regeneration. These complex systems also encompass the technology, policy, organizational structures, logistics, infrastructure, and regulations that define seeds, from development to sale to use (Mgonja 2011).

Social scientists who study seed systems (particularly those of developing nations) have noted that formal seed systems include formal organizations, agencies, entities, and infrastructures (in the sectors of education, government, business,

and science). These formal systems are described as predominantly men's domain and tend to disproportionately benefit men. Conversely, women are seen operating primarily in informal or traditional seed systems that function primarily at the community or household level: globally, in family farming operations, the labor shifts that have followed increased farm mechanization have often resulted in a shift of seed selection, saving, and management responsibilities to women. Recent research has shown that many women-operated informal seed systems Sperling et al in less developed countries are transforming into small-scale seed businesses that are increasingly resulting in high-quality, consistent seed.

These differences are significant for reasons of access, economics, agency, and power; they are also significant drivers of seed variety selection and, thus, which plant genetic resources are conserved. Farmer seed selection preferences as well as the kind of knowledge retained about those varieties/selections are differentiated by gender and other demographic factors (including age, socioeconomic profile, religion, and ethnicity). For example, a multi-sited study in Africa and Asia conducted by the United National Food and Agriculture Organization revealed that men tend to select for varieties that mature early, form strong seed heads, and other characteristics that better serve commercial marketplaces. Women on the other hand selected based on characteristics more relevant to family food security than markets, including how plants performed and adapted to climate conditions, nutritional qualities, taste, and high yields (Mgonja 2011).

Since the 1980s, there has existed a movement advocating for cultural memory banking alongside seed banking, to acknowledge and record (often through oral history and interview processes) the intimate connections people and communities have with their crops and crop practices. A memory bank includes detailed information on a community's agricultural methods, planting, harvesting, postharvest technologies, seed variety characteristics, tools, storage methods, soil types, and uses of specific crops (Nazarea 2006). This movement is particularly significant as most seed banks lack sufficient resources to

adequately collect and database ethnographic information about seeds. As a result, banks often know little about the characteristics of their collection, how those seeds perform when planted, or whether multiple accessions might be genetically identical yet referred to by different names in different regions. When seed banks collaborate with farmers on in situ or participatory plant breeding initiatives, this lack of information effectively means that farmers themselves must absorb the financial risk and invest the time in learning the behaviors of seed varieties that, in comparison with modern improved plant varieties commonly sold by seed companies, are likely to require more farmer labor.

Ethics and Rights in Seed Breeding and Banking

A geopolitical reality is that crop biodiversity is not distributed evenly across the globe; rather, it is concentrated in what the early twentieth-century Russian scientist Nikolai Vavilov identified as centers of biodiversity (Nabhan 2011). In terms of plant genetic resources (PGR), regions that are rich in financial or infrastructural resources tend to be “gene poor,” and vice versa. As a result of this imbalance, there has been a long history of thought and policy related to whether and how maintainers of plant genetic resources ought to be compensated for their work and their contribution to PGR management (Fowler and Mooney 1990; Cummings 2009).

These market-based approaches to compensation however are complicated by the fact that most of the benefits that PGR maintainers’ work confers are public, whereas the seed and genetic resource industry is deeply concentrated and driven by intellectual property and patent law that favors “improvement” over preservation (Fowler and Mooney 1990). Fundamental to American property rights law (and shared by the laws of many more developed nations) is the argument that it is labor applied to resources, not the resources themselves, that creates value. Within that conceptual framework, compensation would not be due to farmers who protect and

maintain raw plant genetic resources that end up as accessions to seed banks. But once breeders access that raw material and develop newly bred strains with it, the material is considered improved and thus valuable. Of course, in the case of PGR, landraces are the result of not just generations of adaptation to nature but also generations of farmer labor and selection. These legal structures limit not just compensation potential for PGR maintenance but also farmers’ access to seeds and genetic materials themselves.

Several policy-related highlights from the US and global history of the flow of rights to plant genetic resources follow.

In 1930, the United States passed the Plant Patent Act, which for the first time gave plant breeders patent control over newly bred varieties of plants that asexually reproduce. In 1970, the Plant Variety Protection Act passed in the United States. This intellectual property statute granted plant breeders 25 years of control over plant varieties that sexually reproduce, based on the breeders’ ability to prove ability to prove that the variety was novel, uniform, and stable. Perhaps the most significant exemption written into this Act granted farmers the right to save their own seed from these bred varieties and even to sell seeds to each other. As a result of these exemptions, in the United States, there were high rates of farmer seed saving, even among farmers of commodity crops, through the early 1980s (Kloppenborg 2005).

Around the same time, in 1971, on an international scale as part of the Green Revolution, the Consultative Group on International Agricultural Research (CGIAR) was created with support from the Rockefeller and Ford Foundations. Headquartered in Rome but operating autonomously, the CGIAR built 15 research centers around the world, centralized in Vavilov’s centers of biodiversity and, thus, concentrated in the global geopolitical south. CGIAR was and is devoted to increasing global food security through management of natural resources, especially plant genetic resources. While advances at CGIAR research stations have been much celebrated (including breeding programs that improved yields and in some cases nutritional

profiles of a range of crops), the organization has also been criticized for institutionalizing the flow of plant genetic resources, power over those resources, and access to the value of those resources from less to more developed countries (Kloppenburg 2005).

In 1983, under pressure from the developing world, the United Nations FAO drafted an International Undertaking on Plant Genetic Resources for Food and Agriculture that included a clause that identified plant genetic resources as the “common heritage of mankind.” In practice, this clause was a strike against efforts for compensation to producers and maintainers, as plant genetic resources found within one nation’s borders or one community’s property lines could not necessarily be considered privately owned (Fowler and Mooney 1990).

Meanwhile in the United States, in 1985, the first utility patent (a patent structure that exists outside of the Plant Patent Act) was granted on a plant: corn. This was significant because utility patents cover not just the plant variety itself but all the component parts of that variety and because, unlike the Plant Patent Act, utility patents do not include exemptions for farmer seed saving. The farmer seed saving exemption was then removed from the Plant Variety Protection Act in 1994, severely limiting US farmers’ right to select and save seed and paving the way for the patent-based and litigation-heavy system that has defined the implementation of biotechnology and plant genetic modification (as opposed to traditional seed breeding methodology which has been the subject of this article) (Kloppenburg 2005).

In 1989, a UN FAO resolution made landrace maintenance worthy of compensation, and an international fund was created to fund that compensation. However, contributions to that fund were voluntary and never significant. In 1992, the International Convention on Biodiversity was drafted without inclusion of provisions for farmers’ rights (seed saving rights, specifically), a move that some historians have noted effectively ended the international discussion on “common heritage” and compensation. The UN FAO’s International Treaty on Plant Genetic

Resources for Food and Agriculture, entered into law in 2004, sought to harmonize and update the 1983 International Undertaking for Plant Genetic Resources for Food and Agriculture with the Convention on Biodiversity. The treaty includes stronger language on farmers’ rights than the undertaking that preceded it, as well as a mandate on profit sharing for cultivar developed from genetic materials borrowed from gene or seed banks. However, it does not cover all key food and forage crops (Cummings 2009).

Marketing Landrace Seeds and the Foods They Yield

Internationally, the seed trade is a very tightly controlled and standardized industry in order to guarantee farmers and seed buyers a uniform, consistent, reliable, and predictable product. Since the 1970s, the European Union, for example, has overseen the marketing and dissemination of seeds in its member countries through its Common Catalogue. Each member country produces a national catalogue of seeds that has passed rigorous uniformity standards, and these national catalogues are then compiled into the Common Catalogue. Seed that does not pass these rigorous standards and does not appear in the Common Catalogue cannot be sold. Though landrace seeds possess characteristics that plant scientists, farmers, and consumers celebrate (such as drought resistance, ability to perform well in marginal soils, or unique tastes, shapes, or colors), few perform in a uniform or predictable way. Thus trade of landrace seed itself – and opportunities to employ market-based solutions to increase trade of landrace seed – is limited and at times illegal (Cohen 2011).

Absent international political or financial structures to compensate maintainers of plant genetic resources or to develop strong markets for landrace seed, several market-based solutions have arisen to promote the foods these seeds yield, the most notable of which is geographic indication (GI) standards and labeling. Country by country, there are different legal structures under which GI is practiced. Ultimately,

a geographic indication scheme is a legally defined set of standards for food and beverage products, the goal of which is to enable producers (farmers and producers of value-added products) to differentiate their products in the marketplace based on place, origin, heritage, production processes, and tradition, rather than making them compete on traditional market criteria of volume, marketing, or pricing. For consumers, the purpose of a GI label is to guarantee a link between a product's origin; that place of origin's natural resources, culture, processes, and practices; and overall product quality.

While landrace conservation, plant genetic resource maintenance, and agro-biodiversity are not explicit objectives of GI, some economic research has drawn links between genetic resource conservation and the creation of strong GI-based value chains. GI schemes have been found to support agro-biodiversity by making crop varieties and the unique food products they contribute to be economically viable, and when those varieties are economically viable, farmers plant and preserve them. There have also been documented instances where GIs have resulted in negative impacts for plant genetic resources, for example, by highlighting products that specialize in certain landraces to the exclusion of others (Larson 2007). Still, successfully marketed GIs can result in recovery and reinvigoration of endangered plant genetic resources themselves and markets for products utilizing those resources, in particular, when genetic and crop management is a close cross-sector collaboration between the producer, a gene bank, food supply chain stakeholders, and regional agricultural research institutions.

Summary

The world's estimated 1,500 seed banks hold millions of accessions representing the plant genetic resources that form the foundation of plant breeding and cultivar development for agriculture's future. In light of the dearth of international resources devoted to maintaining seed bank infrastructure and shifting climate patterns

that impact agricultural performance and seed variety choice, formal seed banking alone is essential but insufficient. In combination with participatory plant breeding, in situ preservation methods, informal seed saving and distribution networks (and international policy that supports farmers' right to engage in seed saving and trade), memory banking of agricultural ethnographic and plant physiology data, and strong value chain development for the foods these banked varieties can yield, seed banks are the crucial foundation of an integrated plant genetic resources preservation strategy.

Cross-References

- Biodiversity and Global Development
- Climate Change, Ethics, and Food Production
- Farmer-Scientist Knowledge Exchange
- Food and Place
- Intellectual Property Rights and Trade in the Food and Agricultural Sectors
- Political Consumerism: Consumer Choice, Information, and Labeling
- Saving Seeds

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Slash-and-Burn Agriculture

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Synonyms

Shifting cultivation; Swidden cultivation

Introduction

Slash-and-burn agriculture (Peters and Neuenschwander 1988; Palm et al 2005), also called swidden (Mertz et al 2009) or shifting agriculture or cultivation (Nye and Greenland 1960; Robison and McKean 1992; Aweto 2013), typically refers to land uses where a cropping period is rotated with a fallow period that is long enough to enable the growing of dense, woody vegetation and where the biomass is eliminated from the plot by cutting, slashing, and burning it, prior to the next cultivation cycle. It is generally considered an extensive land use, maintained through time by expansion over

uncultivated land following population growth (extensification), in contrast with more intensive land uses, where the biomass is incorporated to the soil through plowing or other practices. It encompasses a great variety of systems (Schlippe 1956; Conklin 1957; Miracle 1968; Rappaport 1984; Dove 1985; Fresco 1986; Ramakrishnan 1992; Schmidt-Vogt 1999; Denevan 2001; Shaoting and Fiskejo 2001; Whitmore and Turner 2001; Palm et al 2005; Pollini 2007; Cairns 2007; Saxena et al 2007; Mertz et al 2009; Tr  n et al 2009; Cairns 2014) that differ by the ecosystems being cleared, the landscapes being produced, the duration of cultivation and fallow periods, the management of fallow land, the crops being cultivated, and the techniques being used.

The terms slash-and-burn, swidden, and shifting cultivation are often used interchangeably, although they outline different aspects of the system. Slash-and-burn refers to the way the biomass is eliminated after clearing: by setting it afire, in contrast with slash-and-mulch systems (Thurston 1997), usually practiced in areas with no dry season, where the biomass is left to decompose. The term “swidden” refers to the act of burning a biomass in order to cultivate it. It is the closest synonym to slash-and-burn and is often preferred to this term, because it does not outline the acts of “slashing” and “burning,” which would be conducive to negative prejudices. But it is rarely used in cases of slash-and-burn systems with short fallow. Shifting cultivation evokes the idea that fields are shifted from one location to another and that the land is not permanently cultivated. It encompasses both slash-and-burn and slash-and-mulch systems but, like for swidden cultivation, is rarely employed in case of systems with short fallow, where cultivation is close to permanent. It is also misleading as it suggests that the land is abandoned and idle after a few years of cultivation, which is generally not the case. In this entry, the term slash-and-burn agriculture is adopted in order to encompass systems with long or short, herbaceous or woody fallow, where the biomass is actually being slashed and burnt.

Characterization

Slash-and-burn agriculture is a widely adopted and sometimes inescapable strategy to practice agriculture in forested landscapes. Most staple annual crops require full exposure to the sun in order to grow; hence areas of forest need to be cleared to establish new fields. This offers great sanitary conditions to crops because their main competitors (weeds) and threats (pests and diseases) are destroyed, except for wild animals if some forest remains around the field. Burning the biomass further provides nutrients that deposit on the soil in the form of ashes. After one to a few years of cultivation, weeds, pests, and diseases start to appear and nutrients are washed away or have been utilized by the crop. The field is then temporarily left to fallow, but will be cleared and cultivated again once a secondary forest or sufficient biomass will have regrown.

The fallow period usually lasts 3–25 years, depending on climate and edaphic conditions and the techniques being used. Its purpose is to reconstitute a stock of biomass that can be mobilized again through burning and to eliminate weeds, pests, and diseases. A longer period is technically unnecessary and would result in additional burdens for cutting larger trees. A shorter period is usually conducive to disappearance of woody vegetation, which triggers a fertility crisis or significant technical changes. When the vegetation is dominated by grasses, the use of fire is abandoned or a slow burning is practiced in order to reduce nutrient and carbon losses. Vegetation is peeled off the land together with its root mat, stacked into heaps, sometimes covered with soil, and charred. This technique, called “paring and burning,” differs from slash-and-burn and is not considered in this entry.

Crops cultivated in slash-and-burn agriculture systems vary greatly. Several crops are associated, which gives to the field a messy appearance, with stumps, incompletely burnt logs, and spared canopy trees littering the field. But there is order in this heterogeneous environment. Farmers adapt to the heterogeneity of their fields by varying crop associations and spacing. They can plant shade-tolerant species (bananas, plantain, taro)

under remaining trees, pumpkins and other vegetable on the most fertile spots, and cereals (corn, sorghum) and legumes in open areas.

Perennial woody crops can also be planted, in which case they continue to grow during the fallow period. Useful natural trees are also favored, by being spared during the clearing and weeding, given some care during the fallow period, and sometimes actively planted. There is thus no straight line separating slash-and-burn agriculture from more intensive cultivation systems. Perennial crops like cocoa or coffee can be associated with annual crops after clearing. They succeed to these crops in the same way as would the fallow vegetation otherwise, until the aging plantation, which often takes the form of a forest with a closed canopy, is rejuvenated by starting a new cycle or remains as a permanent agricultural system called agroforest.

In spite of its suitability to forest environments, slash-and-burn agriculture is rarely practiced alone. Most farmers combine it with other land uses like home gardens, irrigated fields, or permanent fields of perennial crops. Slash-and-burn farmers also typically practice hunting, gathering, and fishing, activities whose importance is proportional to remaining forest cover.

Economic Rationality

Slash-and-burn agriculture is practiced all over the world in forest land with wet climates and low population density. This is not a coincidence. It is often the most rational land use in these conditions, and it can be maintained in spite of population growth as long as forest land remains, through extensification.

When population density is low, land is abundant while labor is usually a strong limiting factor to put more land into production. Like other economic agents, slash-and-burn agriculture farmers search for the maximization of output for a given level of input of the scarce resource, labor in their case. Slash-and-burn agriculture enables maximizing labor productivity for three main reasons: First, slash-and-burn agriculture with long fallow does not require much work once the crops

have been sown. Clearing the forest requires heavy work but is done by men, who do not have to carry significant domestic tasks, and is not constrained by tight deadline as it is done off season, during the dry period. Once the biomass has been burnt, crops are typically sown by men and women, the latter being often in charge of most maintenance operations until harvest, at least in African countries. Slash-and-burn agriculture with long fallows limits weed invasion because weeds typically grow less abundantly in primary or old secondary forests. This is probably the main advantage of the system and the main cause of its high labor productivity. This advantage is progressively lost with the reduction of the fallow period. The reason for abandoning the field after a few years of cultivation is often weed invasion, rather than or as well as decreasing soil chemical fertility. Weeds may thus be the key constraint to adopting permanent cultivation, because of the labor required for weeding.

Second, slash-and-burn agriculture does not imply plowing the land, an operation that requires a lot of work if done manually. Crop roots do not need to penetrate deep into the soil as nutrients are concentrated close to the surface after the burning. Plowing would anyway be impossible or excessively burdensome because of the dense root mat and the many stumps that cover the soil.

Third, even though yield (output per acre) maximization is not the purpose, slash-and-burn systems usually have quite high yield at least when practiced with long fallow. Fertility depends on the amount of biomass that can be burnt, as much as on the soil's chemical properties. Even soils reputed to be infertile like ferralsols can yield high if a long fallow can be practiced.

The Limits of the System

Slash-and-burn agriculture is generally regarded as a sustainable land use when long fallow can be practiced, that is, when the initial fertility can be

reconstituted after the cultivation cycle. This is generally possible with a population density below 35 inhabitants per square kilometer (Mazoyer and Roudart 2006), although it greatly depends on ecological conditions. When population density increases, which can be caused by high birth rate and/or migration, the fallow period typically decreases. Fewer nutrients accumulate in the biomass and are returned to the soil in the form of ash. With a very short fallow (1–3 years), the vegetation is dominated by herbaceous plants whose roots do not penetrate deep into the soil. This root mat can slow down leaching by capturing nutrients, but it does not bring additional nutrients to the soil, as do trees whose roots access the bedrock where mineralization occurs. A shorter fallow period also favors weed invasion, pests, and diseases. The addition of these effects can trigger a fertility and/or a labor crisis. Yield per acre decreases, while labor requirement to cultivate the same surface increases. Beyond a certain threshold, the system cannot be sustained. It does not produce enough food to provide the caloric intake required for the work of the next growing season, unless technical changes occur. The system must evolve. New techniques and strategies are thus required, and created or adopted, to escape the dead end.

The Evolution of Slash-and-Burn Agriculture Systems

Slash-and-burn agriculture is probably one of the oldest agricultural land uses. It has been practiced worldwide, from the tropics to temperate regions, and is still practiced widely in the tropics. But in many regions, it has been abandoned, sometimes for centuries or millennia, and alternative land uses developed (Boserup 1965; Angelsen and Kaimowitz 2001; Brookfield 2001; Mazoyer and Roudart 2006; Cairns 2007). Looking at history and ongoing changes enables us to anticipate future land-use changes in areas where slash-and-burn agriculture is still practiced.

Two main strategies are adopted by farmers when they face the limits of slash-and-burn systems. They combine slash-and-burn agriculture

with other land uses and activities, and they progressively transform the slash-and-burn system itself. They usually combine these two strategies, which we will detail separately here.

The Combination of Slash-and-Burn Agriculture with Other Land Uses and Activities

Slash-and-burn systems provide staple plus a broad range of other products. But they are often practiced alongside other land uses and activities, even in the absence of crisis. Fruit trees are frequently planted in proximity to dwellings, while permanent gardens of vegetable and sometimes staple crops are established on the most fertile soils. Slash-and-burn farmers typically practice hunting, fishing, and gathering and raise animals. Livestock substitutes to wild animals when hunting success is low, that is, when higher population density increases. Women (or, in some groups, men) make and sell various crafts like baskets or woven mats, an activity that requires a lot of work but not a lot of energy as it is done at home. The search for seasonal jobs and temporary or permanent outmigration are also common practices. When the fallow period reduces and slash-and-burn agricultural fields do not produce enough, all these activities, except hunting, fishing, and gathering who decrease when forest resources decline, can become the most important sources of food and income.

A frequent pattern is that when the crisis occurs, farmers move down to cultivate bottom land. Slash-and-burn agriculture is mostly practiced on hillsides because this type of land drains better, which is an asset in wet climates. Bottom land, to the contrary, is often avoided because of flooding risk and heavy wet soils. But when erosion occurs, nutrients are lost on slopes and accumulate on bottom land, which becomes increasingly attractive. To cultivate bottom land typically requires heavy labor investment, though, in order to drain the excess water or to irrigate the land, in order to escape dependence on rain and avoid flooding risk. But cultivation can then be done during the dry season, which spreads the labor burden more evenly over the year.

A second frequent pattern, which often combines with the first, is the establishment of perennial crops on eroded slopes not suitable anymore for slash-and-burn agriculture. Perennial crops are often cash crops like cocoa, coffee, palm oil trees, rubber trees, cloves, and cinnamon. This strategy is often associated with the development of infrastructure and better connection to markets.

The Progressive Transformation of Slash-and-Burn Agriculture Systems

Alongside this diversification, reduced fallow periods can trigger, or contribute to trigger, a deep transformation of the slash-and-burn systems themselves. Under a certain threshold, the fallow is too short to enable the development of woody perennials. The stumps of large trees rot progressively, and the root mat becomes less dense. Hence it becomes possible to practice paring and burning and/or to plow the land. When this situation occurs, plowing tools are usually already known, because plowing is practiced in neighbor villages with higher population density, or in one of the systems that farmers practiced already alongside slash-and-burn agriculture.

Plowing enables extirpating the roots of the most invasive remaining perennials. This cleaning of the underground through plowing constitutes, after clearing, a “second step” in the long-term process of preparing land for permanent, intensive cultivation. The field is then cleansed from both aerial biomass, which is eliminated through slashing and burning, and soil woody biomass, eliminated through short fallow and plowing. After the colonization of the forest frontier, a “second frontier,” the soil, has been opened and is ready to be exploited at greater depth, which compensates for the lower nutrient level produced by burning a short fallow. Typically, farmers then adopt a more complex and longer crop rotation. They often plant cereals, followed by or associated with legumes, followed by tubers, before leaving the plot into a short fallow dominated by grasses and other herbaceous plants. In certain condition, however (fragile soils, steep slopes, heavy rain), plowing requires improvements like terracing in order to be practiced.

As intensification proceeds, new strategies to maintain soil fertility need to be adopted. In slash-and-burn systems, nutrients are brought to the plot by fallow vegetation, which pumps them deep into the soil. They are made available to the crops in the form of ash, through burning. With short herbaceous fallow or no fallow, this nutrient supply is lost. At first, a more efficient nutrient management (crop rotation, plowing, paring and burning, zero burning) can suffice to maintain decent yield. But in the long term, a new source of nutrients needs to be provided. Typically, farmers develop animal husbandry, taking advantages of the new grazing resources of short fallow dominated by grasses, and start to use animal manure. At first, they observe that crops yield more when cultivated in a coral so they rotate corrals and fields. But with increasing pressure on land and nutrient need, they start to actively manage manure by collecting it in corrals and transporting it to fields. If animals graze in fields, this represents an improved nutrient management but not a significant net gain since nutrients are taken from grass growing on the same land as the crops. If they graze in uncultivated pastures, this represents a net gain through horizontal transfer of nutrients by animals from pastures to agricultural land, in the form of manure, which replaces the vertical transfer by fallow trees, in the form of ash Mazoyer and Roudart 2006.

Constraints to the Evolution of the System

The evolution of farming systems outlined above has been observed, with very similar patterns, in many regions of the world. It is encouraged by necessity when population density increases. But it does not automatically occur as it also faces strong constraints.

One key constraint is the low investment capacity of slash-and-burn farmers. The practice of slash-and-burn agriculture relies on bestowed natural capital. It simply requires an ax and a machete and generates a high output for a relatively low labor input, at least when long fallow can be practiced and when hunting and gathering contribute to food security. Other land uses require more efforts, to plow the land, eliminate the weeds, and proceed to land

improvements. As long as they are practiced with a hoe and other manual tools, they typically require more work for the same output. More efficient tools need to be adopted (such as a plow, a cart, and a pair of oxen to produce manure and pull these tools), or significantly higher yields need to be obtained (through the use of chemical fertilizers, pesticides, and herbicides) to render the new systems more labor efficient. The acquisition of such equipment or inputs, that is, the substitution of a human-made productive capital for the natural capital, is probably the main constraint to phasing out slash-and-burn agriculture. It is rendered difficult by the fact that slash-and-burn agriculture is often practiced in remote areas with limited connection to market and few income generation opportunities to farmers, although this is not a rule. There are many cases where slash-and-burn agriculture has been abandoned without adopting animal draft or chemical inputs, but farmer communities in this situation are usually very poor and food insecure.

The development of perennial crops, however, is an exception to this general pattern. When perennial cash crops are available and can be sold a good price, they can sustain a family with limited labor input and using a relatively small surface. As long as land is not an overly scarce resource, perennial crops can be associated with indigenous species that provide a broad range of goods and services and render the system more resilient to ecological stresses and economic shocks. Such systems, called agroforests, are developed progressively out of slash-and-burn systems and do not need significant investments. But when land becomes scarce, they tend to be abandoned in favor of more intensively managed plantations that face the investment constraints described above.

A second important constraint is the risk factor. The development of new systems creates new risks and requires the production and mastering of new knowledge in order to reduce these risks. This explains the preference of farmers to diversification rather than specialization, and for a progressive transition during which both slash-and-burn agriculture and the new system are

practiced, rather than large investments and elimination of their traditional land uses.

A third important constraint is the discount rate. When slash-and-burn systems are in a situation of crisis, food security is usually hardly achieved. In this context, investing labor for late reward is not an easy option, which often explains the reluctance to adopt conservation farming techniques.

Environmental Impact

The environmental impact of slash-and-burn agriculture is a very controversial issue, biased by political positions on both sides of the debate. Slash-and-burn agriculture requires clearing primary forest and leaving a secondary forest growing before clearing it for repeating the cycle. This clearing of forests is often criminalized by states and receive strong opposition and critique from organizations committed to biodiversity conservation, while the mosaic of primary and secondary forests that is typical of slash-and-burn agriculture landscapes is praised by social scientists and activists having sympathy for community or “traditional” ways of life.

If one escapes this political ground, the reality is in fact quite simple. Slash-and-burn farmers clear primary forests, just like any other farmers willing to grow staple crops that demand sunlight. They clear more areas to obtain a given output than farmers practicing more intensive systems, but they do not clear the land permanently. For a given population with a given level of needs, slash-and-burn agriculture landscapes may have less primary forests and more secondary forests than more intensively cultivated ones. The environmental impact of each system, for a given output (*ceteris paribus*), thus depends on the value given to primary versus secondary forests. If biodiversity is to be conserved, it would be more rationale to cultivate less land, permanently, by adopting more intensive systems: the so-called “land-sparing” model. Primary forests are indeed mosaics of primary and secondary vegetation. They are pieces of land at various

stages of vegetation development, because secondary succession occurs after the death and fall of large trees, so both early and late successional species would be conserved. Young secondary forests like those found in slash-and-burn agriculture landscapes, on the other hand, lack large stands of late successional species, because the complete secondary succession typically lasts a century or more in tropical forests.

The reality is quite simple, but not that simple, however, which puts into question the land-sparing model. The *ceteris paribus* clause makes sense if the purpose is to outline specific processes in a closed system, which is only the first step of understanding realities, which are open systems. Variables cannot be isolated from each other in the real world, meaning that at some point, the *ceteris paribus* clause needs to be abandoned if science is to inform policy makers (Pollini 2007).

In other words, the evolution from slash-and-burn agriculture to alternative systems is not simply a change from using more land to using less land for the same output. Other changes can occur, like an increase in farmers’ needs and total output. Once investments are done and the labor productivity bottleneck mentioned above disappears, output per household can be doubled or more, and benefits can be reinvested in the expansion of cultivated land. The formerly slash-and-burn agriculture landscape then becomes suddenly attractive. Outmigration decreases, while immigration increases, sometimes with the support of government incentives, and the forest frontier is pushed forward. The poorest farmers, who do not have sufficient resources to follow this path, are often outcompeted by the most economically favored segments of the population. Poor farmers become socially marginalized and move to the first line of the frontier where they continue practicing slash-and-burn agriculture with long fallows, which perpetuates the blame put on this land use, whereas the whole process was triggered by the combined effects of increasing cultivated area per farm and attracting more farmers, two frequent corollaries of intensification. In the worst case, the development of infrastructure attracts

large-scale international investors who establish plantations to satisfy a virtually infinite global demand, like palm oil plantations established for biofuel production.

In sum, the transition from slash-and-burn agriculture to alternative land uses is part of an historical process that has multiple facets and is to be considered holistically if social and environmental improvements are to be achieved. Within this broader framework, slash-and-burn agriculture can be a cause of as well as a buffer against deforestation. Moreover, beyond the issue of deforestation, it must also be pointed out that slash-and-burn cultivation in self-sufficient societies does not require a single drop of fossil fuel to be sustained, contrary to most of its so-called alternatives.

Policies

In most regions of the world where slash-and-burn agriculture is practiced, it is targeted by policy makers who aim to eliminate this practice, because of blames and prejudices regarding its environmental impact (Fairhead and Leach 1998), because of willingness to allocate forest land to other land uses and stakeholders, and because of ignorance about the context within which farmers cut trees. The domains of ignorance that characterize policy making are briefly reviewed here.

First, the proposed alternative land uses are usually designed based on the assumption that yield per acre matters, because obtaining high yield is the goal of most agronomists and extension agents working in agricultural projects. This is what they have been trained to do. The labor and investment bottlenecks and the risk and discount rate factors evoked above are usually overlooked, which leads to non-adoption of the proposed techniques, except for local elites, quite often foreigners or recent migrants, who already have some investment capacity. "Support" to slash-and-burn farmers then can favor a social differentiation or resource capture that contributes to the marginalization of slash-and-burn

agriculture farmers and the persistence of their dependence on tapping natural resources, while the "successful" farmers who adopt intensive techniques invest their income in land acquisition and encourage further forest clearing.

A second frequent mistake, or at least a counterproductive approach, is that the techniques being proposed are framed within a sustainability paradigm that assumes that resource stocks should be kept constant. It is argued, for instance, that forest biomass and the nutrient content of soils should not be reduced. This is at odd with the logic adopted by most economic agents, including smallholder farmers, who are committed to substituting resources once they are depleted, rather than maintaining their stock constant. If the shift to a new resource (B) can be achieved before the previous resource (A) is completely depleted, then the crisis can be avoided. Once resource B is adopted, resource A is relieved from pressure and can recover. This is what happens, for instance, in cases of forest transitions. If they adopted a more flexible conception of sustainability, conservation and sustainable development organizations could provide support that help farmers to shift to resource B before resource A is completely depleted. Moreover, if it was accepted that the stock of resource A does not need to stay constant, then tapping into this stock could generate the means to build resource B. Nobody knows how long a given resource can last, and certainly no resource can last forever, but within policy time frames, this point should be taken into consideration.

To illustrate this with a practical example, resource A can be land on hillsides where slash-and-burn agriculture is typically practiced. Resource B can be bottom land. Farmers often shift from hillsides to bottom land when slash-and-burn agriculture is in a situation of crisis because of short fallows. The depletion of resource A (nutrient losses through erosion) contributes to the building of resource B through the accumulation of nutrients in bottom land. If projects attempt by all means to maintain farming activities on hillsides, by designing new systems

like contour lines, improved fallow, or other technologies that farmers do not adopt because of labor, investment, risk, and/or discount rate issues, then innovation and investment opportunities can be lost, and the transition to bottom land cultivation can be hampered. If support is allocated to improving bottom land instead, by realizing investments that farmers were already envisioning (terracing, irrigation schemes, supply of equipment like animal draft, development of livestock husbandry), then the transition can accelerate. With higher support to bottom land cultivation, the shift to new land uses will be faster, and more resources will remain on slopes in the end. Land will not be degraded to the point that vegetation cannot recover, and forest fragments will remain from where the original ecosystem will be able to recolonize space. In a false paradox, hillside vegetation would recover better if nobody cared about it and supported denaturalizing further the bottom land instead.

Third, fallow land in slash-and-burn system is often considered idle land by policy makers, as reflected in the misleading term shifting cultivation. Fields do not exactly shift in “shifting” (slash-and-burn) agricultural systems. They are permanently established but alternate periods of cropping with periods of fallowing, with fuzzy boundaries between the two. Fallow land is often actively managed, through enrichment with useful trees and care of remaining cultivated perennials. It is typically managed by the same individual families who grow the crops, unless it remains uncultivated beyond the typical fallow period, in which case the plot can be reintroduced into community land. Overlooking this fact, policy makers are tempted to deny the right of slash-and-burn farmers over fallow land, which is conducive to misguided policies that further marginalize them.

How, then, should slash-and-burn agriculture be addressed by policy makers? First, it should not be criminalized or blamed and should not even be considered as a land use which, comparatively with others, deforests more land. There is quite a broad agreement that large-scale

deforestation is mostly triggered by commodity booms and large-scale agribusiness investments on forest frontiers, from the development of cattle ranching and soybean cultivation in the Amazon to palm oil production in Southeast Asia. In this context, securing the rights of local farmers practicing slash-and-burn agriculture could be a buffer against large-scale deforestation, like is securing the rights of hunting and gathering groups. Second, the transition to more intensive land uses could be favored by increasing the range of land-use options available to smallholder farmers, from access to new tools and inputs to the so-called ecological intensification. The latter has the great advantage of relying on human labor and natural capital rather than financial investments and further artificialization of the environment. But it remains doubtful whether it could maintain a satisfactory level of labor productivity, and hence a satisfactory livelihood, unless high-value products can be sold and/or fair trade markets can be captured. Smallholder farmers can be more easily seduced by productivity leaps permitted by animal draft and the use of chemical inputs than by ecological intensification. They are willing to buy more goods, send their children to good schools, access healthcare, reach middle-class livelihood, and enter into “modernity” like other citizens. There is a risk that an excessive emphasis on ecological intensification leads to denying them the right to engage more conventional, straightforward pathway to “development,” and one has to be cautious about this pitfall.

Summary

Slash-and-burn agriculture is a land use that represents an early step in agricultural history. It is practiced in locations where forest resources are still abundant. It typically implies the conversion of primary forests into a mosaic of secondary forests at various stages of development, but not the definitive elimination of forest. Primary forest clearing occurs progressively, though, as a way to maintain the same fallow period in spite of

population growth. When no primary forest remains (or when the remaining primary forests are all protected, by local customs or conservation policies), the fallow period reduces, secondary forests eventually disappear too, and new techniques emerge or are adopted. The natural capital is progressively replaced by man-made productive capital, or the system enters into a crisis, depending on whether the constraints to these changes can be levered. In theory, the new land uses that emerge enable preserving more forest, because they require the use of less land for producing the same output. In practice, they trigger or are accompanied by a series of more radical changes like the development of infrastructure, migrations, financial investments, and new consumption patterns, which typically provoke larger-scale deforestation.

In spite of this, slash-and-burn agriculture continues to be blamed for being the main cause of deforestation. Shortsighted policy makers fail to contextualize the act of cutting trees and are biased by modernization myths that see slash-and-burn agriculture as a primitive land use. Slash-and-burn agriculture is a primeval land use in the sense that it preceded others in many regions of the world. But no value judgment should be attached to this statement. At a time of increasing doubts about mainstream development pathways, slash-and-burn agriculture should be seen as an opportunity not to fall into productivist, unsustainable models. But this is not to say that slash-and-burn farmers should remain trapped with this “primeval” land use. They have the right to evolve and change, as did other societies before. In our globalized society, they should be given access to the same range of economic and technical options that are made available to other farmers.

In between the quest for sustainability and attempts to escape from poverty, smallholder farmers practicing slash-and-burn agriculture must be paid a great attention as they will continue to be key targets of conservation and development programs. If proper decisions are to be taken, that is, if they are to be given the possibility to control their future and increase their production while generating public goods, they will

have to be listened to, away from prejudiced views that criminalize or idealize their choices, depending on which political agenda frames the debate.

Cross-References

- [Biodiversity](#)
- [Brazilian Agriculture](#)
- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Economy of Agriculture and Food](#)
- [Food Security in Systemic Context](#)
- [Political Agronomy](#)
- [Resource Conflict, Food, and Agriculture](#)
- [Sub-Saharan African Agriculture](#)

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Slow Food

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Introduction

Slow food is a recent food movement. Unlike other food movements, however, such as the campaigns to “eat organic” or “eat local,” slow food is closely associated with and influenced by the programs and policies of an international organization which is itself called “Slow Food” founded in Europe in 1989 (Irving 2008; Malatesta et al. 2006). One need not, however, be an official member of Slow Food to follow the movement’s ethos. Slow food is primarily a rejection of fast food and fast-food culture, and its followers claim that food that is “slow,” that is, food that is carefully prepared using minimally processed ingredients according to time-honored cultural traditions, is superior in taste and quality to the highly processed, generic, and standardized fare that typifies much of the fast and processed food industries. Adherents of slow food also maintain that food is more properly enjoyed when it is consumed at a leisurely rate in the company of others, as opposed to the frenetic and solitary eating that is motivated by fast-food culture.

Since its inception, slow food has inspired similar movements beyond the purview of food, and its core principles have been applied to things such as local economies and urban planning (Parkins and Craig 2006). So, for example, proponents of Slow Cities (*Cittaslow*) encourage the implementation of measures that would promote “slow living,” restrictions on vehicular traffic, improved park systems, etc.

As for slow food, its followers are particularly concerned with the quality of food, slow vs. fast, but they also express interest in other issues related to food, in particular, environmental factors related to food production and worker rights.

This wider array of concern is especially evident in the organization Slow Food which in its platform promotes food that it describes as “good, clean, and fair” (Malatesta et al. 2006; Petrini 2005). While the movement itself offers no explicit philosophical or ethical foundation for its various practices, parallels can be drawn between its position regarding food and food consumption and the ethical theories defended by figures such as David Hume, Epicurus, and Aristotle. The movement, however, has also been subject to a variety of criticisms and has been accused, among other things, of being elitist and anti-environmentalist.

Philosophy and Ethics. Identifying a complete and coherent set of ethical principles underlying slow food is difficult insofar as there are informal followers of the movement and an official organization, all of whom do not necessarily defend or place an emphasis on the same set of values. Insofar as the organization plays an influential role in guiding the philosophy and practices of slow food, attention will be focused in what follows on the ethical motifs underlying Slow Food.

According to its mission, Slow Food defends three central values in relation to food, maintaining that it should be “good,” “clean,” and “fair.” “Good” refers to food’s quality, its flavor and taste. “Clean” food is food that is produced using sustainable farming and production practices that do not cause unnecessary harm to the environment. “Fair” food is food that reflects a commitment to social justice and to fair compensation for farmers and food producers.

Good food. Slow Food’s concern with what they understand as “good” food has been dominant in the movement from its very beginning. As its name implies, Slow Food perceives itself as a response to “fast food” and “fast-food” culture. For the founders of Slow Food, the problem with “fast food” and the “fast life” within which it is consumed is not necessarily the speed with which food is produced per se (i.e., there can be “good” fast food in their sense) but its standardization and homogenization, features of food that, they believe, mark much of contemporary food culture

and industry. Food in a “fast-food” society is, they argue, transformed from something to be enjoyed and savored in the company of others to something that merely serves to sustain us physically while eaten quickly on the go. Moreover, the rise of industrial and global agriculture they maintain has been accompanied by a concomitant fall in the diversity of food as food varieties and local food traditions vanish in the face of things such as monoculture and corporatization.

For defenders of slow food, fast food thus prevents people from experiencing true pleasure in their food. They view fast food as basically bland and tasteless, highly processed and standardized fare, produced with quantity in mind over quality, lacking any real connection to a particular culture or place, designed to be eaten quickly and mindlessly. Recovering true gastronomic pleasure, they believe, can be achieved by pursuing food that is, in Slow Food’s terms, “good.”

“Good” food, according to Slow Food, is food that is produced with quality in mind, food that is delicious, distinctive, and flavorful. Proponents of Slow Food recognize that taste in food is subjective and that different individuals will ultimately find enjoyment in different foods and flavors, but they contend that, in general, certain food and food products can be identified as “good” (Petrini 2005). These would be foods that produce pleasant taste sensations and are, generally, as “natural” as possible, respecting the product’s original characteristics. Such criteria, they contend, rule out much “fast” or industrialized food insofar as it is often flavorless and highly processed.

Slow Food’s contention that judgments about “good” food can be made despite the subjective nature of taste recalls the position on aesthetic judgment defended by David Hume (1963). For his part, Hume also acknowledges that, when it comes to matters of taste, there exists a variety of opinion as to what different individuals and different cultures deem to be beautiful or good. This leads him to recognize the distinction between objective matters of fact and subjective feelings or sentiments about objects, where beauty, it would seem, is entirely in “the eye of

the beholder.” Nevertheless, Hume maintains that general standards in regard to aesthetic taste can be defended, that we can justifiably deem some things to be superior to others, and that we make these kinds of aesthetic judgments all the time.

This ability to pass aesthetic judgment, Hume argues, is made possible insofar as all humans as humans share a “universal structure” that typically leads them to be pleased by certain experiences and displeased by others. This does not mean that everyone will always appreciate the same things. The proper appreciation of an art object, according to Hume, requires certain conditions, e.g., serenity and attentiveness, but it also requires, in his estimation, the possession of “delicacy” or “sensitivity,” the ability to discern or recognize the aesthetic traits or features in a given object. Such aesthetic sensitivity, Hume argues, can be developed in individuals by training and practice. Repeated exposure to a variety of artworks, he contends, can help individuals gain the sensitivity required for a discerning taste.

Following Hume, some sense can be made then of Slow Food’s defense of “good” food. While acknowledging the fact that not everyone is going to be drawn to certain tastes and flavors, followers of Slow Food maintain that we can nevertheless judge certain foods to be “good” or superior to others, e.g., artisanal cheeses over processed cheese food. Recognizing such superiority, however, requires a certain amount of discernment, and the focus on taste education in Slow Food, the “Taste Workshops” it conducts with both children and adults, can be understood in these terms, as an attempt, not only to acquaint individuals with different foods and a variety of flavors but to provide them with the training and experience by which they can identify “good” foodstuffs.

While “good” primarily refers, in Slow Food’s analysis, to the quality, taste and flavor of food, the movement also emphasizes the settings in which food is prepared and consumed. Thus, defenders of Slow Food not only deride the quality of “fast food” but the ways in which such food is designed to be eaten, mindlessly, quickly and, often, in isolation from others. Thus, along with

the pleasure of “good” food, slow food stresses the pleasure of conviviality or commensality, the joy of sharing food in leisurely company with others. Local chapters of Slow Food are called “convivia” (from the Latin for “feast” or “banquet”) for this very reason.

In upholding the enjoyment and pleasure of “good” food, defenders of Slow Food seek to counter the asceticism that, they believe, characterizes both much of Christian society and traditional leftist politics, wherein the pleasures of eating are often derided for being either sinful or bourgeois (Petrini 2001, 2005). The approach to pleasure embodied in Slow Food harkens back to the hedonic philosophies put forth in ancient Greek thought and, in particular, the position defended by Epicurus and the Epicureans. For Epicurus, happiness, understood as pleasure, represents the ultimate and highest intrinsic good in life, and so, he argues, we should strive to experience as much pleasure in life as is possible (Epicurus 1964). In promoting the pursuit of pleasure, however, Epicurus does not advocate profligacy or base hedonism, arguing that indulging in too many physical pleasures will ultimately result in excessive pain. Rather, Epicurus maintains that the “good life” is ultimately a life of tranquility, attained by pursuing simple and modest pleasures, including those of good food and friendship.

Proponents of Slow Food construe of pleasure and the pursuit of pleasure in terms similar to those found in Epicurean thought. The pleasures of food and company are extolled as central features of the “good life.” Such pleasure, however, should not be pursued to excess. Borrowing a notion from the Renaissance humanist Bartolomeo Scappi, figures in Slow Food like to speak of “*honesta voluptate*” or “sober pleasure” (Petrini 2009). This is a pleasure that, in contrast with gluttony, is aware of its limits and is pursued in moderation.

Parallels can also be drawn between the vision of the “good life” put forth in Slow Food and that defended by Aristotle’s virtue ethics (Aristotle 1999). Like Epicurus, Aristotle maintains that happiness or eudaimonia is the end of life. For his part, Aristotle argues that such fulfillment can be attained by practicing the

virtues, habitual traits of character, that, avoiding excess and deficiency, adhere to the “golden mean.” As does Epicurus, Aristotle rejects a life of pure hedonism which he likens to a life for “grazing animals” (Aristotle 1999). Nevertheless, Aristotle does not advocate asceticism, maintaining that physical pleasure is a critical ingredient of the “good life.” Such pleasure, however, must be pursued in moderation and the relevant Aristotelian virtue as regards the pleasure of food is temperance. Likewise, Aristotle also maintains that friendship is a central feature of the good life.

In promoting the value of pleasure, Slow Food nevertheless seeks to counter the elitism and gourmandism that they believe marks that tradition, arguing that “the right to pleasure” is one that is universally shared and open to everyone (Petrini 2009). Despite their reference to the notion of “rights,” however, Slow Food does not appear to have any fully developed sense of political rights, and at best, the “right to pleasure” can be understood as a right in the negative sense. When alluding to rights, Slow Food seems to conceive of them more in terms of consumer rights, as opposed to civil rights, and this may explain the organization’s reluctance to engage in and seek substantial political and economic reform.

Clean food. As Slow Food has evolved, its concerns have broadened such that its initial focus on good food and gastronomic pleasure is now accompanied by an interest in the environment and environmental issues. So, along with “good” food, Slow Food promotes food that it defines as “clean” (Petrini 2005). This is food that is produced and grown sustainably, in ways that protect and respect the environment, and is prepared in ways in which processing is as limited as possible. For defenders of Slow Food, there is a close connection between “good” and “clean” food as food that is “clean” often tastes better.

In the estimation of Slow Food, judging whether food is “clean” requires scientific expertise, but they generally believe that the use of chemical pesticides and fertilizers should be avoided, that intensive, highly industrialized

modes of agriculture should give way to traditional farming practices and techniques, and that local plant varieties and breeds should be given preference over monocultures and standardized varieties and breeds. Slow Food also opposes the use of genetically modified organisms. Slow Food is not opposed to the transportation of food but argues that the environmental implications of food transport should be kept in mind when determining whether food is “clean” or not.

In combining their interest in the flavor of food with its environmental impact, Slow Food likes to describe their culinary philosophy as “eco-gastronomy,” a pursuit of gastronomic pleasure that is informed by environmental awareness (Petrini 2005). Given the principles of “eco-gastronomy,” the follower of Slow Food is not necessarily going to limit themselves to eating organic food or practicing locavorism. While organic food may be “clean,” it may not be “good,” and it is not clear, according to Slow Food, that food must be organic to be “clean.” When it comes to locavorism, Slow Food does promote local food varieties and traditions as evidenced by its Ark of Taste and Presidia programs (Irving 2008; Malatesta et al. 2006). However, Slow Food’s interest in local foods is not motivated by concerns regarding “food miles” or the environmental impact of transporting food great distances but by the impact that the loss of local foods, due to homogenization and standardization, has on gustatory pleasure. In fact, many of Slow Food’s projects and initiatives involve seeking broader, international markets for local products.

In discussing Slow Food’s notion of “clean” food, it is perhaps appropriate to point out that the organization has little to next to nothing to say about issues concerning animal rights or animal welfare. While Slow Food espouses a universal “right to pleasure,” this right is not understood as extending to nonhuman animals. And while Slow Food may be critical of certain practices in regard to animal husbandry, factory farming, CAFO’s, etc., their concerns are more a product of the quality of such foods, their “goodness” in their terms, than they are response to any animal pain or suffering they may cause.

Fair food. As with “clean” food, Slow Food’s defense of “fair” food has evolved over time as the movement has grown. According to Slow Food, “fair” food is that involves equitable and proper remuneration for farmers, farm workers, and food producers (Petrini 2005). In this regard, Slow Food’s interest in “fair” food parallels the recent fair-trade movement. When discussing “fair” food, leaders of Slow Food often refer to what they call “virtuous globalization” (Petrini 2009). As noted above in reference to locavorism, Slow Food is not, in principle, opposed to the transport of food over long distances and welcomes globalized food markets. It is critical not of globalization itself but of tendencies in globalization toward standardization and homogenization.

The Slow Food movement is not inherently anti-capitalist and much of its work focuses on securing markets for what it believes are high-quality foodstuffs. It believes it can achieve this by, on the one hand, educating consumers and raising awareness in them, through programs such as “Taste Workshops” and food fairs, about “good” food and, on the other hand, by forming cooperative networks among small-scale producers. In its activities, Slow Food eschews tactics such as boycotts and direct action as utilized by groups like José Bové’s Confédération Paysanne.

In summary, the ideal eater for Slow Food is someone who possesses a series of virtues. They appreciate good food in moderation while at the same time being cognizant of the impact that their food choices have on the environment and, guided by a sense of justice, respect the rights of those involved in food production.

Criticisms. This somewhat eclectic collection of values and virtues has led some to criticize Slow Food of being guilty of certain contradictions (Chrzan 2004; Donati 2005; Gaytán 2004; Jones et al 2003; Labelle 2004; Laudan 2001; Lotti 2010). Some critics argue, for example, that there is a conflict between Slow Food’s promotion of “good” food and its concern for “clean” food insofar as raising the demand for certain products is environmentally unsustainable. Similarly, some critics maintain that while Slow Food

avows that pleasure is a universal right and that food should be “fair,” the movement’s reluctance to demand substantial political and economic reform opens the group up to charges of elitism, especially insofar as the typically expensive foodstuffs it seeks to promote remain beyond the reach of many consumers. It would appear that the future success of Slow Food depends on its ability to respond to these criticisms and articulate a coherent, ethical vision.

Cross-References

- [Epicureanism and Food](#)
- [Virtue Theory, Food, and Agriculture](#)

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Sub-Saharan African Agriculture

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Synonyms

Africa; Agriculture

Introduction

Agriculture employs two-thirds of Sub-Saharan Africa's (SSA) workforce and a majority of the continent's poor (IFPRI 2004). As a result, agricultural productivity growth offers a singularly powerful lever for raising incomes and reducing poverty across the continent (Thirtle et al. 2003; de Janvry and Sadoulet 2010; Christiaensen et al. 2010). Recent estimates from Kenya and Rwanda, for example, indicate that a 1 % increase in national income coming from the agricultural sector leads to three to four times as much poverty reduction as comparable income gains in nonagricultural sectors of the economy (Diao et al. 2012).

Agricultural growth is, likewise, a key driver of economic growth and structural transformation. Because agriculture accounts for 25 % of Sub-Saharan Africa's gross domestic product, and up to 50 % in poor countries, productivity gains in agriculture translate directly into broad-based per capita income gains (IFPRI 2004; Diao et al. 2012). Over the long run, improved agricultural technology, agronomic practices, and

Sub-Saharan African Agriculture, Table 1 Productivity differentials across regions

	Sub-Saharan Africa	Developing Asia	Latin America
Value of agricultural production (US\$)			
Per agricultural worker	315	457	3,018
Per hectare	140	1,111	381
Cereal yields (tons/ha)	1.4	3.1	3.9

Source: FAOSTAT (<http://faostat.fao.org/site/339/default.aspx>)

marketing systems will enable a minority of well-managed smallholder farms to transition into high-value commercial agriculture. In contrast, the majority of today's smallholder farmers will follow an alternate pathway, as elsewhere, gradually exiting agriculture in favor of nonfarm occupations. But in Africa, as in other settings before, this exit will require prior broad-based agricultural productivity growth on small family farms (Lipton 2005). Even the continent's many noncommercial, primarily subsistence farmers require early, sustained productivity gains in agriculture so they can free their children from farm labor obligations, generate the surpluses necessary to send them to school, and help them transition into successful nonfarm career trajectories over the next generation (Chapoto et al. 2013).

Despite the importance of agricultural growth to African economies and to the welfare trajectories of its people, farm productivity remains generally low in SSA. Labor productivity, as measured by the value of agricultural output per worker, stands at roughly two-thirds of the level prevailing in developing Asia. Land productivity, as measured by cereal yields, lies closer to one-half of the levels attained in Asia and Latin America (Table 1).

Why has African agriculture underperformed? In part, Africa's historical land abundance has allowed African governments to underinvest in agricultural research, extension, and other key drivers of agricultural productivity growth. For many decades, African leaders have spent half as

much (per \$100 of agricultural output) as Asian countries on the core public goods that drive agricultural growth – rural roads, irrigation systems, agricultural research, and extension (World Bank 2007). Donors have, likewise, contributed to low agricultural spending, cutting aid flows for African agriculture in half, from over US\$2 billion to around \$US1 billion per year between the mid-1980s and the early 2000s (GAO 2008).

Recent world events have restored interest in Africa's agricultural potential. Back-to-back world food crises – in 2008 and 2011 – have focused the attention of African leaders, donors, and outside investors on the considerable potential and importance of Africa farming. Food riots from West Africa to Mozambique have reminded African political leaders that food security remains critical for political stability, lending new urgency the African leaders' Maputo commitment of 2003 to increase their budget allocations for agriculture from 6 % to 10 % of total spending as part of the AU's Comprehensive Africa Agricultural Development Programme (CAADP) (AU/NEPAD 2003; Fan et al. 2008). Donors have likewise placed agricultural growth at the top of the aid agenda. After two decades of neglect, when global aid for African agriculture fell roughly in half, the 2009 Group of Eight (G-8) meeting in L'Aquila, Italy, committed \$20 billion over 3 years for agricultural development and related efforts to reduce world hunger (G-8 2009; G-20 2010). Private investors have also piled onto the bandwagon. In 2009, large agribusiness investors laid claims to nearly 40 million hectares of African farmland, greater than the agricultural land of Belgium, Denmark, France, Germany, the Netherlands, and Switzerland combined (Deininger and Byerlee 2012). Highly publicized large-scale land investments in Africa by institutional investors have focused world attention on Africa's considerable unexploited agricultural potential and on the ethical issues involved in allocating these valuable resources among domestic and international constituencies.

As policy attention returns to focus on African agriculture, this entry aims to explore key opportunities and key challenges facing African

farmers and policy makers. The entry begins by highlighting two key opportunities that will likely drive future interest and investments in Africa's agricultural and food system growth. Discussion then turns to a series of structural and ethical challenges that policy makers and stakeholders will need to address in order to realize Africa's considerable yet under-exploited agricultural potential.

Seizing Opportunities

Growing Urban Markets

Africa's food markets will grow rapidly over the coming decades. Projections suggest that Africa will become a majority urban continent by 2030 when urban population surpasses that in rural areas (UN 2012). As a result, marketed food shares will grow more rapidly than overall population. Consumption patterns will also change dramatically. Rising urbanization and growing per capita incomes will translate into dramatically increased demand for processed, packaged, and prepared foods. Because of increasing urban demand for marketed foods, the post-farm segment of Africa's food systems will grow twice as fast at farm production over the coming 40 years (Haggblade 2011). Demand for nutrient-dense high-value foods such as dairy products, meat, fresh fruits, and vegetables will increase as well. Food products, which accounted for about three-fourths of total agricultural output in the year 2000, will increasingly dominate agricultural markets (Diao and Hazell 2004). As a result, domestic and regional food markets within Africa offer farmers their largest single market opportunity over the coming decades.

Spatially, growing domestic food markets will trigger rapid growth in the rural towns that house assembly markets linking agricultural production zones with major urban centers. In terminal markets, the often uncontrolled growth of Africa's large cities rapidly engulfs surrounding peri-urban zones, while growing marketed volumes and commercial traffic quickly outgrow the existing capacity of urban transport arteries and market infrastructure. As a result, early

investments in urban planning, zoning, road quality, and urban food market infrastructure and management systems can significantly improve the efficiency of urban wholesale markets, reducing losses and improving sanitation and public health. A focus on market improvements in Africa's rapidly growing secondary cities offers early opportunities for quick wins.

Cross-border flows of food commodities will, likewise, assume increasing importance as Africa's urban food markets grow. In part, the growing opportunities for intra-African regional trade arise because the partition of Africa has left 25 % of its countries landlocked. Moreover, arbitrary boundaries established during the colonial period result today in complex jigsaw puzzle of political borders that often separate breadbasket regions from the deficit market they would most naturally serve (Haggblade 2013). Livestock surpluses from West Africa's Sahel serve coastal markets across the region, while South Africa's consistent maize surpluses serve intermittently deficit markets throughout Eastern and Southern Africa. These complementarities motivate growing interest in knitting together intra-African agricultural markets through regional trade agreements and strategic development corridors (ECOWAS 2004; Hazell 2012; World Bank 2012). Expansion of the East African Community (EAC) in 2007 provides a recent example of growing African interest in regional economic integration.

Supply Responsiveness: Surplus Land, yet Growing Land Pressure in Communal Areas

Historically land-surplus, Sub-Saharan Africa today contains 45 % of the uncultivated potential cropland in the world (Deininger and Byerlee 2012). The continent's 200 million hectares of uncultivated, unforested potential cropland roughly equals the 210 million hectares currently farmed. Potentially, African farmers can double cropped area. These large blocks of underutilized land have triggered a worldwide land rush since the first world food crisis of 2007–2008, as large agribusiness firms have scrambled to secure access to fertile land. In 2009 alone, African governments allocated 39 million hectares of

cropland to large institutional investors (Deininger and Byerlee 2011).

Africa's generally egalitarian land distribution and low levels of rural landlessness have historically provided a broad safety net for its rural populations. Unlike large Latin American countries, where fewer than 15 % of farmers control over 80 % of cropland, large farms of over 500 hectares control at most 5–10% of cropland in most SSA countries (Lipton 2012). The Republic of South Africa and other settler economies in Kenya, Rhodesia, and Zambia are the notable exceptions due to historical policies providing preferential treatment and special land allocations for large farms. In the presence of growing demographic pressure over the past four decades, average farmland per capita in communal areas has fallen by about 40 % (World Bank 2007; Eastwood et al. 2010; Jayne et al. 2012). Paradoxically, Africa's dual land tenure system has resulted in growing land pressure inside communal areas while at the same time governments are allocating large blocks of new land, outside the communal areas, to large institutional investors.

Given current low yields and surplus land, African farmers can potentially unleash an enormous agricultural supply response. Moving from yields of 1 ton per hectare to 2 tons is quite feasible (InterAcademy Council 2004). Renewed investments in agricultural research, extension, regional input supply platforms, and rural roads provide the key to closing this yield gap.

The second key ingredient for enabling this supply response revolves around land consolidation in communal areas and the opening up of new lands in ways that facilitate farmer transitions from small-scale holdings in communal areas to medium and large farms on existing or newly developed state lands. Much of the recent furor surrounding "land grabs" by large institutional investors revolves around ethical concerns, particularly the perception that outsiders may be receiving special access to large land blocks, while progressive smallholder farmers in communal areas do not enjoy comparable opportunities to graduate to larger-scale farming (Deininger and Byerlee 2011). Several possible models exist for making new farmland available

to successful smallholders. Development of new farm blocks with roads, electricity, and communications infrastructure and with mixed farm sizes offers one model under which large farms serve as anchor tenants enabling cost-effective recovery of initial infrastructure investments while at the same time medium and small farms relieve pressure on communal lands by providing outlets for the more commercially oriented smallholders to grow. Together, investments in agricultural productivity and improved land allocation and tenure systems offer prospects for unleashing a substantial supply response from African farmers.

Confronting Key Challenges

Small Countries

Africa faces an endemic small-country problem. Sub-Saharan Africa houses 49 countries, half with populations under ten million. The continent's patchwork of highly arbitrary, inherited political borders constrains agricultural growth in several key ways: (1) hampering technology transfer and disease control; (2) cutting the continent's many breadbasket zones from the cross-border markets they would most naturally serve; (3) increasing transport and transaction costs that, in turn, lower farmgate prices and raise input costs such as fertilizer and seed; (4) and limiting sale economies in research, input supply, and output marketing (Haggblade 2013).

Research and development on improved agricultural technologies remains critical for accelerating agricultural growth. Yet new agricultural technologies spread slowly in Africa where multiple small countries partition common agroecological zones. West Africa's root crop zone, for example, cuts across ten different countries while its millet belt transits seven. As a result, differing languages, phytosanitary controls, and seed certification processes at each border constrain the free flow of new technologies. In addition, agricultural pests and diseases – such as cassava mealybug, trypanosomiasis, and foot and mouth disease – powerfully affect agricultural productivity. Because these pests easily cross political

borders, carried on the wind and wild animals, individual countries face chronic difficulties in raising farm productivity in the absence of effective regional collaboration.

Equally constraining, political borders frequently separate Africa's many surplus food production zones from cross-border deficit markets they would most naturally serve. They separate surplus millet and sorghum producers in southern Mali and Burkina Faso from deficit markets in half a dozen surrounding countries; surplus maize grown in South African from deficit markets throughout southern and eastern Africa; breadbasket zones in northern Mozambique and southern Tanzania from intermittently deficit markets in Malawi, Zimbabwe, and eastern Zambia; and livestock exporters in Mali, Mauritania, and Niger from coastal markets across West Africa.

The resulting high transaction costs restrict trade flows, raise transportation costs, disrupt market signals, and reduce farmer incentives to expand food production in breadbasket regions. Poor perimeter infrastructure and a high density of border controls contribute to exceptionally high transport costs in Africa, roughly four times higher per ton kilometer than in other developing regions (World Bank 2010). Along major West African trade corridors, the informal rent seeking that accompanies cross-border transactions results in cattle traders paying twice as much for cross-border shipments of cattle as for domestic transportation, despite better transportation infrastructure (Borlaug 2012). Similarly, analysis of food price differentials along the Democratic Republic of the Congo-Rwanda border suggests that border controls enlarge spatial price spreads in food prices by the equivalent of a staggering 1,600 km in market distance (World Bank 2012). These high transaction costs, in turn, reduce farmgate prices, raise input costs, and increase consumer prices in cross-border markets.

Economies of scale offer the potential to lower unit costs of most agricultural inputs, including electrical power, banking, insurance, transport, communications, agro-processing, and fertilizer distribution. But, conversely, diseconomies of scale result when a constellation of separate,

small countries must administer, equip, and staff individual national power grids, research and agricultural education systems, and agribusiness networks. Given the considerable economies of scale in electric power generation, small African countries pay electric generation costs roughly double what would be necessary under large-scale power plants, regional power pools, and regional power-sharing arrangements (World Bank 2010). Similarly, prices of imported fertilizer increase roughly 30 % under the current patchwork of multiple small-country markets and small lot purchases compared to what would be attainable under regional systems of bulk fertilizer imports coupled with intra-Africa regional trade (Gregory and Bumb 2006; Morris et al. 2007). Economies of scale also exist in agricultural research and education, where investments in specialized staffing and equipment all become possible. “Because of small country size, agricultural research systems in Sub-Saharan Africa are fragmented into nearly 400 distinct research agencies, nearly four times the number in India and eight times that in the US. This prevents realizing economies of scale in research” (World Bank 2007, p. 168). For Africa’s many small countries, “Very often, the only viable – and efficient – solution is regional collaboration” (Beintema and Stads 2011, p. 28).

In general, feasible solutions to the agricultural inefficiencies embedded in Africa’s patchwork of small countries revolve around regional collaboration in scientific research, education, trade, power generation, and corridor development programs (Haggblade 2013).

Sustainable Intensification

In past generations, Africa’s agricultural growth has relied on area expansion, while farmers have maintained soil fertility through shifting cultivation, natural fallows, and soil mining. Low rates of fertilizer application – less than 10 kg/ha in Africa compared to 100 kg in Asia – have led to decades of soil mining, generating annual nutrient losses of over 20 kg of nitrogen, 15 kg of potassium, and 2.5 kg of phosphorus per hectare from African soils (Smaling et al. 1997; Morris et al. 2007).

Looking forward, this system will become increasingly unsustainable. Continued demographic pressure on farmland, particularly in communal areas, will stimulate incentives to intensify farm production. These growing land pressures have given rise to a growing body of research and experimentation on alternate methods for sustainable soil fertility management (Sanchez et al. 1997; Conway 1999; Pretty and Hine 2001; Morris et al. 2007; Haggblade et al. 2010). Most of these efforts involve increased doses of mineral fertilizer coupled with improved soil and water management practices, typically involving some combination of water harvesting, dry season minimum tillage, crop residue management, leguminous crop rotations, organic soil amendments, and short, managed fallows with selected leguminous shrubs.

In the past, most agricultural research in Africa has focused on breeding improved varieties of crops and livestock and delivering improved input packages to farmers. In the future, improved agronomic practices will become increasingly important. Given the diversity of farming conditions prevailing in rural Africa, future farm technology development will need to include site-specific adaptive research coupled with strong farmer involvement in design and testing.

Changing Structure of Agricultural Education and Research

Increasing urbanization and changing food consumption patterns hold important implications for the human skills required to manage Africa’s changing food systems. To scale up processing of local foods such as cassava, maize, sorghum, yam, and banana from artisanal to industrial scales, the food industry will need to undertake research on the biochemistry of basic food fermentations and on nutritional outcomes under alternate processing and packaging technologies. To serve increasing demand for packaged, processed, and prepared foods, Africa’s future food system will require a steady flow of trained scientific and technical manpower trained in the science of increasingly input intensive farm production, feed industries, storage systems, supply

chain management, and food processing industries (Haggblade 2011).

In response, Africa's agricultural education and research institutions will need to adapt in order to effectively serve this changing food system. In the past, Africa's agricultural universities have trained primarily extension staff and researchers for the public sector. In the future, they will need to prepare students for private sector employers in post-farm segments of the supply chain. Africa's agricultural research and education institutions will increasingly need to build expertise in the post-farm areas of food processing, storage, food biochemistry, and food safety in order to prepare students with skill sets required by the continent's rapidly expanding private agribusiness firms. This institutional double pivot – from public to private sector clients and from on-farm to post-farm segments of the food system – will require a major shift in faculty skill sets, in laboratory facilities, and in systems for actively engaging with private sector employers in the food system (Minde 2012).

Financing the Public Goods Required for Agricultural Productivity Growth

African governments have historically underinvested in the public goods that drive productivity growth in agriculture – rural roads, irrigation systems, agricultural research, education, and extension. While transforming agricultural countries in Asia and Latin America have invested 10 % of agricultural GDP in agricultural support institutions and rural infrastructure, African governments have spent less than half as much over many decades (World Bank 2007, p. 41). During the early years of their Green Revolution, India and other Asian countries spent 10–20 % of their total government budgets on agriculture, investing heavily in agricultural research, extension, agricultural education, irrigation, and rural roads (Lipton 2012; Hazell 2012). In contrast, African governments currently spend an average of only about 6 % of their budgets on agriculture and livestock. As a result, over the three decades between 1970 and 2000, Africa's spending per agricultural scientist fell roughly in half (Beintema and Stads 2006).

Given the high returns to public investments in agricultural research, rural roads, and related public goods, African leaders will need to substantially increase the quantity and quality of their agricultural spending (Fan 2008). While a handful of African governments have delivered on their Maputo commitment to increase public investments in agriculture, most have not yet done so (Fan et al. 2008).

Summary

Agricultural growth over the next generation will be critical to Africa's efforts to accelerate economic growth and achieve broad-based poverty reduction. But where will the political will come from to fund regional agricultural research and regional trade corridors; reform agricultural research, education, and extension systems; and finance the additional public goods necessary for driving agricultural productivity growth? Skeptics might argue that in the year 2013, 10 years after the AU's commitment to raise funding for agriculture from 6 % to 10 % of total spending, only a handful of African governments have met this goal. Donor commitments of additional billions in funding for African agriculture have likewise faltered since 2009, in the face of an international financial crisis, recessions in the major donor countries, and severe budget crises in Europe and the USA. As a result, Africa's public sector underinvestment in agriculture persists.

In contrast, the private sector has responded with alacrity to rising food and energy prices by investing heavily in African farmland. This new scramble for African farmland by large domestic and foreign investors has raised alarm bells and elicited considerable press coverage in Africa and abroad. Many observers fear that large estates may displace opportunities for commercial smallholders to expand while at the same time diminishing rural employment opportunities through premature mechanization. These highly publicized political and ethical debates may, nonetheless, prove productive if they spur public sector action and motivate African

governments and donors to deliver on their prior commitments to agriculture.

African governments and donors, diverted by recent recessions, political turmoil, and budget crises, now have the opportunity to restore their funding commitments to agriculture, thereby enabling Africa's farmers to seize the considerable opportunities available in Africa's rich natural resource base and growing regional markets. Looking forward, a program of vigorous investment in the public goods that drive agricultural productivity growth and market development offers Africa its best chance for rapid, broad-based poverty reduction.

Cross-References

- [African Food Security Urban Network \(AFSUN\)](#)
- [Conservation Agriculture: Farmer Adoption and Policy Issues](#)
- [Farms: Small Versus Large](#)

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Substantial Equivalence

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Synonyms

Equivalence of GM and non-GM foods

Introduction

The expression “substantial equivalence” stands for a key concept introduced to evaluate the risks and the means of production and consumption of novel foods. In particular, the concept has famously been employed to evaluate the risks for human health of consuming genetically modified (GM) foods, that is, of genetically modified organisms raised for human consumption as well as foods that contain these organisms as ingredients (cfr. Andrée 2007; Gupta 2013; Shahin 2007). In a nutshell, that the GM food is substantially equivalent to its non-GM (“natural”; see entry on “► [Metaphysics of Natural Food](#)”) counterpart is an important reason to regard the GM food as safe to be consumed.

For instance, if a variety of GM corn is substantially equivalent to the non-GM corn variety from which it was engineered, then the GM corn is likely to be considered as safe to be consumed as the non-GM counterpart. Derivatively, and more generally, the *doctrine of substantial equivalence* holds that, from the perspective of human health, GM foods are as safe to be consumed as their non-GM counterparts.

The doctrine has been endorsed by a number of agencies worldwide, starting with the United States Department of Agriculture and the United States Food and Drug Administration; other notable endorsements include the Canadian Food Inspection Agency, the Food and Agriculture Organization of the United Nations, the World Health Organization, and the Organization for Economic Co-operation and Development. Although the doctrine owes its name and makes reference to two eminently metaphysical concepts, namely, substance and identity, metaphysicians devoted little or no attention to the underpinnings of the doctrine.

The Doctrine of Substantial Equivalence

GM foods constitute a particularly interesting category of *novel foods*. Their novelty, indeed, stems from their different genetic makeup. As the modification of a genome takes place in a laboratory and is thus the product of human intellectual ability and artifice, the resulting novel organism is oftentimes awarded a patent, in recognition of its intellectual specificity. Questions arise, however, regarding the potential threats to human health of the novel food. For instance, it is unclear whether the novel genome will alter the production of the nutrients provided by the food, such as proteins, amino acids, or carbohydrates. It is also unclear whether the novel food will contain vitamins, minerals, potential toxicants (e.g., solanine in potatoes, erucic acid and glucosinolates in canola), and allergenic proteins. Thus, before introducing a novel food into a marketplace, competent food safety agencies need to assess the food's risks to human health. It is at this stage that the doctrine of substantial equivalence finds employment.

To regard a GM food as substantially equivalent to its counterpart, a number of properties of the novel food are examined. If the properties are found to be fundamentally identical to the corresponding properties of the non-GM counterpart, then the food is regarded as safe, from a nutritional point of view. The GM food and its non-GM counterpart are "equivalent," hence,

because they are *identical in some key nutritional properties*. They are "substantially" equivalent, instead, because not all of the foods' properties are taken as relevant to justify the equivalence claim: only those properties that are fundamental from a nutritional point of view are salient to determine the matter.

Disagreement has risen among the international scientific community on which properties shall constitute the basis of comparison between a given GM food and its non-GM counterpart. Typically, the fact that the GM food and its non-GM counterpart have different genomes – fact that is crucial to award a patent to the inventor of the GM food – will be deemed as irrelevant from the point of view of human nutrition and health. Thus, in light of the doctrine of substantial equivalence, it is possible that a GM food is considered a novelty within a country's patent office, but standard within that country's food safety agency.

Upon presenting the doctrine, it is important to clarify its scope. Ascertaining the substantial equivalence of a GM food with respect to its non-GM counterpart is only one part of the process of evaluating whether and how to produce a GM organism and to introduce it in the marketplace. Following the EU regulations circa the production and marketing of GM organisms (see entry on "[► EU Regulatory Conflicts over GM Food](#)"; "[► GMO Food Labeling](#)"), we may divide up the evaluation of a GM organism in four categories.

Substantial equivalence contributes in different manners to the evaluation of a food in each of the four categories.

(i) *Biosafety*. Substantial equivalence pertains primarily to the assessment of the *biosafety* of the GM organism. In particular, it concerns the safety of consumers, as opposed to – for instance – the safety of biodiversity within an area of production. The appeal to substantial equivalence has thus served to argue that GM foods raise no distinct threat to human health because they do not deliver novel nutritional constituents to the organism.

(ii) *Labeling*. Substantial equivalence influences also the practices of food labeling. If a GM food is substantially equivalent to its

non-GM counterpart, from a nutritional standpoint there is no reason why the two sorts of foods should be distinctly labeled.

- (iii) *Traceability*. The doctrine of substantial equivalence has arguably jeopardized the possibility of tracing the effects of GM foods on human health. Countries that have endorsed the doctrine, and where GM foods are not distinctly labeled, have rendered impossible for consumers to study whether the emergence of certain allergies (e.g., food allergies and intolerances) and diseases has been influenced by the consumption of GM foods.
- (iv) *Freedom of choice*. By blurring the distinction between GM organisms and their non-GM counterparts, the doctrine of substantial equivalence has weakened the freedom of producers and consumers to choose what sort of product they wish to, respectively, eat or deliver to the market.

Substantial equivalence has an underlying role also in the 2003–2006 debate within the World Trade Organization on the measures that are necessary to protect human, animal, or plant life or health. The debate eventually led to the so-called SPS Agreement – the Agreement on the Application of the Sanitary and Phytosanitary Measures (see the entry on “► [The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement](#)”). If GM organisms are deemed as substantially equivalent to their non-GM counterparts, then countries that buy into the SPS Agreement have no reasons pertaining to the safety of human nutrition for impeding production of GM organisms or for distinctly labeling GM foods.

Empirical Evidence Against the Doctrine

The doctrine of substantial equivalence is of dubious scientific rigor. In their seminal 1999 article on the topic, Millstone, Brunner, and Mayer remarked that:

The concept of substantial equivalence has never been properly defined; the degree of difference between a natural food and its GM alternative before its ‘substance’ ceases to be acceptably

‘equivalent’ is not defined anywhere, nor has an exact definition been agreed by legislators. It is exactly this vagueness which makes the concept useful to industry but unacceptable to the consumer. Moreover, the reliance by policymakers on the concept of substantial equivalence acts as a barrier to further research into the possible risks of eating GM foods. (Millstone et al. 1999a, p. 525; cfr. also Millstone et al. 1999b for a sequel)

After nearly 20 years, a good deal of empirical and theoretical evidence against substantial equivalence has been amassed. From a more practical point of view, a first criticism concerns the looseness of the concept of substantial equivalence. Little has been done to tighten it. Rather than being treated on a par with novel chemical compounds such as food additives, pesticides, and pharmaceuticals, GM foods were regarded as safe once a few basic data on their biochemical properties had been provided.

Specific data have recently been collated to show important nutritional differences between GM foods and their non-GM counterparts. In a study of the variation of nutritional values among three sorts of soybeans on the market – GM, non-GM conventionally farmed, and non-GM organically farmed – researchers were able to discriminate “all the individual soy samples . . . into their respective agricultural practice background” (Bøhn et al. 2014, p. 14). Other strategies for the analysis of transgenic foods suggest that, contrary to the prevalent view held so far, even from a nutritional standpoint, non-negligible differences exist between GM foods and their non-GM counterparts (cfr. Valdés et al. 2013). The equivalence, that is, was apparent in that the wrong cluster of properties had been selected. But, there is more to the story, which relates to broader theoretical presuppositions within the doctrine of substantial equivalence.

Theoretical Evidence Against the Doctrine

The doctrine of substantial equivalence employs, in an unorthodox fashion, a conceptual tool of Aristotelian descent – the theory of substance. In Aristotelian philosophy, the identity of a substance

is defined on the basis of some essential properties, which are selected among a larger cluster of properties, including both essential and accidental ones. Thus, for instance, a human is essentially a rational animal, while accidentally it may be tall or short, sitting or standing, and bold or hairy.

The doctrine of substantial equivalence, however, seems to adopt a double-standard approach to a given food that is questionable. In order for a food to count as both novel (at a patent office) and standard (at a food safety agency), one of the two following views has to be held. Either what is presented to the two offices is not the same entity or, if it's the same entity, one of the two agencies (or both) overlooks some of the food's essential properties. Call the first the *miracle view* (it multiplies entities), while the second the *deflationary view*. Both of them face considerable difficulties.

The deflationary view is suitable to those that take a deflationary attitude regarding governmental procedures of sorting and labeling. This is an attitude that weakens the ontological presumptions of such procedures. For instance, suppose a governmental agency registers a citizen as a Caucasian male. The deflationist will hold that such a classification says little with respect to the real racial profile and sexuality of the citizen. Analogously, suppose a food safety agency claims that a GM food is substantially equivalent to its non-GM counterpart. The deflationist will regard such a claim as saying little real with respect to what the food is. While "Caucasian male" and "substantially equivalent" may partially capture the real identity of a person or a food, their role is to serve a specific practical purpose for a government and its citizens.

The deflationary attitude has two significant drawbacks. First, it promotes a form of skepticism towards food labels. The skepticism runs against those who take food labels seriously. Second, in the debate over the palatability of the doctrine substantial equivalence, the deflationist leaves open a worrisome possibility: that the double standard applied by the patent office and the food safety agency is motivated by practical purposes, which run against the purposes of the citizens, who demand that the label be as close to describing the real food as possible.

The shortcomings of the miracle view, on the other hand, are more obvious: it is in striking contradiction with ordinary talk. The miracle view can be savaged only by suggesting that the judgments of the patent office is not on the *food*, but rather on a specific DNA sequence, while the judgment of the food safety agency pertains to the food and not to the DNA sequence. While such an analysis may be accurately describing extant practices, at once it points out the lack of a comprehensive and systematic treatment of regulations pertaining to GM foods (cfr. Andrée 2007).

The theoretical tenability of the doctrine of substantial equivalence has been criticized from another significant angle. The claim, in this case, is that the doctrine leaves no room for certain qualitative considerations of the food that are of importance to consumers. As Sylvie Pouteau writes in a classic paper:

The misuse of equivalence points to the fact that food quality cannot be restricted to mere substance and that food acts on human beings not only at the level of nutrition but also through their relationship to environment and society. Besides chemical, toxicological, and immunological issues, ethical issues should also be addressed. Beyond substantial equivalence, "qualitative equivalence" and "ethical equivalence" are to be found as ethical counterparts. (Pouteau 2000, p. 276)

According to Pouteau, the doctrine of substantial equivalence should be replaced by a doctrine of *ethical equivalence* (cfr. Pouteau 2000, 2002; Madsen et al. 2002). What matters to citizens and consumers is that GM foods and their non-GM counterparts are equivalent from an ethical standpoint. Judgments of ethical equivalence will be based not solely on the biochemical properties of the foods, but on additional properties of the foods that are ethically relevant. Pouteau's position has been rounded off by studies that point out the importance of familiarity, risk, and method of production in assessing the equivalence of GM foods and their non-GM counterparts (cfr. Siipi and Launis 2009; Meghani 2009; Gupta 2013).

The suggestion, ultimately, is that governmental agencies should base their respective guidelines regarding the production and marketing of GM foods not simply upon some (disputable) biochemical properties of the foods, but also

upon relevant ethical properties. Through appropriate labeling requirements, consumers should be consented to make an informed choice about their diet: a choice that allows tracing back potential sources of allergies, intolerances, and diseases and a choice that reflects the consumer's ethical commitment to a tradition, to a system of production, and to a specific risk-taking conduct.

Summary

According to the doctrine of substantial equivalence, from the perspective of human health, GM foods are as safe to be consumed as their non-GM counterparts. While a number of governmental agencies and institutions worldwide have endorsed the doctrine, important criticisms have been raised against it. After rehearsing the key tenets of the doctrine, the entry surveys its major practical and theoretical shortcomings. From a practical point of view, not only is "substantial equivalence" loosely understood in national and international regulations, but some recent studies point out to some nutritional differences between GM foods and their non-GM counterparts too. The theoretical shortcomings of the doctrine, then, rest on its problematic use of some classic metaphysical concepts (i.e., substance and identity) as well as on its lack of consideration for ethical properties that are of importance to consumers, such as risk, familiarity, tradition, and method of production.

Cross-References

- [EU Regulatory Conflicts over GM Food](#)
- [GMO Food Labeling](#)
- [Metaphysics of Natural Food](#)
- [The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement](#)

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Sustainability and Animal Agriculture

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Synonyms

Animal production; Animal welfare; Environment; Food safety; Public health; Sustainability

Introduction

The sustainability of current global agricultural practices is an ethical issue that is attracting greater public awareness. There is increased societal concern regarding the crucial harmonic balance between feeding an ever-growing human population and minimizing environmental damage for the planet's future inhabitants (Broom 2010). Sustainability refers to the long-term success of a system. In order to keep animal agriculture sustainable, changes must be implemented to allow animal production to continue in an efficient and environmentally conscious manner. Such strategies should assess the potential benefits and consequences for all stakeholders involved. These considerations will help to ensure the viability of animal agricultural systems in the years to come.

The overall sustainability of animal production reflects the collective viability of a variety of agricultural aspects including animal welfare, food quality, the environment, and human health. Ethical concerns pertaining to the quality of life for the animals arise from the visible suffering and unnatural behaviors exhibited in intensive farming conditions. Food quality and safety considerations associated with certain agricultural practices have resulted in decreased consumption of animal products by the general public. The concept that a healthy environment is a vital aspect of sustainability has become significantly more widespread, and a larger population of consumers is beginning to demand responsible practices that minimize contamination and preserve the quality of the earth, water, and air. A scientifically established correlation between the consumption of certain animal products and public health has garnered more attention as chronic metabolic problems, such as diabetes or cardiovascular disease, threaten the public ideal of reaching old age in a healthy state.

With these concerns, comes the need for change. In order to maintain a sustainable system, the animal agriculture industry must first reflect on its responsibilities owed to the public, as well as its negative effects exerted on the environment. Modifications in the use of both new and existing

resources should be continually reevaluated in an effort to limit the impact of the industry on the planet and its foreseeable future.

Sustainable Animal Agriculture

Sustainable animal agriculture must address important issues in the production, marketing, and consumption of livestock, poultry, and fish. The concept of sustainability refers to the pressing need to feed a growing human population without damaging the environment beyond repair for future generations, while doing so in a manner that guarantees both functional and moral long-term acceptance (Broom 2010). An animal production system is sustainable if it can be continued successfully in its current form without the need for future modification. A system becomes unsustainable once it begins to use methods that are environmentally, economically, socially, or ethically unviable.

Historically, the use of animals for food complemented the harvesting of crops in ways that added value to plant agriculture and improved the continuous supply of protein for humans. Harvesting of plants is a seasonal event, and thus it presented difficulties associated with the storage of produce prior to modern preservation techniques. The use of animals was advantageous because animals could be harvested over extended periods of time in contrast to plants. Grazing animals, which consume available vegetation, were essentially viewed as storage units of plant nutrients that could be collected by humans at a later time. The possibility of hunting animals was seen as a strategy to supplement both plant and animal agriculture. The year-round availability of animals to hunt presented a more promising supply of protein and nutrients throughout all seasons. With the arrival of animal agriculture, humans no longer depended exclusively on the animals they hunted. Adequate protein sources could also be provided to society beyond the narrow window of harvest season by storing milk from sheep, goats, and cattle as cheese or yogurts and preparing fish and livestock meat as dried or salted.

Animals have been used to convert plant products unfit for humans into desirable food products, thus broadening the use of plant material and prolonging the availability of food. Ruminants eat grasses and parts of plants such as stalks and shells and can utilize spoiled plant materials that otherwise are not suitable for human consumption. The extension of food availability throughout the different seasons via animal intermediates, along with the primitive desire for animal products, created added value to plant agriculture. Animals have also been used for purposes other than food, such as providing power for work and transportation. Animal skins and fibers have been used for clothing and shelter. Due to the aforementioned reasons, animal agriculture has been market driven ever since its initial establishment during early civilization.

In modern times, concern about the sustainability of animal agriculture in developed countries has increased as animal production systems have transitioned from extensive to intensive systems. Driven by market forces, competition, regulation, and economic subsidies, the intensification of animal agriculture has resulted in the more efficient consolidation of production systems over the last century. Subsequent cost reductions have made the availability of abundant and cheap food of animal origin possible. Increased productivity, however, has not come without a price, and oftentimes, the animals' interests are hampered. In the majority of cases, it is the animals that are forced to carry most of the burden, which results in a decreased quality of life for animals and the subsequent increased ethical concerns of humans.

Small farms typically have multiple crops and livestock types integrated into production and harvest systems that maintain income over seasons by utilizing natural and seasonal resources. Historically, small farms have remained pasture based or have relied on local sources of feed for livestock, which has limited the livestock density in an area to the carrying capacity of the local environment. Large farms often produce one or two crops and a single type of animal and have competitive advantage in commodity food production through the economic strategies of scale and more efficient

use of capital. By sourcing feed from outside the region, large farms can accommodate more animals but consequentially produce more manure than the local environment can handle without strict environmental regulations. The consolidation of farms has occurred in response to decreased marginal profitability in commodity food production, increased consumer demand due to population growth, and heightened public awareness about food quality and safety.

Issues regarding the sustainability of contemporary intensive animal agriculture have been brought to light because the management of animals and animal waste in large-scale animal farming conflicts with the values and ethics of certain sectors of society. While animal production may still add economic value to crops, like corn and soybeans, the historical need to maintain protein in the human food supply over different seasons via the use of animals as intermediates is now a lesser concern due to the development of enhanced long-term storage techniques for grains and other plant protein sources. Recent improvements in the storage of healthy and nutritious foods have resulted in an increased ability to transport food products globally. While upgrades have been made, such systems are not flawless and inadequate storage continues to contribute to resource wastefulness. Approximately one third of the food produced around the world is never consumed because it is instead spoiled or destroyed by pests during transport (Gustavsson et al. 2011).

Concentrated housing of large numbers of animals burdens local environments and can exceed the buffering capacity of ecosystems to utilize nutrients from manure and control pathogens. While fecal matter from a relatively small number of animals can be absorbed into a local ecosystem, feces and urine from a large number of animals can result in local environmental damage and runoff to surrounding ecosystems. Concentrated animal housing can also promote an increased pathogen load of both animal and zoonotic pathogens, which results in potential health hazards to humans and other animals.

The primary challenges regarding the sustainability of contemporary intensive animal

production systems are concerns in the areas of animal welfare, environmental conservation, and resource competition.

Sustainable Animal Agriculture and Animal Welfare

Each animal species has its own biological limitations and needs. If pushed beyond certain physiological limits, animals will start to suffer. Dairy cows, selected for high milk yields and fed a high-energy diet to meet the demands of production, experience decreased immune function and decreased metabolizable energy, which leads to the increased presence of health problems such as mastitis, lameness, and infertility. Sows are social animals and, in natural conditions, live in stable sow groups. When housed in solitary gestation crates, the ability to engage in natural social behavior is prevented. This negatively impacts a sow's emotional state, causing frustration. A manifestation of such frustration is the development of stereotypies, such as bar biting or weaving, which are repetitive obsessive behaviors that serve no clear purpose. The housing of laying hens in tightly confined battery cages inhibits the expression of natural behaviors, like nest building or dust bathing, and can actually lead to the development of unwanted behaviors such as feather pecking or cannibalism. The presence of any of these examples suggests a decreased quality of life for the animals.

Increasing public concerns about animal welfare and the care of captive animals, particularly agricultural species, affects whether or not the use of animals for these purposes is considered sustainable (Broom 2010). A rise in productivity over the last 50 years has occurred hand in hand with a decreased quality of life for farm animals and an increased societal awareness of industrial farming systems (Harrison 1964). Certain husbandry practices, such as gestation crates or battery cages, are becoming more unacceptable to consumers. As a result, these farming methods become unsustainable, forcing the agricultural industry to modify current systems in order to adapt to consumer demands.

In a market-driven economy, public opposition to the consumption of a certain product diminishes the market success of that particular product. Consumer surveys completed in recent years have demonstrated that the general public is willing to pay more and change traditional shopping habits in order to specifically purchase animal products manufactured using animal welfare conscious practices (Special Eurobarometer 2007). Recent reports indicate that animal welfare concerns extend beyond consumer intent to change shopping habits and have actually resulted in decreased demand for certain foods such as poultry and pork products (Tonsor and Olynk 2011).

The proliferation of faux-meat products over the last few years has presented an additional threat to animal agriculture. These meat analogs use plant proteins to create animal-free products that look and taste similar to meat. With the existing uneasiness about current production standards, the availability of these imitation meat products may create a shift in market trends and further impact the sustainability of certain practices and the future of animal agriculture.

Sustainability of Food Quality and Safety

In addition to animal care and well-being, consumers have expressed concerns about food quality and safety. Decline in the consumption of food goods believed to be unhealthy or unsafe has caused certain products to become less sustainable. An example of this is the outbreak of bovine spongiform encephalopathy in 1980s, which resulted in decreased beef consumption in Germany and other European countries (Becker et al. 2000). If a certain practice or system is deemed unacceptable, consumers will boycott the purchase of items produced by such means, consequently limiting the viability of a given farming system. Legislation and food vendor standards for farm animal care directly reflect the impact of consumer concerns regarding acceptable food quality and safety. Dismissing and neglecting to address such concerns can have a detrimental

effect on a particular sector of the agricultural industry, making it unsustainable.

In market-driven economies of democratic societies, sustainable animal products are those that are manufactured in a manner consistent with consumer acceptance rather than science-based facts and findings. Public perception of agricultural practices, whether accurate or not, determines what standards are considered adequate, and thus, sustainable products are those that are produced in line with the morals, values, and ethics of the consumers who purchase them.

Sustainability of Environmental Impact

Increasing public interest in environmental ethics has popularized the idea that animal agriculture should have a minimal impact on climate and the environment while still providing for the basic needs of the animals. As a whole, the public remains generally accepting of the use of animals for food, but the overall consensus is that production should meet certain standards of both food safety and animal welfare.

The negative impacts that many agricultural practices have on the environment and wildlife contribute to societal uneasiness. Increased production of greenhouse gases, soil erosion, and contamination of waterways are examples of detrimental outcomes that the general public may find troubling and ethically difficult to accept (Tilman 1998).

There is increasing discussion about sustainable balance – a harmonic interaction between animals, caretakers, producers, consumers, general public, and the environment. While such a balance is ideal, it may prove challenging to accomplish in some locations. For instance, it would not be sustainable to raise large numbers of farm animals near highly populated areas due to the competition associated with the coexistence of both populations in relatively close quarters (McGlone 2001).

Biodiversity is an important conservational tool, and the presence of monocultures can result in catastrophic disease outbreaks and adverse environmental conditions. When acres of land

are dedicated to a limited number of species, problems more frequently result in damage that is difficult to repair. Similarly, the concentration of a limited variety of farm animal species in a single geographic region may increase the potential for disease transmission as well as other management problems. These outcomes can have a devastating impact on the agricultural industry and its sustainability.

Excessive use of fertilizers and management of manure associated with large-scale production have led to exacerbated nitrogen and phosphorus contamination of the environment in certain parts of the world (Foley et al. 2011). Contamination of the underground water table with these waste products has long-term consequences that are not sustainable for the environment. There are also documented concerns about the presence of genetically modified organisms in food products (Burton et al. 2001). Regardless of whether or not this uneasiness is based on scientific evidence related to product safety, it still possesses the ability to make a particular production model undesirable to the public.

A stressful environment impairs immune function, and thus, providing less stressful farming conditions for animals can indirectly prevent pathogen proliferation (Rostagno 2009). Humane husbandry and treatment help lessen the risk of both disease development and spread through a farm. Not only do humane practices address ethical concerns regarding the well-being of farm animals but are also important to ensuring public safety. Many animal pathogens such as *Salmonella* spp. and *Escherichia coli* O157:H7 are zoonotic. Even on farms where antibiotics are not routinely administered, enhanced biosecurity measures can help control the levels of such microorganisms and subsequently reduce the likelihood of transmission to humans.

The expansion of agriculture over the last few decades has resulted in an increase in greenhouse gas emissions (Foley et al. 2011). Greenhouse gases in the atmosphere help maintain the surface temperature on earth by acting like a blanket that traps warm air close to the surface. This form of

environmental temperature regulation is essential for all life on the planet. As concentrations of greenhouse gases increase, more solar radiation becomes trapped within the blanket of gases causing temperatures to rise. This results in global warming, which has been documented to adversely affect environmental living conditions (Intergovernmental Panel on Climate Change 2007). There is a definitive need to reduce greenhouse gas emissions (United Nations 1998). Agriculture as a whole is responsible for over 30 % of global greenhouse gas emissions, and livestock farming alone accounts for 18 % of such emissions (Food and Agricultural Organization 2006). Considering the impact of greenhouse gases on global warming, it is clear that current practices of animal agriculture are both environmentally and ethically unsustainable.

Energy is lost in the form of heat when animals convert protein from vegetables to meat or other forms of animal protein, which is an inefficient use of resources (McMichael and Butler 2010). Development of land to grow corn or other grains, which can be directly and adequately consumed by humans, is not sustainable when such crops are instead used to feed animals. Simply put, there is a two-step process that must take place in which (1) animals eat the crops and (2) humans eat the animals. The addition of a “middle man,” which in this case is the animal, creates another outlet for energy loss when instead those plant resources could be utilized directly and more efficiently by humans.

Swine and poultry are food animals that may be considered less sustainable from a production standpoint. These animals act more in direct competition with humans when it comes to plant energy because neither species contains a specialized digestive system that allows for the breakdown of unique plant material. Alternately, ruminants graze pastures or browse bushes that cannot be directly utilized by humans. While ruminants play a minor role in the release of methane, carbon dioxide, and other greenhouse gases (via eructation), the fact that humans and ruminants do not use the same energy sources makes the production of these animals a more sustainable practice

(Murgueitio et al. 2011). In this context, animal agriculture allows plants to be metabolized by humans (Bradford 1999).

Sustainability of Public Health

Population expansion brings with it an increased demand for food and water. A rise in meat consumption occurs in areas of sustained economic growth. The shift from plant to animal protein that occurs as countries develop is referred to as a *nutrition transition* (Popkin 2003). This transition does not come without consequences, as human health is affected by excess consumption of saturated fats of animal origin. The American Heart Association currently recommends a daily amount of less than 6 oz of meat, including fish and chicken (American Heart Association 2013), when in reality, average intake is much higher. Significant levels of saturated fats acquired through meat consumption have been linked to the development of chronic health problems like obesity, cardiovascular disease, and diabetes (World Health Organization 2003).

Increased public awareness has resulted in greater concerns involving the possible contamination of animal products with antibiotics and hormones that are routinely administered to most farm animals for nontherapeutic reasons. Consumers may begin to rely on nonanimal sources of protein in order to avoid the potential health risks associated with the consumption of foods contaminated with such chemicals. There may also be a trend shift in what consumers find acceptable from a health standpoint. An example is the possibility of using more natural feed additives, from chicken manure to restaurant waste, instead of chemicals, antibiotics, or hormones.

Summary

Changing societal values are forcing those involved in animal agriculture to reassess certain practices that have become standard over the last few decades. Intensification of animal production has resulted in increased public awareness

regarding the ethics of such practices and the potential effects on the environment, animal welfare, food quality, and human health. The long-term sustainability of animal agriculture relies on the industry's ability to respond to consumer concerns and maintain practices that are socially, economically, and environmentally sound.

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Sustainability of Food Production and Consumption

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Synonyms

Climate change; Convention on Biological Diversity; Economic impact; Environmental impact; Food miles; Kyoto protocol; Social impact

Introduction

The modern use of the concept of sustainable development refers to management of the use of natural resources aimed at balancing availability of natural resources with consumption with a view to promote economic growth and social well-being. Sustainable development has played a central role in international governance of food production and consumption throughout the last 25 years. The concept of sustainable development is implemented in two international governance frameworks: the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

The scope of this entry is to examine the concept of sustainability and sustainable development and its role in governance and policy of food production and consumption. Section “[Sustainable Development as an Ethical Ideal in International Policy](#)” examines the concept of sustainable development as an ethical ideal and how different environmental ethics approaches together with cultural and political values influence the task of determining the focus of a sustainable development and how it should be obtained; section “[Three Dimensions of Sustainability: The Convention on Biological Diversity](#)” examines the complex interrelation between economic, social, and environmental sustainability in food production in light of the governance principles for sustainability outlined in the CBD and its protocols. Section “[Climate Change as a Challenge to Sustainable Development of Food Production and Consumption](#)” addresses the challenges of climate change to sustainability in food production and consumption and examines these in light of the objectives of adaptation and mitigation set out in the UNFCCC and the Kyoto Protocol; different governance approaches with view to promote climate sustainability in food production and consumption including the concept of food miles and carbon footprint are discussed. The entry concludes with a suggestion of some key principles for governance of importance to sustainability in food production and consumption in the future.

Sustainable Development as an Ethical Ideal in International Policy

The term sustainability, as it is used today, has its origin in the outline of sustainability in *Limits to Growth*, a report for the Club of Rome’s project on the Predicament of Mankind from 1972 where sustainability is described as “a world system that is: (1) sustainable without sudden and uncontrolled collapse; and (2) capable of satisfying the basic material requirements of all of its people” (Meadows et al. 1972, p. 158). While the industrialization of agricultural and livestock production in the 1960s brought tremendous economic growth, the negative impacts on the environment and their long-term consequences for social and economic development became a growing concern among scientists, philosophers, and policy makers during the 1970s and 1980s.

In 1987 the United Nations World Commission on Environment and Development published the report “Our Common Future” (the Brundtland Report). The report examines the relation between societal development and degradation of species and genetic resources. The Brundtland Report argued in favor of a “sustainable development,” which was defined as a development which seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future (World Commission on Environment and Development 1987, p. 84).

The Brundtland Report laid the ground for the adoption of Agenda 21 at the Earth Summit on environment and development held in Rio in 1992. Agenda 21 (<http://www.un.org/esa/dsd/agenda21/>) is an international agreement of actions to achieve sustainable development. The Rio Earth Summit also led to adoption of the Rio Declaration on environment and development (http://www.unesco.org/education/information/nfsunesco/pdf/RIO_E.PDF).

Furthermore, the CBD was opened for signature during the Rio meeting, and the UNFCCC was agreed. Both conventions play an important role aiming at environmental sustainability in food production and consumption with a view to ensure economic growth and promote social well-being.

The Brundtland Report's definition of sustainability/sustainable development plays a central role in these frameworks. The concept can best be described as an ethical ideal concerned with the ethical relation (a) between humans and nonhuman nature and (b) between present and future generations. The ethical motivation behind the concept of sustainable development reflected in the Brundtland Report echoes an anthropocentric-oriented ethical approach to environmental protection. The idea of sustainable development is based on the common interest of humankind to protect nonhuman nature as the foundation for our human existence and well-being (World Commission on Environment and Development 1987, pp. 71–86). The concept of sustainable development reflects the idea of inter-generational justice; it advocates an ethical responsibility of present generations to ensure that their pursuit of economic and social development, does not compromise the possibility for future generations to meet their needs and aspirations. However, the motivation for establishing sustainability and determining what sustainable development should entail depends on the cultural, ethical, and political values embedded in different worldviews or perceptions of the relationship between humans and nonhuman nature. Environmental value-based ethics approaches such as biocentrism or ecocentrism represent an alternative to the anthropocentric approach. According to these approaches life and/or ecosystems as a whole represent an autonomous intrinsic value which human beings ought to respect in and by itself (Rolston 2012, p. 110, 116). Thus, a biocentric or an ecocentric approach may be less prone to accept trade-offs in terms of compromising protection of biodiversity or specific habitats or endangered species for the sake of promoting social and economic sustainability, for example.

Determining Sustainability: Implications of Cultural, Ethical, and Political Values

The concept of “sustainable development” as it applies to governance of food production and consumption has three dimensions: an economic,

a social, and an environmental dimension (World Commission on Environment and Development 1987, pp. 174–175). These three dimensions are likely to conflict. Ideally sustainable development is to take into account all three dimensions, without compromising one over the other. In reality, however, initiatives to establish sustainability in one dimension may involve trade-offs in another. For example, food production may be sustainable in terms of providing enough food and ensuring distribution so to avoid food shortage in vulnerable regions of the world, but it may not be environmentally sustainable. Similarly there may be trade-offs within the same dimension of the concept. For example, it is not difficult to imagine that a production method can be sustainable in terms of protecting specific aspects of biological diversity, but not in terms of the energy output and contribution to anthropogenic climate change.

Determining what is required to establish sustainable development in a specific context and the acceptance of trade-offs does not only depend on the primary objective of sustainability, i.e., whether the goal is to establish climate sustainability or social sustainability, but also on the cultural and ethical values of the various stakeholders.

Likewise, political values and beliefs play an important role for determining what governance instruments are necessary to establish sustainable development. At least three major governance approaches to sustainability are reflected in international policy on food production and consumption: (1) a neoliberal approach to sustainable development in food production and consumption argues that market mechanisms can ensure sustainability because an increase in price of scarce resources is likely to encourage more efficient use or use of alternative resources. (2) A conservationist approach emphasizes the necessity of living in accordance with the natural environment, respecting the limits that is set for human activity and for economic growth. A sustainable use of resources for food production in this context would include careful management of existing resources including development of environmentally friendly

agricultural methods, focusing on promoting small-scale and local farming. High-tech or large-scale farm industry approaches to solve problems of food security or environmental problems are usually not associated with sustainability in this context. (3) An institutional approach emphasizes the importance of environmental protection through changes in both production and consumption patterns encouraged, for example, by market-based instruments introduced by governments. Changes in production and consumption patterns have to happen through institutional changes, which could involve regulation of multinational companies, or introduction of taxes that may push production and consumption in more eco-friendly and environmentally sustainable directions (Oosterveer and Sonnenfeld 2012, pp 41–44).

Over the years the concept of sustainability and sustainable development has been criticized for being vague. However, it must be emphasized that the way the concept is implemented in the two key international governance frameworks for sustainability in food production and consumption, the CBD and UNFCCC, represents an ethical ideal, which frames international policy and requires interpretation. Ethical and political debate about sustainability including debate on governance approaches and specific strategies is crucial in order to balance actions according to different values and economic, social, and environmental interests. The interrelatedness of these three dimensions of sustainability together with the complex challenge they represent to the objective of sustainability in food production and consumption is examined in the following Section.

Three Dimensions of Sustainability: The Convention on Biological Diversity

The development of the CBD began in 1987 and was an attempt to harmonize existing conventions with relevance to biodiversity. The convention came into force on 29 December 1993 and now has 193 parties according to its official website (<http://www.cbd.int/>). Today the CBD

is the main international instrument addressing issues related to conservation of biological diversity. The CBD has three major objectives: conservation of biological diversity, sustainable use of biological diversity, and fair and equitable sharing of benefits from its utilization. It was established with the aim to protect global biological diversity, recognizing that natural resources necessary for economic development are not unlimited (Secretariat of the Convention on Biological 2005, Sect. 1, CBD Preamble). A number of thematic work programs are established under the convention to promote conservation and sustainable use of biological diversity in specific areas including marine and coastal areas, agriculture, forests, inland waters, and dry and subhumid lands (Secretariat of the Convention on Biological Diversity 2005, p. xxx).

The convention reflects a holistic approach to sustainability, where a sustainable use of natural resources can be summarized as one that takes into account the need for economic and social development through production and consumption without jeopardizing the value of biological diversity (Secretariat of the Convention on Biological 2005, Sect. 1, CBD, Article 1). The motivation for establishing sustainability is the recognition of the value of biological diversity, which is referred to as both an intrinsic value and a multifaceted value that includes the ecological, social genetic, economic, scientific, educational, cultural, recreational, and aesthetic value that the diversity may represent to a nation, to a society, or to the individual. The convention reflects a perception of biological diversity as a collective good which is of “common concern of humankind” (Secretariat of the Convention on Biological 2005, Sect. 1, CBD Preamble). To protect this collective good, the convention sets out egalitarian governance principles for protection of biological diversity while not jeopardizing the objectives of socioeconomic sustainability. Efforts to protect biological diversity and ensure sustainable use of genetic resources are to be carried out according to principles of justice emphasizing the need for socioeconomic sustainability through a fair and equal distribution of resources and sharing of

benefits and costs related to protection and use of biological diversity as part of the effort to ensure human well-being through social and economic development (Schroeder and Pisupati 2010, p. 5).

Two protocols have been added to the CBD since 1993: the *Cartagena Protocol on Biosafety* (adopted in 2000) and the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising From Their Utilization to the Convention on Biological Diversity* (adopted in 2011) (Secretariat of the Convention on Biological Diversity 2000, 2011).

Both protocols illustrate the complex challenge of balancing the environmental, social, and economic dimensions of sustainability in food production and consumption.

Economic Development and Environmental Sustainability: The Cartagena Protocol

The central policy objective of the Cartagena Protocol (2000) is to establish a balance between the interests in exploiting modern biotechnology as a means to economic development, with the potential environmental and social impact in terms of negative risk to human health and the environment. This policy is based on the precautionary principle, which is outlined in the Rio Declaration's principle 15 which states that

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-efficient measures to prevent environmental damage (http://www.unesco.org/education/information/nfsunesco/pdf/RIO_E.PDF).

The Cartagena Protocol sets out criteria for risk assessment of the environmental impact of new biotechnologies for use in food production, in agriculture, and in healthcare where there are potential adverse effects to human health and the environment (Secretariat of the Convention on Biological Diversity 2000, pp. 1–2).

The Cartagena Protocol is also concerned with the socioeconomic impact of establishing biosafety. Distributive justice and justice in the exchange of knowledge and research play an important role in this context. The principles of

fairness and equality are promoted both with respect to the distribution of benefits from biotechnology to human health or to agricultural production among the parties of the convention and with respect to the sharing of research and know-how of importance for the establishment of the necessary precautionary measures that allows for safe use, for example, application of genetically modified (GM) crops for food and feed should include appropriate assessment of risk to human health and to the environment in local communities.

When GM crops were first introduced in the 1990s, they were promoted by large multinational companies, as a potential solution to problems of food security. Nevertheless, application of GM crops in food production has been met with skepticism among consumers in many countries and especially in the countries of the European Union, where the lack of obvious consumer benefits and biosafety concerns has been the main reason for rejection of GM crops for food production (Gaskell et al. 2006). Among the major critiques are that GM crops, due to the fact that these are primarily produced by large multinational companies who protect their economic interests through patents, contribute to socioeconomic disparity and to an unsustainable development in food production altogether. However, scenarios outlined among others in the Intergovernmental Panel on Climate Change (IPCC), working group II's report from 2007 assessing *The Impacts, Adaptation and Vulnerability including the impact of climate change on Food, Fibre and Forest Products* (Easterling et al. 2007, pp. 275–303), have given rise to renewed debate on the potential benefits of GMOs to the aim of food security and environmentally sustainable food production.

The necessity of policy actions to promote justice in distribution and exchange of research and technology including new ways of approaching the problem of patenting and intellectual property rights in relation to development of GM crops has been mentioned as crucial for the establishment of sustainability with respect to food production and environmental protection (The Royal Society 2009, p. 45, 50).

Environmental Protection and Economic and Social Sustainability: The Nagoya Protocol

The Nagoya Protocol (2010) is concerned with the social and economic impact of technology development in food production. The protocol has as its central objective the promotion of social justice in terms of fairness and equality in access to genetic resources and their utilization. The protocol has its provision in article 8(j) and article 15 of the convention and sets out governance provisions with respect to the legal rights of providers of genetic resources and requirements with a view to promote and strengthen use of traditional knowledge and technologies that can be applied to protect biological diversity (Secretariat of the Convention on Biological 2005, Sect. 1, CBD Art 15 and 2011, p. 1). The Nagoya Protocol illustrates how the convention's principles of justice tie in with the concept of sustainable development. The protocol emphasizes

the importance of genetic resources to food security, public health, biodiversity conservation, and the mitigation of and adaptation to climate change (Secretariat of the Convention on Biological Diversity 2011, p. 3).

A steadily growing world population, poverty, together with local food insecurity, and lack of access to sufficient food and water for nearly 1 billion people are factors challenging sustainability in global food production (Oosterveer and Sonnenfeld 2012, p. 31). Ensuring availability of a variety of affordable food options is important to avoid problems with food insecurity or malnutrition among economically underprivileged population groups. Even a small increase in food prices may lead to further social inequity among specific population groups or between developing and developed countries in general (Oosterveer and Sonnenfeld 2012, pp. 50–51). Legal instruments for governance, such as those set out in the Nagoya Protocol, to support local and indigenous farming methods that contribute to conservation of biological diversity through sustainable production, and ensure transfer of knowledge and technology between developed and developing countries, not only set the framework for economic and social sustainability but are also crucial to obtain global food security. It is

a complex challenge to govern biological diversity as a collective good with a view to protect biological diversity through conservation while at the same time ensuring food security for a growing world population with huge social disparities. This challenge is further enforced by the problem of climate change. Recent review of scientific data by the Intergovernmental Panel on Climate Change shows that agricultural and food production is likely to be influenced negatively by anthropogenic climate change. In particular, global warming is projected to cause an increased frequency and severity of extreme weather events such as increased frequency of droughts and flooding, which have negative impact on both crop yield and livestock production (Easterling et al. 2007, p. 275, 299). Expansion of land use with view to sustain or increase food crop production may lead to loss of biodiversity and resources altogether (Easterling et al. 2007, p. 275).

Climate Change as a Challenge to Sustainable Development of Food Production and Consumption

The problem of climate change is perhaps the most urgent environmental problem the global society faces to date. The Intergovernmental Panel on Climate Change's Fourth Assessment Report (AR4) draws a complex image on the challenges to socioeconomic and environmental sustainability of food production and consumption over the next 50–100 years. An average rise of local average temperatures between 1 °C and 3 °C may lead to an increase of food production overall, but an increase on average above 3 °C is predicted to cause a global decrease in food production. Additionally, agricultural and livestock production is also likely to face challenges from climate change in terms of increased frequency of extreme weather events, such as drought and flooding. Similarly, negative impact of climate change for distribution and productivity in the marine environment is likely to cause extinction of some fish species, which can impact fishery in several regions (Easterling et al. 2007, p. 275).

Climate change represents a major challenge to sustainability in food production and consumption. It is a challenge the objectives of conservation and sustainability in use of genetic resources as these are spelled out in the CBD, as well as to the objectives outlined in the United Nations Millennium Development Goals (<http://www.un.org/millenniumgoals/>) which were established to fight poverty and hunger. There is an urgent need for climate adaptation strategies in food production to establish a sustainable development of food production and consumption. In this context, sustainability involves intensification of production to ensure food security and socioeconomic development, conservation of biological resources, and mitigation of GHG emissions at the same time (The Royal Society 2009, p. xi).

Sustainability as Mitigation and Adaptation: The Climate Convention and the Kyoto Protocol

Production and consumption of food generate GHG emissions, for example, from deforestation to expansion of land use for agricultural and livestock production purposes, livestock production, use of energy from fossil fuels in food production and farming, heating of greenhouses or livestock farms, packaging, transport and cold storage, cooking, and processing of food waste (Oosterveer and Sonnenfeld 2012, pp. 90–91). However, if a development in food production is to be sustainable, it must not only include mitigation and adaptation measures to protect the environment but also at the same time aim at reducing rather than increasing inequalities on a global scale with view to ensure social and economic development in production and consumption (The Royal Society 2009, p. 11).

The climate convention promotes the idea of intergenerational justice as part of the ethical motivation for the conventions' objectives of climate protection and sustainable development (United Nations 1992, UNFCCC art 3, principle). Similar to the CBD, the climate convention reflects a holistic approach that emphasizes the need for sustainable environmental, economic, and social development (United Nations 1992, UNFCCC preamble). However, balancing the

objectives of the two conventions, i.e., conservation of biological diversity (CBD) and conservation of the atmosphere (UNFCCC), in itself is a potential challenge to sustainable development. While mitigation of GHG may contribute positively to conservation of biological diversity overall, there may be cases where the effort to establish mitigation and adaptation can involve trade-offs in terms of negative impact on conservation of biological diversity in local areas. With respect to development of economic and social sustainability, the convention implements the same egalitarian governance principles for justice in distribution and sharing of responsibilities as those included under the CBD.

The principles of fairness and equality lay the ground for the Kyoto Protocol, which concerns the distribution of responsibilities in terms of GHG emission reductions according to the parties' respective capabilities. The Kyoto Protocol was developed in light of the concerns and projections of future impact of GHG emissions outlined by the IPCC in their Second Assessment Report (AR2) from 1995. The protocol was adopted as a legal instrument under the UNFCCC in 1997 (Oosterveer and Sonnenfeld 2012, p. 95). A summary of the emission goals of the Kyoto Protocol is outlined on the official website (http://unfccc.int/kyoto_protocol/items/2830.php). The protocol sets out legally binding emission reduction targets during the period 2008–2012 for the 37 developed countries who have signed up, to reduce their emission of GHG to an average of 5 % compared to the emission levels from 1990. The parties of the convention have been negotiating new targets since 2008, but different interests of stakeholders including social, economic, and environmental interests complicate the task of reaching an agreement.

Citizens' Awareness, Consumer Policy, and Sustainability: Food Miles and Carbon Footprints

The Kyoto Protocol includes three major governance mechanisms: emission trading/carbon market, clean development mechanism (CDM), and joint implementation (JI), all of which are

summarized on the protocol's website (http://unfccc.int/kyoto_protocol/items/2830.php). These mechanisms are to promote mitigation in production in a market-based and cost-effective way. With regard to food production, possible strategies to promote mitigation were discussed at the COP 15 climate meeting in Copenhagen and included strategies for sector-specific mitigation through establishment of collaborative research and development and implementation of technologies aiming at mitigation (Oosterveer and Sonnenfeld 2012, p. 95). None of the mentioned strategies were agreed, due to concern for the impact of such governance instruments on international trade (Oosterveer and Sonnenfeld 2012, p. 96).

Other governance approaches may include taxation on products, introduction of standards in food production to promote sustainable and environmentally/climate-friendly food products, or regulations on wastage to promote recycling, etc.. However, the successful implementation of such policy approaches relies on public support and awareness of the impact of climate change and the necessity of adaptation measures on international, national, and individual levels.

Concepts such as food miles and carbon footprints have been introduced with the aim to raise consumer awareness about where food products come from and how food production impacts the environment. The concept of food miles was introduced by Prof. Tim Lang in 1996 (Lang 2005). The idea behind food miles is simple: the amount of miles that a food product has traveled gives an indication of its impact on the environment. The concept supports local farming and promotes a few basic principles that may contribute to lower the negative impact of consumer patterns on the environment: (a) shop local and buy local produce as it would require less miles of traveling from farm to fork; (b) buy seasonal produce as it would require less energy to produce than food products produced in heated greenhouses, for example; and (c) buy fresh produce because it is more likely to state where it is grown. While food miles may be a useful instrument to measure sustainability, focusing on the environmental burden stemming from transport of food products, taking into account miles

traveled from farm to fork, the concept also has its limits. Calculating food miles in food products with many different ingredients may be practically impossible, and the concept also does not take into account the environmental impact of the production of packaging used for food transportation (Lang 2005).

Critics of the concept argue that it is too simplistic and gives a skewed picture of the environmental impact of production and consumption of food products. For example, food miles do not take into account how the product is produced or the mode of transportation used. An alternative concept, "carbon footprint" measures the contribution of emission of CO_2 throughout the production chain (Oosterveer and Sonnenfeld 2012, p. 98). Measuring carbon contributions only may not provide a full picture of the environmental impact, and other types of GHG, such as methane from cattle farms, would also need to be taken into account. Yet, while the measuring of carbon footprints is far more complex than food miles, it may provide a more nuanced picture of environmental sustainability in the production of specific food products. Common for these approaches is their appeal to the individual consumer's ethical responsibility to contribute to a more sustainable development in food production and consumption. Examples of governance approaches to promote public awareness include campaigns such as "One Tonne Less" or NGO's campaigns promoting a change to vegetarian diet. Changes towards a more climate sustainable development in food production and consumption are unlikely to happen by way of market-based mechanisms. In fact such changes are unlikely to happen without regulatory measures. However, consumer and citizen awareness about the impact of climate change and recognition of the need for adaptation in production and consumption patterns are crucial for such governance instruments to be successful.

Conclusion

The modern use of the term sustainability or sustainable development can best be described as an ethical ideal which requires interpretation.

The task of determining how a sustainable development can best be obtained is challenged by various ethical and cultural values and by different political beliefs and approaches to governance. The two major international frameworks with relevance for governance of sustainability in global food production and consumption, namely, the CBD and the UNFCCC, set out a holistic approach where sustainability refers to economic growth, promotion of social well-being, and environmental protection. What may be environmentally sustainable may not always be socioeconomically sustainable and vice versa, and thus an important part of establishing a sustainable development is to ensure that while trade-offs are to be expected, these are not to compromise justice in terms of fair and equal distribution of costs and benefits from environmental protection.

While the CBD and the UNFCCC set out similar principles for governance to obtain social, economic, and environmental sustainability, they are established with different objectives in mind. The scope of the two conventions is not conflicting; however, the urgent need for mitigation and adaptation to climate change increases an already complex challenge of ensuring economic growth and social well-being in an environmentally sustainable way.

Transparency in governance approaches, research into the environmental, social, and economic impact of specific governance measures, as well as public debate and engagement are therefore founding criteria for the establishment of sustainable development in food production and consumption in the immediate and distance future. In particular there is a need for more research and debate on how mitigation and adaptation measures can be combined with already existing initiatives to promote environmental protection and sustainable use of genetic resources. Similarly there is a need for more debate about possible governance instruments to promote sustainable development. The power of consumer campaigns to promote citizen awareness about the impact of individual consumption patterns on the global problem of establishing sustainability in food production and consumption in light of the challenge from

climate changes must not be underestimated in this context because the success of governance instruments that can promote changes in local production and consumption practice is reliant on citizens' support of such instruments.

Summary

The idea of sustainability and sustainable development has come to play a central role in governance of food production and consumption over the past 25 years. Sustainability refers to the balancing of availability of environmental resources with consumption with a view to promote economic growth and social well-being. The three sections of the chapter outline the characteristics of the concept and its role in governance and policy of food production and consumption. Sustainability is described as an ethical ideal with a threefold scope aiming at economic, social, and environmental sustainability. Determining what constitutes sustainability in a specific context and how it is best obtained is subject to interpretation and influence from ethical, cultural, and political values and beliefs. The two key international governance frameworks for food production and consumption are examined: the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. The three dimensions of sustainability represent a complex challenge to governance. While the motivating concern is environmental protection and sustainability, both conventions implement egalitarian principles for justice, emphasizing fairness and equality as a mode of promoting social and economic sustainability. Climate change is addressed as the major challenge to sustainability in food production and consumption in the future, which is predicted to threaten global food security. The impact of anthropogenic climate change on the availability of genetic resources requires mitigation and adaptation to climate change if food security is to be ensured in the future. Consumer awareness of the impact of production and consumption patterns on climate change plays an important role for support and successful

implementation of governance instruments with view to promote sustainability in food production and consumption.

Cross-References

- [Biotechnology and Food Policy, Governance](#)
- [Food Ethics and Policies](#)
- [Food Labeling](#)
- [Food Security](#)

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Sustainable Consumption and Gender

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Synonyms

Gendered analysis of consumption patterns;
Responsible consumer behavior; Sustainable
consumption strategies and gender justice

Introduction

If population and consumption trends continue, the equivalent of two Earths will be needed to support humanity by 2030 (Global Footprint Network 2012). The social, environmental, and economic impacts of global consumptive trends are well documented in the sustainable consumption literature. This entry discusses some of the major food-related sustainable consumption trends and does so by using a gender lens to better

understand the gender factors and realities within these trends. The term “sustainable consumption” is used in accordance with the United Nations Environment Programme’s working definition: “The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the lifecycle, so as not to jeopardize the needs of future generations” (Ofstad 1994). Note that the term “consumption” is used herein in its broadest sense, including all three stages of the consumption cycle: the purchase, use, and disposal of products and services. The term “gender” refers to both the perceptual and material relations between women and men, and the term “gender analysis” is taken to mean research that aims to answer questions such as “who does or uses what, how and why?” (FAO 1997). This entry provides a background to gendered perspectives in sustainable consumption discourses before focusing on three key gender aspects of sustainable food consumption. It then finishes off by looking at gender-sensitive strategies for promoting sustainable food consumption.

Background of Gendered Perspectives in Sustainable Consumption Discourses

History to Gender Studies as a Source of Information

In order to understand how gender has permeated the sustainable consumption discourses over the years, it is first useful to briefly overview the history of gender studies. Four waves have been identified in the development of gender studies and a summary of these stages is presented by Casimir and Dutilh (2003). Firstly, in the early 1970s “liberal individualism” prevailed where the focus of attention was on enabling women, through education and individual support, to minimize differences with men. Secondly, in the late 1970s, the focus shifted to “liberal structuralism,” an approach which addresses the structural or environmental factors (e.g., legislative and policy responses) that prevent equal opportunities. Thirdly, “value difference” or “women’s

standpoint” characterized this wave (peaking in the 1980s) and promoted feminine values and alternative ways of living and valuing things. Fourthly, in the 1990s “post equity” or “resisting the dominant discourse” drew attention to post-structuralist thinking and to the ongoing social construction of gender relations. Although gender studies as an interdisciplinary academic field of study dates back over 40 years, it is only in the last 15 years that gender scholars have really started engaging with issues of sustainable consumption.

The Institutional Context

Although a review of international gender policies is outside of the scope of this entry (see Food Policy and Gender entry instead), it is important to understand that much of the agenda setting on debates about gender and sustainable consumption has happened at an international policy/institutional level. Much of this debate has taken place at United Nations world conferences, most notably, the United Nations Conference on Environment and Development (UNCED) that took place in Rio de Janeiro in 1992. Agenda 21, the program for sustainability for the twenty-first century that resulted from UNCED, concluded that environmental degradation is largely an outcome of overconsumption in the Global North, which is in contrast to the Global South, where it is largely poverty that restricts peoples’ consumption choices and leads to environmentally degrading consumption patterns. Gender-related issues were a major focus of Agenda 21, in particular, the commitment to overcome gender inequalities and to ensure equal participation from women.

In terms of gender and consumption analyses focused specifically on food, one of the major institutional players has been the Food and Agricultural Organization (FAO), the United Nations agency that is responsible for agriculture, forestry, and fisheries worldwide. In 1995 they adopted the Plan of Action for Women in Development (1996–2001) (FAO 1995) which presents a framework for ensuring that gender issues become an integral part of their organizational work. The mission driving this Plan of Action was to ensure that all women and men have the

support and access to resources that they need to pursue sustainable livelihoods and an improved quality of life.

Following Rio, a Commission on Sustainable Development was established to report on the progress of implementations of the UNCED agreements. In 1999, a report was submitted to the Commission of Sustainable Development which explicitly focused on “Gender and Sustainable Consumption” (Grover et al. 1999). In this report the authors identified the main aspects of the gender and sustainable consumption debate of the time. For example, they state that more poor and illiterate women than men in developing countries have been left out of the “consumption explosion,” that the gender perspective has not been properly integrated into international discussions on sustainable consumption, and that the inclusion of gender indicators in sustainable consumption research is recommended. These issues, identified in the late 1990s, are still relevant today (Schultz and Stieß 2009). Part of the reasoning for this is explained by the fact that sustainable consumption, in the Northern context at least, is still often perceived by policy makers and funding agencies to be gender-neutral, though, as gender scholars explain, this is a really a misconception (Vinz 2009).

The Sustainable Food Consumption Literature

A gender focus has infused the consumption literature on food choice and food practices over the years in a range of academic fields including marketing, history, sociology, anthropology, philosophy, and nutrition. However, much of the literature to date on gender and food is what Weller (2004) refers to as “explicit” gender analyses, that is, gender-specific disaggregated data drawn retrospectively from studies that were not in fact designed to focus specifically on gender issues. This is in contrast to works that utilize an “implicit” gender analysis to specifically address gender issues such as “what degrees of power and influence do different types of consumers have?” The following section considers data on sustainable food consumption drawn from both explicit and implicit gender analyses.

Gender Aspects of Food Consumption

This section is divided up into three parts: (1) the gendered division of labor-work; (2) the gendered body, health, and the social organization of intimacy; and (3) empowerment and access to decision making of women and men (Verloo and Roggeband 1996).

(1) The Gendered Division of Labor-Work

This first dimension refers to “norms, rules and practices in the field of labor, where asymmetrical distinction is produced between women and men, between paid and unpaid labor, between work inside and outside the home, and between male and female tasks and professions” (Verloo and Roggeband 1996, p. 6). Women and men have different employment patterns and socioeconomic situations, both which have direct and indirect implications on food consumption patterns. For example, with regard to employment, in industrialized countries, the proportion of men of working age in paid employment exceeds that of women. Of the population of working women, however, considerably more work part-time hours than men. Wages are lower on average and women of working age are more likely to live in households at risk of poverty (women who live alone with a dependent child are particularly vulnerable).

Time budget surveys conducted in European countries show that despite increasing participation of women in the paid labor market, and a resulting decrease of traditional gender roles, women still are assigned the core of housework management activities and, as a result, suffer more from time scarcity than men. Empirical research shows, for example, that on average women are responsible for 80 % of the consumption decisions made in private households and are the person that is primarily responsible for meal planning, buying, and preparing food. In developing countries, it is also women who are primarily responsible for the provision and preparation of food for the family, though the tasks involved in these processes are obviously of quite a different scope and nature to that of women in developed countries. In this case, it is food poverty that leads to peoples unsustainable food

consumption patterns, due to a lack of options and choices available to them.

Increased participation of women in the workforce in the Western world has resulted in a sharp rise in demand for convenient foods. Meal planning is now often done late in the day, and the supermarket is increasingly used as a pantry, with consumers stopping off on the way home to get whatever they feel like having for dinner that night. As well as the obvious increased negative environmental effects on increased travel to shops, lack of meal planning is often touted as one of the key reasons for the huge amount of food that is wasted at a household level. In addition, the foods that are bought late in the day for meal that evening are often time-saving products that are quick and easy to cook but that often come with a higher environmental price tag due to factors such as increased processing, transportation, and packing.

Empirical studies in industrialized countries have compared consumers' attitudes, values, and preferences toward sustainable food products, and clear gender differences have been repeatedly detected. Women, for example, have been shown to have a higher level of environmental awareness than men, despite the fact that they tend to report that they feel less informed than men about climate change and environmental issues. Women also generally tend to express a higher level of engagement with environmental issues generally and for environmental issues surrounding food consumption more specifically. Not only do they tend to have more environmentally friendly attitudes, they also are more inclined to act in a more environmentally friendly manner in their consumption behaviors. Research in different countries has repeatedly shown, for example, that women are most likely to buy organic food products (especially middle-aged women, with dependent children, who have high incomes and are well educated). Women have also been shown to be more skeptical than men regarding new technologies and their potential impacts and risks. Research indicates that women generally do not favor genetically modified (GM) food products and that they are more willing than men to pay a premium for products

that are GM-free. Early ecofeminism writings attempted to provide some justification for such gender differences in environmentally friendly attitudes and behaviors. In such writings, women are depicted as nurturing and peaceable (due to their domestic and reproductive capacities) in contrast to men who are considered to be powerful and destructive. In fact, nature is even sometimes referred to in this body of literature as a "feminine principle."

(2) The Gendered Body, Health, and the Social Organization of Intimacy

Health, reproductive health, vulnerability, and bodily needs are all important aspects in this dimension.

The concept of intimacy is described as "norms and institutions around sexuality, extending to the social organization of personal relationships, procreation and motherhood" (Verloo and Roggeband 1996, p. 6).

Given that women are the both the lead providers of food and have higher care responsibilities than men in the household, they play a crucial role in managing the families nutritional status and overall health. This responsibility is reflected in research results which repeatedly show that women tend to pay higher attention to hygiene standards in food preparation and provision. However, development interventions, especially in the Global South, aimed to improve access to safe food, often bypass women (FAO 1997). Programs designed to suit women's needs, education, and cultural backgrounds that provide technical information on improving the quality, nutritional status, and safety of food at the household level are needed. Such programs might focus, for example, on home gardens and livestock rearing, which improve access to suitable, low cost, good quality, safe, and nutritional foods. Foods grown at this local level not only lead to greater opportunities for food sovereignty but also increase consumption of sustainable, environmentally friendly foods (that tend to require much lower levels of pesticide and have reduced food miles than alternative products).

Another issue affecting some women in the Global South is health during pregnancy and lactation. In reproductive years, women have special

nutrient requirements in order to assure their own health and that of their child though many societies fail to recognize these specific needs. For example, in some societies, discriminatory practices still exist which prioritize feeding male members of the family before females (often including young girls). Such consumption patterns are obviously unsustainable (in the broad sense of the word) as they have the potential to affect health and do not contribute to improved quality of life for women.

There is much literature which discusses gender-specific differences in eating behaviors (see the entry on ► [Gender Norms and Food Behavior](#)), though this for the most part does not have an explicit sustainability focus. Nevertheless, sustainable consumption strategies must take into account the fact that women and men do eat in a different way. Gender differences in food preferences seem to begin during childhood. Findings from studies on this phenomenon suggest that females and males assign different meanings and values to different types of foods which results in females and males eating differently. Women tend to eat healthier, have higher nutritional knowledge, and show higher preference for eating foods that are included in common dietary guidelines, which means they tend to eat more fruit and vegetables than their male counterparts. This concern for health issues can in part be explained by the fact that women are primarily responsible for care duties. Another explanatory factor for why women are more food literate than men is due to the fact that women are often involved much earlier than men in food-related activities. Men, in contrast, are often cited as tending toward pleasure foods that taste good. They also eat more meat (both more often and in larger quantities) than women, which is significant from a sustainable consumption viewpoint, given that meat production accounts for almost a fifth of all greenhouse gasses according to FAO data. Though this is in part due to role orientation, in the cultural identity literature, this has also been explained by the symbolic meaning of meat (which infers strength and power). An interesting study that highlights an example of gendered differences toward certain food types is

a study on comfort food choices (Wansink et al. 2003). Results showed that most men prefer hot meals to snacks (the three foods most men considered to be their favorite comfort foods were ice cream, soup, and pizza or pasta, which was in contrast to women for whom it was ice cream, chocolate, and cookies). Many men reported that when they ate these foods, they felt “spoiled,” “pandered,” “taken care of,” or “waited on,” indicating that generally they associated these foods with being the focus of attention from either their mother or wife. Women, on the other hand, seem to have the opposite preference for a similar reason (i.e., they liked snack-like foods that were hassle-free).

(3) Empowerment and Access to Participatory Decision Making of Women and Men

The kind of aspects that are related to this third gender dimension include empowerment of women and men as consumer-citizens, participation of women and men in implementation of sustainable consumption instruments in all stages of the policy cycle, access as consumer-citizens to decision making, and participation of consumer-citizens in institutional settings of implementation. This dimension is particularly relevant for changing consumers’ food behaviors (Schultz and Stieß 2009). It is important that more women become involved in decision making at both governmental level and at the level of international policy making, to find solutions to sustainable food consumption issues. Greater representation of women is also needed in food industry boardrooms and in food companies themselves (especially in scientific positions) to help address food sustainability issues from a women’s perspective.

As has been mentioned, worldwide, women are still primarily considered to be the household manager, especially in terms of food provision and preparation. As such, they continue to play a key role to controlling a considerable share of the total carbon emissions produced by a household. This means that they are, and must continue to be, key actors for sustainable consumption strategies (WEN 2007). The most obvious way that consumers can act to promote sustainable food consumption is by voting with

their shopping dollars (i.e., by “boycotting” or “buycotting”) when they purchase food products and services (note that this is referred to in the literature as engaging in political consumerism). It is important to empower all consumers so that they are able to engage in acts of political consumerism in an informed manner. This can be done in many ways, the most obvious being providing them with full information about the sustainability credentials of the product on its label.

Governments, industry, and consumer groups alike promote this sort of “bottom-up” approach to achieving sustainable consumption, where the consumer is positioned as the all-powerful decision-maker and the mandate is for industry to provide as wide of a choice of products as possible, so that the customer can decide which one to purchase. The problem, however, with this sort of approach is that it places the responsibility for sustainable consumption on the shoulders of individual consumers. As has been already stated, in many cases when it comes to food buying, these individuals tend to be women, many of whom are already feeling under immense time pressure due to juggling domestic, care, and paid-labor activities. The image of the confused consumer standing in front of the fresh salad section of the supermarket trying to work out if it is more “sustainable” to buy the organic lettuce, packed in a plastic bag and flown in from overseas, or the conventional (nonorganic), but local, alternative is all too familiar. Without providing full information about the total amount of materials used in the production, transportation, and storage of these products (e.g., water, energy, and pesticides) and the total amount of waste outputs generated in these same process (e.g., greenhouse gas emissions, food wasted), the consumer is, in reality, inadequately equipped to make this sort of decision with any accuracy. A move away from total privatization of responsibility, that is, from leaving it completely up to the consumer to bear the burden for being sustainable in their consumption choices, requires that some of the responsibility for sustainability is pushed back onto other players in the food industry. Cases of this happening can be seen already. Examples include retailers “editing out” (i.e., not stocking)

unsustainable food brands and products such as cafes that choose not to stock coffee that is not Fair Trade certified and supermarkets that choose not to stock certain types of unsustainable fish. Other institutions (e.g., governmental bodies) could also take more responsibility for helping people to consume sustainably, again lifting some of the burden off the shoulders of consumers. Examples of ways they could do this include developing criteria that would allow food products to be more accurately evaluated based on sustainability criteria, devising policies that would encourage the reduction of overall consumption levels or encourage sustainable buying, or by outright banning certain unsustainable food products in some circumstances.

Gender-Sensitive Strategies for Promoting Sustainable Food Consumption and Future Research Needed

Gender differences must be taken into account in order to be able to successfully implement sustainable food consumption strategies. Although strategies and campaigns promoting sustainable food consumption are often devised to be gender-neutral, research shows that gender responsiveness to these campaigns can be remarkably different. The sustainable campaigns which do contain a gendered aspect are generally targeted specifically at women because of their more environmentally friendly consumption attitudes and behaviors.

Given this, it would be useful to search for and communicate specifically sustainable consumption behaviors around food that are more gender available to men (Schultz and Stieß 2009). Furthermore, these same authors argue that it is important that sustainable consumption campaigns are checked to make sure that they do not contain any implicit moralization of women’s responsibility (i.e., by fading out gendered patterns of responsibility for paid and unpaid labor and housework).

There is much scope for further research on creating gender-sensitive strategies for

sustainable food consumption. Areas particularly worthy of further attention include the following:

- Finding ways to ensure that gender perspectives are better integrated into international-level discussions on sustainable consumption
- Generating gender disaggregated databases and gender-sensitive indicators of food consumption
- Conducting gender-specific surveys about environmental motivation and behavior in relation to food behaviors
- Considering how sustainable consumption patterns are shaped by the relationship of gender with further variables such as lifestyles, values, and other sociodemographic variables (e.g., age, marital status)
- Considering gendered income allocation for nutrition
- Using gender disaggregated data on food and nutrition in the design of policies, programs, and interventions for sustainable food consumption
- Supporting the development of gender-sensitive strategies for sustainable food consumption in order to not increase women's workload

Summary

The consumer behavior literature quite clearly indicates that gender is a strong determining factor for many different types of food attitudes and behaviors. Consumption has historically been associated with women and the private sphere. Even today, women are responsible for on average 80 % of the consumption decisions made in private households and are the person that is primarily responsible for meal planning, buying, and preparing food. While this does put them in a good position to be able to do something to improve the sustainability of food consumed by private households, there are a number of ethical issues which are of concern as this entry has highlighted. Three of the key ethical issues related to gender and sustainable food consumption discussed in this entry are ensuring that (1) all women and men have access and support

to resources they need to pursue sustainable livelihoods and improved quality of life; (2) the responsibility for achieving sustainable food consumption is shared equally between women and men, as well between individual consumers and other players in the industry such as retailers and governmental agencies; and (3) sustainable consumption campaigns do not contain implicit moralization of women's responsibility and that ways are found to better communicate messages about food-related sustainable consumption behaviors to men.

Cross-References

- [Gender Norms and Food Behavior](#)
- [Sustainability of Food Production and Consumption](#)

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Synthetic Biology and Biofuels

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Synonyms

Biodiesel; Biogas; Biological engineering; Biomass; Crop fuel; Energy; Genetic engineering; Genetically modified; GM; Green energy; Renewable; Renewable energy

Introduction

Synthetic biology is a field of research that concentrates on the design, construction, and modification of new biomolecular parts and metabolic pathways using engineering techniques and computational models. By employing knowledge of operational pathways from engineering and mathematics such as circuits, oscillators, and digital logic gates, it uses these to understand, model, rewire, and reprogram biological networks and modules. Standard biological parts with known functions are catalogued in a number of registries (e.g., Massachusetts Institute of Technology

Registry of Standard Biological Parts). Biological parts can then be selected from the catalogue and assembled in a variety of combinations to construct a system or pathway in a microbe. Through the innovative reengineering of biological circuits and the optimization of certain metabolic pathways, biological modules can be designed to reprogram organisms to produce products or behaviors.

Synthetic biology is what is known as a “platform technology.” That is, it generates highly transferrable theoretical models, engineering principles, and know-how that can be applied to create potential products in a wide variety of industries. Proponents suggest that applications of synthetic biology may be able to provide scientific and engineered solutions to a multitude of worldwide problems from health to energy. Synthetic biology research has already been successful in constructing microbial products which promise to offer cheaper pharmaceuticals such as the antimalarial synthetic drug artemisinin, engineered microbes capable of cleaning up oil spills, and the engineering of biosensors that can detect the presence of high concentrations of arsenic in drinking water.

One of the potential benefits of synthetic biology research is in its application to biofuel production. It is this application which is the focus of this entry. The term “biofuel” has referred generally to all liquid fuels that are sourced from plant or plant by-products and are used for energy necessary for transportation vehicles (Thompson 2012). Biofuels that are produced using synthetic biological techniques reengineer microbes into biofuel factories are a subset of these.

Entry Road Map

This entry begins with a short historical background that focuses on the initial ethical support and justification for synthetic biofuel research, the impact of this research on public discussion of synthetic biology, and the distinction between it and genetic engineering. The distinction between *first-* and *second-generation biofuels* is introduced. This is followed by a survey of

current research innovations using various *microbial factories*, including bacteria, yeast, and oil (oleaginous) algae.

Ethical considerations associated with synthetic biology research in general and its application to biofuel production in particular will be reviewed. General responses by opponents of all forms of synthetic biology include the claim that this type of technology aims to “play God” and that the unnaturalness of it intervenes in the natural world in ways that are unethical and should therefore be avoided. This justification has been used to attempt to restrict or stop new approaches to biofuel technology that aim to control and co-opt natural selection in order to produce a stable product.

Proponents of this synthetic reengineering suggest that these ethical concerns are unfounded. Synthetic biology merely extends the mechanisms by which artificial selection can be controlled and modified beyond traditional approaches to selective breeding.

Ethical considerations that apply specifically to synthetic biofuel research and technology include issues in the design, construction, implementation, marketable production, and assessment of synthetic biofuel production when compared to food crop biomass-based biofuels. Motivations for synthetic applications that focus on the growing concerns over the high cost of production of crop biomass-produced biofuels and the subsequent food shortages that followed, widely framed in terms of the food versus fuel debate, will be discussed. In addition to these, the ethical issues surrounding the potential impact on human health and the environmental consequences of intentional and accidental release of synthetic products of biofuel research will also be covered.

Ethical discussion surrounding synthetic biology and biofuels is, like the research and technology itself, still emerging. An outline of the current efforts of commissions and consortia set up in the United States and the United Kingdom that have promoted the scientifically informed open exchange of ideas between scientists and the public on ethical issues relating to synthetic biology research and application are discussed.

Historical Background

Synthetic biofuel production seeks to provide less expensive, cleaner, and greener sources of energy than currently used traditional fossil fuels. Perhaps because of this, it has been one of the most publically accepted and perhaps most promising applications of synthetic biology. In a field of research where descriptions of the products of synthetic biology are frequently reported as “designer organisms,” “Frankencell,” or the result of “playing God,” discussion of synthetic biofuels seems less controversial. Its potential benefits are often weighed up against its potential costs: “synthetic biology poses a conundrum because of its double-edged ability to both wreak biological havoc and perhaps wean civilization from dirty twentieth century technologies and petroleum-based fuels” (Weiss 2007).

Although sometimes referred to as genetic engineering, synthetic biology differs from genetic engineering in terms of scale, techniques of manipulation, and application. Genetic engineering focuses on the alteration or manipulation of a few characteristics of an organism that results in transgenic hybrids or genetic chimeras that possess genes inserted from other organisms. Whereas, synthetic biology seeks to reconfigure, design, and construct new pathways, whole processes, or novel systems for the purpose of achieving some desired biosynthetic activity or phenotype (Alper and Stephanopoulos 2009).

First-Generation Biofuel Production Strategies

Current research aims at producing a cleaner biofuel alternative to those that are currently agriculturally produced using food crops. These crop-based biofuels, often referred to as *first-generation biofuels*, rely on agricultural crops as biomass to produce sugar or starch from corn, wheat, or barley and convert this to ethanol through fermentation and distillation processes or rely on oilseed crops to produce triacylglycerols that are then chemically converted to biodiesel.

One of the most heated recent ethical discussions focusing on the use of first-generation biofuel production has been the so-called food versus fuel debates. These have typically centered on discussions about the appropriate use of agricultural land – should agricultural land be used for generating fuel instead of food? The decisions of some farmers to plant food crops such as maize for the purpose of harvesting the biomass to sell to biofuel producers have been controversially linked with an increase in food cost and food shortages.

In addition to the fuel versus food debates, discussion has also focused on the production costs themselves and their impact on the environment. First-generation agricultural crop-based biofuel production demands arable land use and water use in irrigation and provides a fuel source that may not be as cost-effective or renewable as the potential second-generation biofuels which do not require either arable land, irrigation, or the displacement of food crops (Börjesson and Mattiasson 2008; Preston 2008).

Second-Generation Biofuel Research Strategies

Instead of relying on food crops as the source of fuel, synthetic engineered alternatives, or *second-generation biofuels*, rely on using the redesigned microbial cell as the source of biofuel production. Synthetic biological engineering is sometimes referred to as *white biotechnology* due to its focus on renewable energy sources and the reduction of negative environmental effects and the potential biodegradability of its engineered products.

In providing more sustainable avenues of biofuel production, these second-generation synthetic biofuel alternatives present a way to circumvent the controversial fuel versus food debates that have been widely discussed in the various news media and in local and global ethical discussions.

These and other debates have led private and public support of synthetic biology research into carbon-neutral synthetic biofuel alternatives that

may not only provide solutions to the energy crisis but also provide a way to circumvent the continued degradation of the environment through the burning of fossil fuels and greenhouse gas emissions (Martin et al. 2003).

Microbial Factories of Biofuel Production: Prospects and Problems

Synthetic biology builds on past successes and failures – what works in terms of both modules that are highly interchangeable as well as methods and pathways are reused in new projects. Earlier research on another application of synthetic biology research, the production of synthetic artemisinin, provided guidance on how microbes can be used and their tolerance of different types of chemical products. Synthetic artemisinin is perhaps one of the most widely discussed success stories of synthetic biology research. Artemisinin is an antimalarial drug which is now sold commercially by Amyris Biotechnologies which now uses similar technology in the search for a scalable renewable biofuel (Amyris Biotechnologies 2013).

Development of second-generation biofuel requires the use of a microbial factory organism such as the yeast, *Saccharomyces cerevisiae*, the bacterium, *Escherichia coli*, or the single-celled green alga, *Chlamydomonas reinhardtii*, which is then redesigned to produce certain products. To do this, synthetic biology researchers use parts with known functions from a variety of organisms. A catalogue of these parts is used to choose which components can be put together in the cell to build new pathways and as a result produce new chemical products.

One of the initially most promising organisms to construct a potential biofuel factory was the yeast *S. cerevisiae*. This is widely used to produce ethanol from sugar in the brewing of beer. As it is also an organism frequently used in genetics and synthetic biology research, its metabolic pathways and functions are well characterized. Its ability to produce ethanol made it appear to be a good beta test for a new biofuel factory. *E. coli* is another common organism for use in synthetic

biological research in virtue of its proven ability to accept genetic modification with the introduction of foreign genes, the tendency to maintain hybrid networks, and the production of a variety of products (Martin et al. 2003). For instance, Fuzhong Zhang, James Carothers, and Jay Keasling have successfully designed a strain of *E. coli* that implements a biosensor for a metabolite that plays a role in the production of biofuel products using glucose (Zhang et al. 2012). By adding the biosensor to the engineered pathway, their new strain of *E. coli* is capable of trebling the amount of fuel produced (Zhang et al. 2012).

Relying on the knowledge of these and other microbial pathways and modules means that these parts can be both modified and transferred into other organisms to reengineer it to produce a higher ethanol yield or to produce ethanol by consuming a different sugar (such as hexose or xylose) rather than what it would normally utilize (e.g., glucose).

The current research trend in publically and privately funded projects is to investigate the potential use of various species of algae for biofuel production. Algae produce lipids (oil) as a by-product of the process of photosynthesis. The hope is that once the means of harnessing this store of energy is found, algal biofuels may provide an inexpensive alternative source of fuel that can be produced with little more than sunlight, carbon dioxide, and a small amount of water. While advances in synthetic biology research and the understanding of algal alternatives increases, the scaling up of these fuels requires significant further research resolving the problems of system optimization and photosynthetic efficiency as well as solving ways of producing these synthetic biofuels in quantities suitable for commercial use (Georgianna and Mayfield 2012).

A number of other possible organisms have also been considered as particularly suitable for research into the production of synthetic biofuels. Cyanobacteria are another that initially appears promising. Cyanobacteria, like *Synechocystis* sp. PCC 6803, can provide a highly efficient organic system for producing biofuels as they can convert

solar energy and carbon dioxide into biofuel molecules (Wang et al. 2013). Cyanobacteria are particularly good candidates because they possess naturally occurring biosynthetic pathways that produce alkane (a key component of gasoline, diesel, and jet fuel). At present, research into the use of cyanobacteria for synthetic biofuel production is still in the very early stages and well behind that of algae research. However, research focused on reconfiguring these to create an organism that produces alka(e)ne at a rate that is double that of the wild type has been shown to be possible. *Synechocystis* mutants have been constructed that overexpress alkane biosynthetic genes. This research demonstrates proof of concept for the potential use of cyanobacteria for biofuel production. If their photosynthetic pathways were reengineered, cyanobacteria may be able to produce alka(e)nes at a highly efficient rate (Wang et al. 2013).

Synthetic biofuel production relying on either cyanobacteria or algae may provide a possible alternative to fossil fuels. The ethical consequences on the environment have primarily focused on how this new technology would (by reducing the reliance on the burning of fossil fuels and anthropogenic climate change) contribute to a cleaner, greener planet. Other ethical impacts concerning the potential negative effects (to not only the environment but also on human health) have been raised by Friends of the Earth (2013). Exposure to synthetic biological materials by lab technicians raises a particular set of concerns that centers on both the kinds of products produced by synthetic biology and their potential risks. The potential for accidental ingestion (e.g., breathing aerosol versions of synthetically produced algae biofuel), the unintended transfer of genetic materials through viral and bacterial elements, the inadvertent contamination or dispersal of nanomaterials and nanoparticles by lab technicians, or the potential escape into the environment of such products has been discussed. These are a concern because of the projectible negative consequences but more so for the unexpected and potentially catastrophic impact on human health (e.g., that ingestion of synthetic materials may lead to disastrous unintentional

modifications of the human genome, epigenome, and microbiome) (Hoffman et al. 2013).

Production Problems and Solutions: Tricking Biological Systems to Redirect the Process of Evolution

Although promising, the reengineering of biological pathways to produce high-yield microbial biofuel factories has encountered some formidable obstacles in virtue of their biological basis. Synthetically engineered organisms, circuits, parts, and systems, like their organic counterparts, have the capacity to adapt to new environments and to evolve over generations. Because these engineered synthetic microbes are biological systems that continue to have the propensity to evolve and mutate, understanding how to design an organism that has predictable behavior is difficult. Their functioning is designed according to the interests of the particular application (e.g., biofuel production) within the lab.

If these built circuits prove cumbersome for the organism once it is in the natural environment, they will be replaced by more evolutionarily suitable pathways. Engineered circuits created in them that do not provide a benefit to the organism may be disposed of in subsequent generations. That is, if producing the high-yield by-products that they are designed to produce does not provide the organism with an evolutionary advantage or increased fecundity, it is likely that this pathway may be lost in subsequent generations. Once a mutation occurs in a later generation that removes part of the biologically taxing pathway responsible for the high-yield production, these mutated organisms may gain an evolutionary advantage over those with the engineered pathway (Kendig 2012, 2013). Over generations, this would eventually lead to a population that would lack the engineered pathway and one where the mutation would be common. As a consequence of this natural selection, the resulting population would produce a lower biofuel yield (Kendig 2012, 2013).

To solve this problem, researchers are currently seeking ways to *trick* the biological system

and redirect the process of evolution for the purposes of producing a higher yield product than the organism would produce (Jia et al. 2010). Finessing the organism's circuitry so that it is stable in a variety of environmental conditions and continues to produce high-yield products is of paramount importance. Ethical and environmentally responsible release of an organism that is fully characterized in the controlled context and known parameters of the lab to a new and changing context of the environment requires prior knowledge not only of the organism or circuit's design and functionality but also its potential mutability and evolvability in an uncontrolled environment.

Ethical Concerns Over the Unpredictability of Potential and Irreversible Impacts on Ecosystems

Evolvability and the co-opting of mutability is not just a production problem; it also opens up a number of ethical considerations. These questions make up a more nuanced set of issues that relate specifically to synthetic biofuel production. Rather than the more often broadly referred to ethical concerns mentioned when discussants claim that this kind of technology should not be advance because it involves scientists "playing God," these concerns are directly informed through an understanding of the specifics of biofuel research and production. Much of the worry with regard to co-opting of evolvability is the downstream effects or unforeseen consequences of "meddling" with nature.

A frequently used rebuttal to worries that synthetic biologists are "playing God" is the suggestion that farmers have been crossing and breeding livestock, companion breeds of animals, and food crops for a long time and that synbiology is just a technological extension of this. As such, proponents conclude ethical concerns over biologists overreaching in the creation of these synthetically reengineered organisms are thought to be unfounded. The morality of these kinds of synthetic interventions has already been treated to a long and relatively unproblematic beta test in

the thousands of years of artificial breeding. Opponents counter that the new technology is dissimilar enough to cause ethical concerns unrelated to that history.

Coalitions such as those that make up the undersigners of the *Principles of oversight for synthetic biology* (2013) – a document of the International Center for Technology Assessment, ETC Group, and Friends of the Earth – have also been instrumental in the initial ethical discussion surrounding synthetic biology research and concerns about the unpredictability of risks and worries over their possible impacts. This coalition includes civil, social, labor, as well as religious groups concerned with multiple potential impacts that include those economic and environmental.

It raises concerns about the rapidity of scientific research and innovation in synthetic biology without appropriate regulation or consideration of potential risks. They advocate the explicit use of the precautionary principle, specific regulations on synthetic biology, assessment of harm to public health and environment, increased access to synthetic biology research and active participation of public fora, liability and accountability of manufacturers of synthetic biology technology, and increased effort to protect the economic interests of environmentally vulnerable groups and countries (Hoffman et al. 2013).

The undersigners suggest that in order to preclude potential damage that could result from the products of synthetic biology research, “Governmental bodies, international organizations and relevant parties must immediately implement strong precautionary and comprehensive oversight mechanisms enacting, incorporating and internalizing these basic principles. Until that time, there must be a moratorium on the release and commercial use of synthetic organisms and their products to prevent direct or indirect harm to people and the environment” (Hoffman et al. 2013). This moratorium is justified by the coalition because of the potential for long-term harm to the environment. The document suggests that the risks to niche degradation may be long-lasting. For instance, synthetic organisms could be the new super-invasive species crowding out

other native species within a particular ecological niche. If synthetic organism parts are highly modular, their genes may lead to the contamination of other species by virtue of their high level of transferability within the environment through horizontal gene transfer.

The Shape of Ethical Discussion So Far

Ethical discussion surrounding synthetic biofuels has come in two sorts so far. The first suggests that the ethical issues that synthetic biology addresses are the same as other emerging technologies and fundamentally contiguous with those that have been and continue to be discussed. These are the traditional ethical questions of moral behavior, rights and responsibilities, and questions of moral agency. The other suggests that emerging technologies each present fundamentally new sets of ethical issues.

The latter suggests that the resolution to these issues requires consideration not only of the ethical reasoning supplied to us by reading Kant, Aristotle, Bentham, Mill, Anscombe, or Hobbes’ approaches to the questions of how should we act or questions concerning what kinds of characteristics are good for someone to have. But they also require engagement with the specific scientific research and technology itself in order to fully inform ethical reasoning. Both are required to answer questions such as the following: What are the limits of human intervention within the natural world? Should we intervene and co-opt the selective processes of evolution and bend these to our will? How should we behave as researchers? What responsibilities do we have for the society, the environment, and for the unintended effects of the new technology created? Who owns the products of these types of research or the rights to use the technology once patented?

Insofar as synthetic biology is a relatively new form of scientific research and the applications to biofuel in their early stages, ethical discussion surrounding these is still in the investigative stages of development relying on panoply of reference points to gain traction on new ethical questions.

The ethical discussions of synthetic biology research in general and the application to produce biofuels in particular have progressed along very different routes to that of the discussions surrounding genetically modified foods. The most striking difference has come in the public perception of this new technology and the encouraged exchange between research bodies and the public in open forums. Commissions and research units such as the aforementioned US Presidential Commission for the Study of Bioethical Issues, the Hastings Center Ethical Issues in Synthetic Biology project (launched in 2009 and funded by the Alfred P. Sloan Foundation), and the SYNBIOSAFE consortium (set up in 2007 and funded by the European Commission) have promoted scientifically informed ethical discussions that bring together key researchers, policy makers, academics, and the public with the goal that through dialogue there can be increased understanding and appropriate regulation of this new biotechnology in a way that is responsive to the interests of scientific innovation and public concern.

In doing so, these cross-disciplinary bodies aim to focus less on the speculative ethical debates of the potential problematic products or misuses of synthetic biology research. Instead, their foci are on current research problems and issues with practical applications in the not-too-distant future. Open debates which inform the public about current research, objectives, and technological applications rather than spurious conjecturing based on worries derived from science fiction and hypothetical slippery slope arguments have been the goal of these commissions and consortia.

Towards Scientifically Informed Ethical Discussion

The promise of a cheaper, greener alternative to fossil fuels is an attractive application of synthetic biology research. But with the capability to construct organisms for this and other applications comes a veritable flotilla of ethical considerations. Including those already discussed in the

foregoing, these concern each stage of development, from research and design to the production, use, regulation, impacts on the environment, modes of release and dissemination, public perception, and marketing.

In response to the J. Craig Venter Institute's 2010 announcement that they had created "synthetic life" by digitally crafting DNA and inserting it into a living bacterium to produce a new self-replicating bacterium, *Mycoplasma mycoides* JCVI-syn1.0, the US Presidential Commission for the Study of Bioethical Issues produced the report, *New Directions: The Ethics of Synthetic Biology and Emerging Technologies*. This report provided guidance and consideration of policies, governance, and practices that would enable synthetic biology research and applications of it to be pursued in an "ethically responsible manner" but did not endorse further federal regulations on synthetic biology research (Presidential Commission for the Study of Bioethical Issues 2010). In doing so, the Presidential Commission followed the recommendations already laid out by the Engineering and Physical Sciences Research Council, the Biotechnology and Biological Sciences Research Council, the Economic and Social Research Council, and the Arts and Humanities Research Council of the United Kingdom (Anderson et al. 2012).

In the *New Directions* report, the Presidential Commission set out five principles to guide discussion of the ethical and social impacts of synthetic biology research and technological applications. The report's recommendations are framed in terms of these five principles. These are as follows: intellectual freedom, democratic deliberation, responsible stewardship, and considerations of justice and fairness. With intellectual freedom, responsibility for the implications of synthetic biology research and technological applications is put largely in the hands of the researchers to self-regulate rather than promoting a top-down approach for regulating practice. The US and UK initiatives stress prudence and responsiveness with regard to the emerging area of research still in its infancy.

Crucial issues mentioned within the US report focus on responsible stewardship to the world and its occupants, including considerations of nonhuman animals, plants, and future generations, as well as the environment as a whole. Consideration of these groups within the context of a discussion of obligations is not new. Although not cited, the report's main ethical foci seem to rely significantly on philosophical ideas similar to those laid out in 1990 by Edith Brown Weiss in her seminal article, "Our Rights and Obligations to Future Generations for the Environment." To summarize, Weiss suggests that the rights of each generation are to receive the planet in no worse condition than did the generation that came before it. This would mean that each generation should inherit comparable natural diversity and have similar access to the environment and its resources as did the previous generation. She suggests that rights and obligations do not arise *de novo*, but instead derive from an intergenerational relationship that each generation shares with those in the one preceding it as well as those in the subsequent generation yet to come (Weiss 1990).

Summary

Scarcity of resources and the unsustainability of the continued use of fossil fuels drive the synthetic biological engineering of biofuels. The initial sources of biofuels based on collecting and fermenting the biomass of food crops (such as corn) proved highly controversial. The growth of corn ethanol producers and the increase in food shortage attributed to the subsequent worldwide backlash and contributed to much critical discussion. These first-generation biofuel discussions concentrated on the ethical impacts of agricultural land use for biofuel crops and limited water supplies previously used to produce food that were now being used to produce fuel instead.

Despite the problems with first-generation biofuels, investment in second-generation synthetic biofuels by private companies as well as government support of research (especially in the United States) has been significant (Tyner et al. 2011).

If the demand and pursuit of liquid transportation fuels continues, synthetically reengineered alternatives which provide functional equivalents to fossil fuels may be the greenest option as they may offer a more renewable avenue to the production of fuel.

Although synthetic biofuel production shows much promise as an alternative energy source that does not require the use of non-sustainable feedstocks or expensive carbon sources, its ability to replace fossil fuel consumption rests on developing the technology to produce it economically while reducing any negative environmental impacts. Despite their overuse, contribution to anthropogenic climate change, and the source of frequent international disputes, the replacement of fossil fuels will still rely overwhelmingly on economic production of an efficient, high-yield alternative source of energy (Georgianna and Mayfield 2012).

As synthetic biology is still a new field of research and only some of the potential applications are just being realized, open discussion with scientists, policy makers, and the public may provide the best prospects according to many commissions and consortia in the United States and United Kingdom. Discussion of the actual scientific research and its accurate dissemination to media and the public would allow productive and democratic exchanges of a well-informed public and a responsive scientific community collaborating to evaluate the direction of new research. The goal is for these discussions to stimulate active enlightened deliberation directed towards navigating the best route(s) for ensuring the pursuit of this research, critical evaluation of its potential positive and negative impacts.

Cross-References

- [Agricultural Sciences and Ethical Controversies of Biofuels](#)
- [Biofuels: Ethical Aspects](#)
- [Hybridity in Agriculture](#)
- [Land Acquisitions for Food and Fuel](#)
- [Water, Food, and Agriculture](#)

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Synthetic Meat

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Synonyms

Cultured meat; Hydroponic meat; In vitro meat; Shmeat; Test-tube meat; Victimless meat

Introduction

The goal of creating viable synthetic meat in the laboratory and eventually in the factory has been driven by economic, environmental, and ethical concerns about the current state of animal agriculture. Livestock production ranks as one of the leading causes of deforestation, global warming, pollution, and water depletion, problems that will be exacerbated as the expanding middle classes in countries like China and India demand a Western-style, meat-heavy diet. The United Nations Food and Agricultural Organization estimates that “Global production of meat is projected to more than double from 229 million tons in 1999/01 to 465 million tons in 2050” and that the “environmental impact per unit of livestock production must be cut by half, just to

avoid increasing the level of damage beyond its present level” (UNFAO 2006).

This technology, currently in its infancy with, as yet, no viable commercial product, takes animal fat and protein cells grown on a collagen scaffold in a nutrient medium and then shapes the cells into a product resembling its predecessor in conventional agriculture. Most likely, hamburgers and nuggets would be lab grown long before steak, since growing complete muscle tissue, with its complex network of membranes and filaments, would require a three-dimensional architecture and not just a single layer of cells. Advocates suggest that animal welfare and environmental considerations would be addressed using this process and that nutritional value could also be improved, since the composition of synthetic meat could be completely predetermined. A number of obstacles must be addressed before laboratory-based meat reaches the grocery store: the procedures must be perfected and brought up to scale, and the public must be reassured that synthetic meat is every bit as “real” as meat grown on an animal.

History and Technique

Winston Churchill first wrote about lab-grown meat in his 1932 book, *Thoughts and Adventures*, musing that it would be much more efficient to simply grow a chicken breast rather than a whole chicken. Churchill had probably heard of Alexis Carrell at the Rockefeller Institute, who kept a piece of chicken heart tissue alive in the laboratory for 20 years (Levine 2008). Cultured meat has appeared in a number of science fiction novels, including Frederik Pohl and C.M. Kornbluth’s *The Space Merchants* (1952), William Gibson’s *Neuromancer* (1984), and Margaret Atwood’s *Oryx and Crake* (2003). While never reaching the widespread use depicted in novels, the technology needed to produce meat in the laboratory continued to advance throughout the twentieth century.

In vitro techniques have been a standard part of laboratory-based science since 1907, when Ross Harrison cultivated frog nerve cells in

a lymph medium at Johns Hopkins University (Corning Life Sciences 2007). Since then, many practical and research applications for the much-improved technique have been discovered, including investigating the normal growth and development of cells, testing new drugs and products for toxicity and effectiveness, producing biological factors like proteins for therapeutic use, and growing tissues for treatment of wounds and diseases (Chaudry 2011). The chief difference between earlier forms of cell tissue and the technology needed for laboratory-based meat is the sheer scale necessary to produce food from this procedure, although industrial levels of biological compounds have been created in the past, as in the polio vaccine of the 1950s and its other vaccine successors.

Notable attempts have already been made to take in vitro cultivation of cells into the domain of food production. The first patent on in vitro meat for human consumption was recorded by the European Patent Office in 1999 on behalf of three citizens from the Netherlands. Several experiments have taken place to make the technology viable. Morris Benjaminson at Touro College in New York experimented with growing goldfish fillets in research funded by NASA, with the hope that eventually astronauts could grow their own food in space without the need for processing animal excrement in addition to human waste (Sample 2002). Benjaminson took strips of flesh from very large goldfish and kept them in a serum derived from fetal cows and successfully coaxed the strips of muscle into growth (Sample 2002). Benjaminson dreams of a day when countertop bioreactors, “like a coffee maker,” will produce meat for consumers right in the home (McIlroy 2006).

Research conducted by Mark Post at Maastricht University in the Netherlands uses muscle stem cells in the hope that one day an artificial hamburger could be created by blending these cultured muscle cells with cultured fat cells. The already differentiated muscle stem cells, which repair muscle damage in a normal organism, do not reproduce indefinitely, so new cells (harvested from living animals) would need to be added continually to make the procedure

work commercially (Krijnen 2012). After some problems initially with the pale color of the experimental product, Post held the first public taste test of a lab-grown hamburger in August of 2013.

Now that the concept of lab-grown meat has been proven in labs, future generations of researchers will need to build the technology on a larger scale, ensure that the appearance and flavor of the product meet consumer demand, and find partnerships with companies and investors to bring the product to market. Especially important will be the development of serum-free techniques, as the existing fetal bovine serum presents concerns about animal ethics as well as cost. The serum substitute Ultrosor G, although also costly, has shown some promise in research trials: a mushroom-based growing medium could theoretically be developed as a low-cost alternative (Dattar and Betti 2010).

A Potential Solution to Inefficiency

Confined Animal Feedlot Operations (CAFOs) and even more traditional grazing practices have a low rate of conversion from silage or feed to the eventual meat that makes it to the dining table. Although estimates vary widely, “beef” has an approximately 8:1 feed ratio, taking 8 lb of feed to produce 1 lb of flesh, with “pork” more efficient at a 3:1 feed ratio, and chicken and fish falling in line at about 2:1. The eventual cost to producers will change from season to season with the cost of grain, the cost of petroleum, and prevailing interest rates. Factors like nutritional balance, air temperatures, and daily exercise also affect the amount of food necessary to produce meat. Traditional agricultural practices like rotational grazing reduce the need for processed and transported food, but such practices constitute a small minority of the meat that goes to market. Even lacking humane and environmental factors, meat producers have economic incentives to increase the bulk of the animal with a lower amount of feed.

Lab-produced meat advocates suggest that an in vitro life form, devoid of the need for

locomotion and sensation, would “waste” less energy compared to traditional farm animals. Sewage lagoons and other manure management problems created by intensive livestock farming would be eliminated, and with them methane pollution, a large contributor to global warming. Experts project that the process of growing lab-based meat would be faster than the time required to bring a living animal to maturity at the time of slaughter, and because such facilities could be stacked vertically, land use would also be reduced (Dattar and Betti 2010).

By growing only muscle and fat cells necessary to produce a reasonable simulacrum of the meat-based products that consumers want, the amount of inputs (such as water and nutrients) needed to produce in vitro meat would be reduced. Animal agriculture has already industrialized to a great degree, and lab-produced meat continues this process even further by shifting from an animal with biological habits to industrial tissues that can be readily tailored to the needs of the factory. The labor-intensive and comparatively slow process of slaughter and dismemberment can be eliminated altogether in favor of a completely streamlined production of “steaks,” “nuggets,” and “cutlets” that resemble and taste like their predecessors in the old agriculture. Transportation costs would be reduced by bringing the growth process to the same physical location as production and packaging, eliminating the need for the shipment of live animals. Nutrient material would presumably still need to be shipped, but savings could be enacted by bringing in vitro facilities closer to grain producers who would presumably still be needed to produce the nutrient bath needed by the in vitro life form.

Reduction of Animal Suffering

Proponents of artificial meat consider it to be a “victimless,” harm-free form of agriculture (McHugh 2010). Indeed, People for the Ethical Treatment of Animals (PETA) has offered a one million dollar reward to the first lab that can produce a “real artificial” chicken nugget

(PETA 2012; McHugh 2010). It should be noted that in vitro procedures are not and probably will never be fully free from ties to living animals, as the stem cells used in the process, which have already differentiated into tissue types, must be harvested from somewhere. The techniques also use serum derived from living animals in order to instruct the cultured cells to replicate. To date, lab-based meat experiments actually amount to animal-intensive undertakings. The perfection of the technology may reduce this dependency but will probably not sever all ties to traditional, living organisms. PETA support notwithstanding, many vegan animal advocates will not accept the claims of lab-produced meat as “harm-free.”

Vegan and vegetarian critics of animal agriculture insist that feeding something already edible to animals constitutes an inherently wasteful practice that should be eliminated. Food crops like corn and soybeans could be fed directly to humans, resulting in much less waste than converting foodstuffs into meat. The cultural habit of meat eating dies hard, however, and many animal advocates would be willing to accept lab-grown meat as a way of transitioning long-term meat eaters away from conventionally grown meat products. Lab-grown meat would likely result in the continued use of animals in its production, but nowhere near the number of animals killed in current agricultural practices. Ethical arguments about animal suffering are intrinsically linked to the above-mentioned questions of efficiency, as the increased efficiency of lab-grown meat would reduce the need for industrial farming.

Containment of Disease and Reduced Use of Antibiotics

Unlike conventional animal agriculture, in vitro meat could be grown in a sterile environment, reducing the risk of animal-borne pathogens and removing the need for antibiotics (Dattar and Betti 2010). Food scares like the outbreaks of bovine spongiform encephalopathy (BSE, popularly known as mad cow disease) and instances of

E. coli contamination have raised concerns about the safety risks of today’s food systems, which tend to aggregate plant and animal foods from many different points of origin, increasing the risk of cross-contamination (Jin et al. 2004; Centers for Disease Control and Prevention 2012). Lab-grown meat could be cultivated, processed, packaged, and sealed at the point of origin, significantly reducing the potential for the spread of disease.

Animal agriculture currently accounts for upwards of 70 % of all antibiotic use, which contributes to the development of antibiotic-resistant strains of bacteria (Hielig et al. 2002). Although the exact amount of “epidemiologic ‘spillover’” from farms to humans of resistant strains is uncertain, “there is no question that the phenomenon does exist” (Hielig et al. 2002). Such heavy antibiotic use stems from feeding cattle – ordinarily ruminants – corn and soybeans that they cannot digest easily, resulting in ulceration and infection that must be treated. The stress of crowded and unsanitary confinement also renders animals more susceptible to illness. Antibiotic use makes meat production more profitable, but it has a tremendous negative impact on public health (Hielig et al. 2002). Doctors and researchers must continually search for new drugs as bacteria become more and more resistant to the existing antibiotics.

Nutrition and Obstacles to Public Acceptance

A study published in the *Archives of Internal Medicine*, combining the results of two previous studies with over 100,000 subjects followed over decades, reported an increase in mortality from cancer and cardiovascular disease (as well as an increase in overall deaths) as a result of consuming red meat (Pan et al. 2012). Risk of mortality was slightly higher across categories for processed meat than for unprocessed meat (Pan et al. 2012). The study reported that 9.3 % of deaths in men and 7.6 % deaths of women in these cohort groups could be prevented if red

meat consumption were kept below 0.5 servings per day (Pan et al. 2012).

Parsing the exact implications of this study for synthetic meat would require additional research, specifically, an isolation of the detrimental nutritional aspects of conventional meat and a comparative nutritional study of traditional and synthetic meat. Lab-grown meat could, in principle, be manufactured according to any nutritional profile, but nutrition would need to be matched against the desired flavor and appearance to meet consumer demand. Reducing fat content, for example, would make the final product tougher and less palatable, particularly for North Americans and Europeans, who have grown accustomed to corn-fed beef and pork.

If the public could be sold on the benefits of lab-grown meat in terms of its nutritional and ethical value (by no means a foregone conclusion), the question would still remain as to the “ick” factor of *in vitro* meat. Genetically modified foods still spark a great deal of controversy, even though consumers have to date largely lost the fight for labeling requirements. “For more than a decade, almost all processed foods in the United States” have contained ingredients from genetically modified plants (Harmon and Pollack 2012), a fact quietly lost on most shoppers. It could be that the inevitable fight over synthetic meat would proceed initially with a great deal of bluster followed by the same grudging acceptance. Most likely, lab-grown meat would exist alongside traditional meat and plant-based meat substitutes as a new niche in the marketplace.

The question remains as to whether this small segment of the market would be large enough to get the economics of artificial meat to work well enough to sustain production. Consumers have had decades to adjust to vegetable-based meat substitutes, and the available products have improved greatly in taste and texture. Meat substitutes from companies like Morningstar Farms and Gardein have enjoyed increased popularity and appear in the freezer sections of most grocery stores, although unfamiliarity with the products as well as concerns over taste and texture

continue to keep meat eaters away (Hoek et al. 2011). Ethical and environmental arguments do not appear to sway meat eaters to try vegetable-based fake meat, and researchers contend that improved taste would be more likely to do the trick (Hoek et al. 2011).

If lab-grown meat approximated the taste of traditional meat no better than plant-based meat substitutes, it seems unlikely to succeed in the marketplace. To overcome consumer reluctance about the newness of the product, it would have to taste virtually identical to traditional meat and compete in price, taste, and appearance with plant-based meat substitutes. These hurdles will be very high, though not impossible, to overcome, although it may take years if not decades for this to happen.

Beyond questions of taste, cultural practices around food and the common table also stand in the way of an acceptance of lab-produced meat. The home and hearth are identified with the organic and the natural and a pastoral ideal that may not reflect the reality of today’s factory farming. The idea of producing meat in a sterile facility further removes food from the landscape in a way that many consumers would find unsettling. The nature/culture divide may not exist in an absolute sense, but it still informs the way that people think about food. Wholesomeness of food products is tied to an imaginary sense of naturalness very much related to the family farms of the early twentieth century. Lab-produced meat has some very high, though not insurmountable, cultural barriers to be overcome. Since the public has accepted the industrialization of meat production, the transition to lab-grown meat can be viewed as the next logical step in this process.

Summary

Lab-grown meat has numerous potential advantages over the current practices of large-scale animal agriculture. Environmental problems like deforestation and pollution could be mitigated by a switch to synthetic meat, and the new technology has the potential to alleviate, though perhaps

not eliminate, animal suffering. Additional benefits include lower risk of animal-borne disease and a more nutritious product. The current state of the technology relies on the cultivation of muscle cells in a collagen matrix, using fetal bovine serum as a nutrient bath. If in vitro meat is to become a mainstay, the technology must be scaled upward to produce consumer quantities at a lower cost. Many objections will have to be addressed, including remaining doubts about animal welfare, the perceived unnaturalness of the product, and anxieties about the newness and difference of lab-based food.

Cross-References

- [Aesthetic Value, Art, and Food](#)
- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Biopharming](#)
- [Climate Change, Ethics, and Food Production](#)
- [Food Risks](#)
- [Gustatory Pleasure and Food](#)
- [Meat: Ethical Considerations](#)

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Systemic Ethics to Support Wellbeing

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Synonyms

Co-determination; Interconnectedness;
Interdependency; Interrelatedness

Introduction

This section makes the case for systemic ethics to guide a new form of democracy and governance to protect the common good and the global commons,

based on recognition that caretaking for well-being is “an idea whose time has come” (<http://www.health.govt.nz/publication/idea-whose-time-has-come-new-opportunities-health-impact-assessment-new-zealand-public-policy>).

The axiom on which systemic ethics for caretaking is based is that we can be free and diverse to the extent that our freedom and diversity does not undermine the rights of others or future generations of life. This section provides an overview of systemic ethics, based on considering the consequences of our thinking and practice for ourselves, others, and the environment. It sums up research on systemic thinking and practice (praxis) on reframing sociocultural values imbedded in not only democratic rights but also democratic responsibilities to others (including the voiceless and sentient beings), the environment, and future generations.

Caring stewardship is a process resulting from thinking and practice based on an understanding that what we do to others and to the environment, we do to ourselves and to our children. The land is placed first by First Nations internationally (Rose 1996). Post-colonialism and Indigenous knowing is important in understanding what stewardship entails for our relationships with others, the environment, and the next generation of life. Systemic ethics underpins the case that citizenship rights need to be scaled up to enable people to think in terms of the global commons on which we *all* depend for our survival. Contractual rights – as defined by the social contract between the citizens and the nation-state – do not go far enough to protect common needs, nor does the social contract protect the global commons (which includes air, water, soil, and the genetic code of life). The understanding of who we are and how we relate to one another is a starting point for exploring “our identity as caretakers.”

Recognition of Our Dependency on the Land

The environment affects people through the quality of the air they breathe, water supplies, and agriculture, and people in turn affect the

environment through the way they think and practice. The way we think and practice has ethical implications for the way in which this generation uses the planet’s resources and has implications for future generations of life (see Hulme 2010). We have all heard the expression “Less is more” as applied to unpretentious good taste – rather than poor taste based on ostentatious extravagance and greed which leads to impoverishment – and in all probability life as we know it.

The Ministry of Environmental Affairs and Tourism, South Africa (2004, p. 41), cites Rosenberg:

current patterns of consumption by 20 % of the world’s richest people indicate that they consume 45 % of the meat and fish, own 87 % of the cars, use 84 % of paper and 75 % of all energy resources. . . . They also generate 75 % of the annual global pollution.

Different interest groups have different perceptions, emotions, and values about the consumption and the nature of property and power to make decisions ranging from neo-Marxist arguments developed by Noam Chomsky (2005) and John Pilger (2002) about new forms of colonialism to arguments about the crisis and collapse of capitalism, to social democratic arguments about the reform of the market (Held 2004; Wilkinson and Pickett 2009), and to green democratic arguments about the way people can mobilize change (Dryzek 2010) and Indigenous standpoints (Atkinson 2002) on the long-term implications of inequity and greed – some of which have been taken up by communitarian (Etzioni 2004) views on global stewardship and, most importantly, critical reframing (Hulme 2009, 2011; Beck 1997).

Where one places oneself on the continuum of values has implications for the **governance** of people and resources based on the way property and consumption are defined and for the **inclusion** of the marginalized in policy decisions. Furthermore, Urry (2007) highlights the implications of living in a world where the majority are urban based and reliant on the carbon economy for cooling and the transport of their food to the city:

“... the world went urban on 23 May, 2007, this being ‘transition day’, when the world’s urban

population exceeded the rural for the first time. One consequence is that the proportion of the world's population that are poor is inexorably rising, with the proliferation of massive 'global slums'" (Urry 2007: 197)

Urry raises the prospect of 'failed city states:

"unable to cope with oil shortages and the droughts, heat waves, extreme weather events, flooding, desertification and so on. Their instabilities spread across borders, affecting neighbouring regimes through forced migrations, weakened public health and degraded conditions of life (Paskal 2007; Urry 2010:197)

The Sydney Peace prize winner Vandana Shiva sums up the challenge for this century as one of preventing the commodification of life (see <http://www.youtube.com/watch?v=UOfM7QD7-kk>, <http://www.navdanya.org/news/229-awesome>, <http://www.vandanashiva.org/>).

Multinational companies and the WTO have made it possible to patent the conditions of life, thereby causing almost a quarter of a million suicides by Indian farmers who cannot afford to purchase the seeds and the pesticides that are needed (despite the claims by the manufacturers). Furthermore, the attempt to criminalize farmers who store old varieties of seed could lead to very vulnerable food monocultures. The idea that the very basis for life – seeds and genes – can be patented is part of the process of commodifying people, animals, and the fabric of life.

Crish and Fayne (2010) stress the costs of declining agriculture which are felt by women and children in the cities. Most of whom survive through social support networks and informal trading – estimated to be 500,000 traders in SA (2010, p. 12) and 70 % are women. They cite the International Labour Organization (2003): *Street Traders and Their Organization*. According to the latter, extreme poverty, prostitution, and AIDS are the result of food insecurity, and children have less protein and less micronutrients – iron, iodine, and vitamins.

Agricultural production has contracted in South Africa.

"Life expectancy actually declined over the past 40 years in ... six states in ... sub-Saharan Africa: the Democratic Republic of the Congo, Lesotho, South Africa, Swaziland, Zambia and

Zimbabwe." 40-year Trends Analysis Shows Poor Countries Making Faster Development Gains. UNDP 4 November 2010 <http://hdr.undp.org/en/reports/global/hdr2010/news/title,21577,en.html> Accessed 2 February 2011.

In South Africa, Crish and Fayne (2010) argue that cash, not rural, agriculture is the way in which the majority feed themselves in South Africa. For example, "in 2000 only 5 % of all South African households used agriculture to supplement household food. ..." By 2020, the urban populations of less developed countries will exceed rural populations and continue to climb – three billion more will soon be in the cities of the developing world. Food can be the single largest expense in households – 39 % of the average household expenses. Internationally, the global financial crisis combined with the effects of climate change will lead to higher levels of starvation. In South Africa alone, farming jobs have contracted from one million workers in 1993 to approximately 660,000 workers at the end of 2010. The nongovernmental organization coalition found that "life is getting harder for the rural poor" and that female-headed households are amongst the poorest. Stunting and infant mortality have "risen from 48 to 54 per thousand for Africans," while "for whites it fell from 7.4 to 7.3 per thousand."

Ethically, the focus ought not to be merely on poverty and food security, but instead on the extreme wealth of *some* which contrasts with the underfed and the starving two thirds of the world's population. Overconsumption and obesity are a result of *both* life choices and life chances. The link between obesity and capitalism is clearly the result of resource- or time-poor people who do minimal exercise and rely on fast food.

The challenge for developed and developing nations is to achieve or maintain:

Access to safe housing (including energy and water), appropriate education, and employment to enable social and environmental justice; but within

Livable cities that are in turn supported by Sustainable regions that support agriculture, animal husbandry, forestry, and fishing.

The impacts of climate change (and possible actions to minimize the impacts) present

a complex problem to communities and governments around the world. The challenges facing the most marginalized in the community are challenges that could be suffered more widely as the impact of systemically linked social, economic, and environmental challenges leads to accelerated changes to the livability of cities and regions on which they depend. Climate change will affect the standard of living that is taken for granted by the privileged (Fiona Stanley, Hawke Oration lecture 17 November 2008).

Stewardship philosophy needs to be reapplied (see Ottawa Health charter 1986, <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>; Brundtland Report 1987, <http://www.un-documents.net/wced-ocf.htm>).

The social contract protects citizens within the nation-state, but those who do not vote (young people and the disabled) rely on the care of others. Those who fall outside the mantle of the nation-state remain without protection. In more equal societies, people consume less and are less status conscious. Some scholars (Dryzek 2010) propose that not achieving those simultaneous aims affects human rights and the groundswell of democracy that seeks to limit the effects of climate change through social and environmental justice. The Club of Rome research needs to be extended to *engage with global citizens*, which is perhaps one of the reasons it did not gain traction. Participants need to consider issues in terms of expanded pragmatism (namely, the consequences for their own children) which could have helped people develop *the will* to make changes in their own lives and to lobby for environmental issues. People need to want and demand “the impossible” (http://www.salon.com/2011/10/24/judith_butler_at_occupy_wall_street/), namely, affordable food and responsible state-market and civil society coalitions.

The Capabilities Approach Guides Systemic Ethics

Systemic ethics (McIntyre-Mills 2010) is based on understanding the social, economic, and environmental consequences of:

The **extreme luxury** enjoyed by the few is at the expense of the majority *in this generation* (Davies and World Institute 2008) and at the expense of the next generation.

The **zero-sum approach of “us/them”** thinking leads to shifting responsibility and blame for resource use and resource management.

The **denial of the links** across the social and environmental system in relation to the consumption of energy through wasteful living. We need to move beyond debate couched in mutually exclusive narratives and recognize that we can be free and diverse to the extent that our freedom and diversity does not undermine the rights of others or the next generation of life. The limits to diversity are set by our dependency on the land of which we are part.

The threefold aim of systemic ethics is to make a case for:

Processes and structures that *enable regional, transnational* democratic dialogue on difficult issues of social justice and sustainability

Enabling participants to consider the consequences of socioeconomic decisions for this generation of life and the next

Controlling rights so they cannot override responsibilities to save resources for the next generation

The test for the moral law is being prepared to live with decisions if they were to be applied to oneself and one’s own children. This is the basis of social contractualism developed by John Rawls (1999) who explains in “The Law of Peoples” that this “veil of ignorance” approach is the basis for liberal democracy. The problem is that the social contract is too limited to take into account the needs of the powerless, such as the disabled, children, and animals. Compartmentalized thinking undermines accountability and risk management.

‘A priori’ means ethics based on the moral law and a sense of duty – irrespective of the consequences. Traditionally, idealism and Kantian ethics is considered to be focused on the duty of human beings. In this section, a case is made for duty – based on considering the consequences of decisions for this generation and the next. Kant’s “moral law” focused on human beings.

The humanist idea of respect (based on treating people as ends in themselves and not as a means to an end) has been translated into practice in limited ways.

A case needs to be made for extending the social contract, because it is inadequate to protect the environment. Furthermore, it does not address the interests of citizens who are young, disabled, or members of other species (Nussbaum 2006). The contract is not extended to noncitizens. By focusing on the future generation of life, we can extend our time frame and our sense of solidarity. Without power, the potential remains for people to be silenced or treated as commodities. Controlling consumption requires changing bad habits which in turn requires the political will to transform praxis. This has implications for transforming governance and democracy to ensure that the market is not allowed to destroy the life chances of the many for the benefit of the few.

Emergence is the ability to escape the trap of our own thinking, to cite Vickers (in Beer 1974, p. 252): “the trap is a function of the nature of the trapped.” According to his theory of “recursive consciousness,” we are able to emerge from our entrapment through making connections and realizing that we have the capability to achieve transcendence as we become more conscious.

Consideration of the question “how should we live?” ought to be guided by considering the consequences – not only for our own life, but the consequences for our neighbors and future generations of life. What we decide, how we decide, and who we decide to include in a conversation need to be guided by careful questioning and respectful dialogue. Hulme (2011) characterizes a single focus narrative as reductionist and stresses that we need to be aware of different narratives on climate change, in order to enhance our resilience and our ability to think about our thinking.

The capabilities approach takes its start from the Aristotelian/Marxian conception of the human being as a social and political being, who finds fulfillment in relations with others. (Nussbaum 2006, p. 85)

Rose (1996, 2004) argues that a first step towards building our capability is to understand

our role as caretakers. This requires recognizing the colonial mindset without adopting a naïve approach that one culture has all the answers. The challenge is to understand that “we are the land” – and that measuring a carbon footprint is merely a response to the problems we have created through extraction of surplus from the land and labor. The economic bottom line of profit needs to be replaced with well-being, based on systemic ethics, rooted in respect for personal and planetary well-being. We deny that “we are the land” and that – along with all life – we return to the elements of life when we die. We become the ancestors and nurture the land from which new life grows. Caretaking can also be assisted by the so-called Tuvalu test developed by physicists (Murray et al. 2007) which helps policymakers understand that human beings are systemically interconnected and dependent on the environment. It provides a step towards appreciating social, economic, and environmental accounting and accountability to others. The test suggests that we need to consider how our carbon choices make a difference to others. Carbon choices made in developed nations impact on rising sea levels, for example, that impact on agriculture and food security.

Systemic ethics addresses emotions, values, and perceptions when making decisions, because emotions are one of the building blocks of consciousness (Greenfield 2000). To be able to address complex wicked problems, we need to address values and emotions. Scenarios, narratives, and art can be used to help us explore complexity and our emotions. Ethical literacy can be assisted by asking questions, in order to draw on many kinds of knowledge (see McIntyre-Mills 2010, drawing on and adapting West Churchman 1979), and striving to match areas of concern to areas of knowledge that will enhance well-being by considering the following:

- Subjective ideas that are brought into intersubjective processes.
- Logical relationships across ideas.
- Empirical data for the big (broad) and small (detailed) picture.
- Idealism (not thinking about the consequences), because the moral law states we

need to treat people as ends in themselves and not a means to an end and the capabilities of sentient beings (Nussbaum 2006).

- Intersubjectivity, based on compassion, care for the voiceless, and meaningful communication with those who can engage in dialectical relationships that explore one argument versus another argument and then cocreate shared meanings within context.
- Caretaking considerations are based on considering the consequences for this generation of life and the next which leads to the best integrated response drawn from diverse ideas.

As human animals, we have evolved as *Homo sapiens sapiens*. Human beings are the so-called ‘twice wise’ who are ‘capable of thinking about our thinking’ (Banathy 2000). We human beings are the designers – for better or worse. But our appreciation that we are co-determined by the environment no longer guides (our) designs. This also has implications for policy designs that take into account regional considerations and our systemic interconnectedness. Indigenous peoples the world over have expressed a spiritual connection with the environment based on both fear and reverence. Systemic ethics is rooted in an appreciation of our dependency on nature and recognition of Indigenous wisdom, based on an understanding of the notion of caring for the land. Culture, design, and tools must be used to adapt to the environment. Today, the human species tries to adapt the environment to the so-called needs of a deified, reified market. This is unsustainable. Instead, we must use our creativity to protect the land.

Research into participatory governance for social and environmental justice is based on testing out ideas and considering “if-then” scenarios to enhance the capability of people to think about the consequences of their decisions for others and the next generation of life. “If-then” scenarios need to take into account the social, cultural, political, economic, and environmental dimensions of an issue.

The ‘**enemies within**’ refers to human values, namely, religion, morality, politics, and aesthetics (West Churchman 1979) that filter our understanding of the world and that affect our emotional understanding of the world. Ethical

decisions need to avoid polarizing *emotion* versus *reason* and to accept that emotions have played an important role in enabling cooperation and communication across the evolutionary continuum. This requires the ability to ask questions and consider ‘if then’ scenarios (see Ulrich, 1983). Greenfield (2000, p. 21) argues that emotions and feelings are the most basic aspects of consciousness. She calls them “the building blocks,” and when we temper our emotions through thinking through implications of “acting out” passions, we are able to become more mindful or conscious. Emotions can limit our consciousness, but they can also alert us to issues that we need to think about. Passion and compassion are the flip sides of one another. The more connections we can make, the better our thinking, our policy processes, and our governance outcomes will be. Nussbaum defines quality of life and development in terms of ideals, and she recognizes the emotional dimension of ethical thinking in both personal and public lives.

A new form of green democracy and governance needs to be designed which takes into account both (a) a priori and (b) a posteriori approaches to promote systemic ethical stewardship (see an example of praxis to reduce consumption by the privileged living in the urban environment; click here for access to the video [<http://www.dropbox.com/sh/q5750v9ilibnokc/zEcuDKP6R>]).

Both increased equality and increased control could make a difference. The former requires the will to make policy that supports both democracy and sustainability. This requires ethical decisions based on both a priori and a posteriori ethics. Norms need to be institutionalized through governance.

The problem of engaging large groups of diverse interest groups is threefold. The tendency to think in *linear, systematic* terms is exacerbated by an attempt to summarize ideas, rather than exploring and engaging with people to enable them to think about their values and about the interconnected consequences of their choices (Hulme 2009; Vickers 1983).

Stiglitz et al. (2010), the past vice president of the World Bank, along with his colleagues have

stressed the systemic nature of social, economic, and environmental challenges. Stiglitz et al. (2011, p. 15) use a multidimensional measure of well-being spanning:

1. Material living standards (income, consumption, and wealth)
2. Health
3. Education
4. Personal activities including work
5. Political voice and governance
6. Social connections and relationships
7. Environment (present and future conditions)
8. Insecurity of an economy as well as a physical nature

Stiglitz has stressed (at the invitation of the Australian Productivity Commission) that the bottom line is well-being – this requires building *stocks for the future* (Stiglitz et al. 2010) to protect the basis of life.

Biospheres are regions which are currently protected by the United Nations; they have the potential to be scaled up as overlapping regions. Current forms of engagement on sustainability issues involving large groups of diverse stakeholders have failed. This is evident from the failed United Nations Copenhagen Summit (COP 15) and at the Cancun Conference in 2010 (COP 16) which were unable to draw on the “wisdom of the people” (Christakis 2004) or to achieve significant governance controls. Dahl’s (1967) pessimism about choosing nested systems of governance – because democracy was designed for the city-state – has long been overturned by the necessity to develop an understanding of our interconnectedness across many cities and that the cities are dependent upon the land. The Copenhagen Summit (2009), Cancun (2010), and Durban (2011) remain a continuing source of inconclusive discussion. It demonstrates the need to develop a means to enable large groups of people to explore the implications of complex challenges such as poverty, climate change, and competition for resources and then to reach sustainable decisions. The Copenhagen Climate Change Summit illustrates that even when organizations try to include diverse stakeholders and diverse viewpoints, the challenge remains as to how to include diverse viewpoints.

The aim of ethical governance is to find a way to manage consumption through reducing the size of the carbon footprint of businesses, government, and domestic users, as reflected in governance codes that reward living in a sustainable way in each local council area. The next decade requires decisive socioeconomic intervention (Stern 2006, 2009; Lovelock 2009) to discover the processes and governance structures that enable social justice and sustainability, in order to reduce consumption and thus to enhance social and environmental resilience.

Systemic Ethics for Caretaking

Systemic ethics for caretaking requires developing the capability to think through the consequences of decisions for the long term within and beyond the boundaries of the nation-state. It requires extending the spatial and temporal dimensions of our thinking and practice. Furthermore, it requires protecting the next generation of life. The social contract only protects those within the boundaries of a nation-state and excludes noncitizens, those too young to vote, the disabled, and those who are voiceless, including sentient beings (Faist 2009; Nussbaum 2006).

Accelerated climate change will adversely affect well-being and sustainability (Flannery 2010; Lovelock 2006, 2009; Singer 2002) if we continue to live in ways that consume at current rate. The impact is likely (Rockström et al. 2009) to have been underestimated by the Intergovernmental Panel on Climate Change (IPCC) (2001) and the Stern Review on the Economics of Climate Change (2007) (<http://webarchive.nationalarchives.gov.uk/+/>, http://www.hm treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm).

The problem of how to control the use of scarce resources in a sustainable and democratic way is the focus of this section. The IPCC formula that addresses the implications of polarizing people versus the planet is as follows: E (emissions) = population $\times$ consumption per person $\times$ energy efficiency $\times$ energy

emissions (Intergovernmental Panel on Climate Change (IPCC), <http://www.bing.com/search?q=intergovernmental+panel+on+climate+change&src=IE-SearchBox&FORM=IE8SRC>).

The IPCC has concluded that the goal of reducing the carbon footprint should be 387 parts per million of carbon, and Rockström et al. (2009) have argued that it should be less, namely, 350 parts per million.

The United Nations Human Development Index (2003) and World Wildlife Fund (2007) show that (with the exception of Cuba) no country in the world has achieved both the quality of life and a sustainable ecological footprint (Wilkinson and Pickett 2009, cites Planet Ark Trust 2004). More equal societies are more sustainable in their attitudes to resource use.

The attitude to what constitutes normal usage of the planet's resources is unsustainable. Democratization to ensure a fairer use of the world's resources needs to ensure that a redesign of living standards occurs – and in the meantime governance controls need to achieve both the contraction of resources (Beck 2010) used by the rich and the greater convergence across living standards for all. In a post consumerist world wealth needs to be re-evaluated, because, to draw on and apply Einstein's well known aphorism: We cannot solve the problems of today with the same ideas of *property and consumption* that created the problem of an *unsustainable* way of life.

Consumption choices have reached a stage where they pose an existential risk (Bostrom 2011). Furthermore, consumption is very unequal, and the gaps between rich and poor become wider and wider. The root cause of consumption is power without responsibility – so whoever comes to power needs to be held to account through mechanisms to develop social, economic, and environmental indicators that secure the well-being stocks for the future. The axiom for systemic ethics is that “we can be free and diverse to the extent that our freedom and diversity does not undermine the rights of others” (McIntyre-Mills 2010). The nation-state has not protected the global commons or ensured social justice for all. This has

implications for representation, accountability, and sustainability and the need for a global covenant to protect the global commons (Held et al. 2005).

Balancing Rights and Responsibilities

Too much freedom can be as bad as too much control. Balancing rights and responsibilities is the challenge for *developed* nations that have large carbon footprints and that seek to access the last of the nonrenewable energy supplies as a means to maintain their international positions and for *developing* nations that need to achieve a decent quality of life to meet the United Nations Millennium Goals (<http://www.globaleducation.edna.edu.au/globaled/go/pid/3740>).

In more equal societies, people consume less and are also less status conscious. Thus, the link “between greater equality and the prevention of global warming involves consumerism” fuelled by advertising. According to their research, greater social and economic equality “gives us the crucial key to reducing the cultural pressure to consume” (Wilkinson and Pickett 2009, p. 221; Hoggett 2010).

“We are part of one space ship, earth” (Buckminster Fuller 1979). We are not in “separate life boats.” The difference between these metaphors is at the heart of the systemic versus the compartmentalized “zero-sum” approach to governance. Systemic ethics requires facing up to the implications of living at the expense of others and future generations, by recognizing the limits which are set by the available resources and the “boomerang effect” (Beck 2002) of carbon emissions, excessive consumption, and greed. Us/them worldviews need to be transformed though the desire to identify with others and the environment. This will lead to enhanced well-being. Xenophobia could be redressed through recognizing that we are global citizens in overlapping regional areas. It is possible to address zero-sum approaches to governance if we avoid the mistaken notion that we gain at the expense of others or at the expense of the environment or the next generation of life.

The environment is a living entity which codetermines our very existence. It is not a commodity from which to extract endless profit. Ethical decisions ought to be translated into ethical praxis.

The test for whether thinking and practice is ethical is (a) whether it advances knowledge in the area of environmental politics by addressing the tensions across communities' participation in decision-making (i.e. democracy, human rights) and whether it advances approaches to address both the livability and sustainability of their geographical areas. One of the ways these tensions could be resolved is by applying the United Nations Aarhus Convention 1998 (see <http://aarhusclearinghouse.unece.org/resources.cfm?c=1000069>) on (a) the right for local people to participate in environmental decision making to address food security for their children (b) through invoking Local Agenda 21 1992 policy, and (c) a through an enhanced and extended form of the United Nations sponsored biosphere approach to support educational, scientific and cultural organization. Ideally people living in an area need to be enabled to take part in decision making and to extend their support for their policy concerns within the wider region.

These are some of the policy challenges locally and internationally that need to be addressed, but the **will** to achieve sustainable human rights across nation states requires an understanding that we need to think beyond "us/them" national competitiveness for resources.

Emotions have an impact on personal and public **desire and the political will to make changes**.

Narrow pragmatism is based on thinking about the consequences only for ourselves and not others. We tend to think that social and environmental considerations are "externalities." Expanded pragmatism (EP) provides a step towards supporting systemic ethics based on extending the capability of humanity to think in terms of the consequences of current social, economic, and environmental choices on resource management for current and future generations of life.

Systemic ethics is the capability to think and practice critically, in order to match appropriate kinds of knowledge to particular areas of concern. Being able to think critically and systemically needs to be buttressed by post-national constitutions that provide the scaffolding to support deep-ranging environmental changes that shape and are shaped by social, cultural, political, and economic thinking and practice.

Summary

To sum up, our environment shapes the life chances of human beings who in turn shape the environment in ongoing recursive cycles (Bateson 1972). Human beings have the capacity to design their relationships in such a way that they rethink representation, accountability, and sustainability in terms of the consequences for others and the next generation of life. This requires a cultural shift in the current understanding of time, space, as well as rights and responsibilities as global stewards. This has implications for democracy and governance.

Wide-ranging and radical change to the structure of society is required to ensure social and environmental sustainability.

Cross-References

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- ▶ [Feeding Children](#)
- ▶ [Food and Class](#)
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- ▶ [War and Food](#)
- ▶ [Water, Food, and Agriculture](#)
- ▶ [You Are What You Eat](#)

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T

Taste, Distaste, and Food

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Synonyms

Aesthetics; Agency; Animals; Art; Aversion; Body; Change; Class; Desire; Disgust; Displeasure; Emotion; Experience; Gender; Imagination; Judgment; Literature; Market; Materiality; Meaning; Moral regard; Normativity; Ontology; Pleasure; Power; Race; Relationality; Senses; Social distinction; Value

Introduction

Taste and distaste are influential constituents of our relations with food. This essay describes their nature and interconnections and highlights their links with disgust. Reviewing difficulties that arise for the notion of taste (and hence for that of distaste, which has received far less attention), the article turns to literary and philosophical investigations of material life to suggest alternative ways of comprehending taste, distaste, and their bonds with food.

Theories of taste lie at the heart of the notion of the aesthetic in Western philosophy. Traditionally, such views evince an ambivalent stance toward food, one that deploys gustatory taste as

a model for aesthetic taste yet also distinguishes these two kinds of taste from one another, decidedly ranking the latter above the former (Bourdieu 1984; Korsmeyer 1999). Carolyn Korsmeyer documents how the historically discredited position of food and gustatory taste in aesthetics reflects a tendentious hierarchy between mind and body, a correlative privileging of the so-called higher over the supposedly lower senses (which include also touch and smell), and a pervasive neglect of food's cognitive import. She observes that these forces make their appearance even in a range of defenses of the aesthetic status of food and of artworks that take food as their subject matter. In her alternative account, food's context-dependent cognitive and experiential resources invest it with a profuse variety of aesthetic meanings. Besides expressive and representational dimensions, such meanings encompass the corporeally intimate and social aspects of eating and its ability to yield extraordinarily intense memories.

Enlightenment theories of taste and their descendants in philosophy and cultural theory have given rise to a broadly accepted perspective that places taste at the core of the idea of the aesthetic. In laying out standardized, generally applicable criteria designed to validate judgments of taste, philosophers have simultaneously circumscribed a field of human practice and meaning constituting the so-called aesthetic realm, an area of activities harboring distinctive kinds of values, experiences, and norms (see Roelofs 2014, 55).

While complexities surrounding taste speak to wide-ranging and profound difficulties under debate in philosophy and cultural theory, they do not give reason to jettison the concept of taste or the aesthetic. Enlightenment constructions of taste exhibit philosophical, ethical, and political problems that reveal shortcomings in the notion of the aesthetic but also point up avenues of response. Taste, distaste, the aesthetic, and food are densely interwoven with many intricate facets of our lives, provoking meanings and questions that literary and other artistic inquiries often are able bring into sharp relief (see Korsmeyer 1999, 8–9, 146–7, 185–6). Particularly intriguing in light of the possibilities and limitations of taste are undertakings by authors such as Franz Kafka and Clarice Lispector to conceptualize forms of change – social, corporeal, imaginary, symbolic – that involve mutations in the areas of eating and food, including developments of the gustatory aesthetic tastes and distastes of their fictional characters (Kafka 1915/2003; Lispector 1964/1988). These writers implicitly stress the interconnectedness of our sensory desires for eating with other aesthetic registers in which we conduct our relationships with other humans, nonhuman animals, and the material world. They situate disgust alongside an array of sensory attractions and aversions in a field of shifting relationships. Food tastes appear to carry out their aesthetic operations, in part, as devices that steer trajectories of material becoming; they contribute prompts as well as obstacles to processes by which agents attempt to realize alternative ethical and political possibilities within hierarchical social arrangements. Kafka and Lispector thus provide insight into the complex ethical status of food tastes, broaching a field of questions that contemporary scholars also take up in studies of food, taste, and disgust (Korsmeyer 1999, 2011; Ahmed 2004) and the materiality of social change (Braidotti 2002; Bennett 2007).

Taste and Distaste: Philosophical Perspectives

The concept of taste, as we inherit it from eighteenth-century philosophical giants such as

David Hume and Immanuel Kant, refers to the human capacity to undergo aesthetically appropriate responses in relation to objects of nature and cultural artifacts, including artworks. The appreciative reactions issuing from the operations of the faculty of taste instantiate a dimension of aesthetic normativity, or, in short, value-ladenness. The value-bearing kind of experience that results from taste's workings is typically called aesthetic experience. Taste, on this widely accepted philosophical view, consists then in a propensity for aesthetic experience. The faculty can be exercised well or poorly. Most philosophers assume it to be educable, that is, liable to improvement through acculturation. Taste prevalently counts as a source of pleasure as well as displeasure: good taste, in influential perspectives along these lines, offers us pleasure in relation to aesthetically worthy objects of appreciation; it engenders displeasure (or distaste) in confrontation with aesthetically unworthy elements. Bad taste gets these matters wrong. Taste's normative character further reveals itself in its role as a faculty of judgment or evaluative experience: suitably functioning taste is standardly understood to respond with approbation to aesthetic value and with condemnation (or, again, distaste) to aesthetic disvalue. Contemporary philosophers frequently believe our proper taste reactions to apprise us of the aesthetic qualities of the objects of our aesthetic perceptions. They have formulated numerous proposals to this effect, often reworking Kant's view of the disinterested functioning of our common cognitive faculties or Hume's account of the true critic (Kant 1951; Hume 1998).

Kant and Hume are influential precursors of the prominent view that locates the aesthetic domain at a distance from practical considerations. Their alignment of taste with disinterested attention and freedom from prejudice, respectively, lends support to the notion of aesthetic autonomy. At the same time, these philosophers invest taste with significant moral weight. Both recognize an elaborate set of connections between aesthetic and ethical meanings and evaluations. The existence and importance of such bonds between aesthetics and ethics are fairly

uncontroversial in current scholarship, even if questions about how these ties are to be conceived are subject of heated debate.

Taste Versus Distaste

Taste, understood as a culturally situated faculty, enjoys greater prominence in aesthetic theory than distaste. Far from the antithesis of taste, in the sense described above, distaste generally implies a tendency to entertain aesthetic responses that include elements of aversion and displeasure. Many young children profess a distaste for brussels sprouts; such children are inclined to pass over these vegetables, which they experience as repulsive or appalling. Distaste, so conceived, involves a propensity to react with displeasure to objects of aesthetic antipathy; it constitutes a component of taste, defined as a portal guiding us toward aesthetic experience. There is of course a sense in which taste and distaste are opposites. “Taste” regularly denotes an aesthetic inclination toward sensory enjoyment of substances or objects, as when we say of children who look forward to eating green beans, that they have a taste for these vegetables; they find them tasty. This sort of taste does indeed stand in contrast to the kind of distaste identified earlier. But the broader notion of taste as a proclivity to undergo aesthetic experience includes both taste and distaste in this narrower sense.

The above vegetable examples focus on taste’s axes of pleasure/displeasure and desire/aversion. Yet the same point applies to its specific workings as a capacity for judgments of aesthetic value and disvalue and for a host of value-inflected “qualitative” experiences of aesthetic properties: the faculty of taste comprises not only taste, understood as a tendency to appreciate aesthetic goodness – as when you have a taste for crispy lettuce, judging its fresh leaves to have a sprightly taste and experiencing their textures, flavors, looks, and sounds as frisky to the taste; it subsumes also distaste, comprehended as a propensity to denounce aesthetic deficiency – as when you have a distaste for overcooked

brussels sprouts, judging these mealy blobs to have an insipid taste and experiencing them as flat or bland to the taste.

Taste, Distaste, and Disgust

Distaste and disgust are not the same (Jones 2000). Distaste involves a kind of sensory aversion, a form of displeasure, or a type of disapproval that can draw on a great variety of other experiences, including disgust. For example, instances of distaste can involve elements of the grotesque, the uncanny, formlessness, abjection, or the horrific. Furthermore, a distaste that turns us away from celery need not have us recoil in disgust. Disgust displays its own, distinctive contextually based, cognitive and experiential structure, which engages us in an immediate visceral reaction and often manifests aspects of attractiveness and fascination (Ahmed 2004; Korsmeyer 2011), components that distaste does not require (see also Nussbaum (2004, 87–8, 94–6, 121)). The affect of disgust is typically taken to rely on bodily proximity (even if mediated through a chain of contacts among elements (Ahmed 2004, pp. 87–88) or imaginings (Korsmeyer 2011, p. 30, pp. 56–7)). Korsmeyer ascribes to disgust, aroused as a constituent of aesthetic experiences of food, art, and other elicitors, a unique power to offer an intimate apprehension of death, transience, and bodily dissolution. In short, differences between distaste and disgust abound.

However, Pierre Bourdieu surmises that “tastes are perhaps first and foremost distastes, disgust provoked by horror or visceral intolerance (‘sick-making’) of the tastes of others” (Bourdieu 1984, p. 56). This speculation hints at complex affiliations among taste, distaste, and disgust. Bourdieu suggests here that aesthetic taste counts taste among its objects, being substantially *about* taste(s), and proposes that this disposition functions by way of distaste and disgust. He alerts us to the possibility that the three phenomena enter into one another’s workings, an idea that, we shall see, is also borne out by several literary treatments.

Critiques of Taste

Taste faces pressure from the sides of art, theory and a variety of other social practices. Artists and scholars have recognized ways in which longstanding asymmetries involving race, class, gender, ethnicity, coloniality, and nation permeate aesthetic experiences, standards, and judgments, at the level of philosophical analysis and everyday cultural existence. At issue are systemic phenomena, such as the fact that creations by white European men have generally been considered of greater aesthetic value than ones by African women. In tandem with this line of criticism, thinkers have examined the contributions of aesthetic elements to constructions of social difference and hierarchy (Bourdieu 1984; Shusterman 1993; Korsmeyer 1998; Roelofs 2014). For example, food tastes, such as an appetite for light, or, to the contrary, heavy and fat foods, regularly appear to serve as grounds for distinguishing classes of eaters from one another (Bourdieu 1984, p. 185). The entwinement of aesthetic matters with unjust forms of social differentiation engenders a host of ethical and political quandaries for philosophy, cultural theory, and social collectives: what place does and should the aesthetic occupy vis-à-vis the various markets surrounding the production, consumption, and exchange of cultural artifacts? More specifically, how might we conceive and reconceive the functioning and the philosophical underpinnings of taste? What role should we accord aesthetic experience and evaluation, understood in their full richness and complexity, as dimensions of our engagements with one another and the world and of food practices in particular? (On these questions, see Korsmeyer 1999; Heldke 2011, 2012a, 2012b; Probyn 2012; Roelofs 2014).

Numerous artists explore intricately interwoven aesthetic and ethical conundrums surrounding eating and food. Franz Kafka and Clarice Lispector, among others, accord sensory desires for and aversions toward edible materials an organizational role within webs of power and discipline (Kafka 1915/2003; Lispector 1964/1988). These authors mark out a significant

place for taste and eating rituals, which, in their texts, function both as impediments to processes of change and as sites at which transformations are revealed to disrupt boundaries of gender, class, and race and to upend divisions between human and nonhuman life forms.

Food, Taste, and the Orchestration of the Ordinary

Our tastes and distastes form an integral part of the organization of everyday existence. In Kafka's novella *The Metamorphosis*, breakfast constitutes a regular feature of family life, one that typifies also the routines of a commercial traveler such as Gregor Samsa, the story's protagonist. Upon his mutation into an insect – or, more precisely, a verminous being of an unspecified sort – Gregor's habitual desires for food undergo a sea change. Sweet milk, formerly his favorite drink, no longer holds any appeal to him. Attentively left for the creature by his sister, the substance currently fills him with aversion. In his present condition, Gregor's preference turns to half-rotten vegetables, a hardened white sauce, and, most of all, a chunk of cheese he had declared inedible just two days ago, when matters in the home were still run as usual. Shifting social and domestic arrangements precipitated by his transformation prominently materialize in the realm of food. The cook resigns. The father puts an end to his prolonged breakfast ritual, during which he customarily absorbed physical nourishment along with the news. Financial exigency forces him to supply bank clerks with breakfast and, as the predicament of his son-turned-insect persists, to prepare meals for lodgers who take up quarters in the house. Mother, father, and sister eat and drink less and less. Their mealtime discussions dwindle. As life goes on, the sister, in her brother's eyes, grants him whatever edibles happen to be around in the house, apparently having lost all consideration for what he might or might not wish to eat. Kafka imagines the turnabout visited on the family in terms of a changeover in what is eaten, how, and when. He asks us to contemplate a revision of the bonds

between food and work, along with an adjustment in what elements are prepared and presented for digestion by whom and for whom.

The uprooting of the family's fate takes place as a development within foodstuffs: items that were previously considered refuse, waste, and leftovers, in the current situation, satisfy Gregor's hunger and offer him gustatory pleasure. Materials gain new functions. To expel his son from the living room he has entered, the father takes recourse to the fruit bowl, fielding a cannonade of apples at the insect, one of which harms its back. Delectable dishes thus not merely become repulsive, while unpalatable remnants turn scrumptious, but food also acquires a different, nonfood-based utility under the altered domestic circumstances.

Reverberations in the social armature encompassing the material paraphernalia of food extend yet further than this: analogous substances engender correspondences between body parts and objects molding the shapes and movements through which we usher food. On the first morning of his new incarnation, locked up in his bedroom, Gregor attempts to unlatch the door by turning the key with his jaw. The endeavor demands a great physical exertion on his part, one that injures his maw. A brown fluid runs from Gregor's mouth, which flows over the key to drip onto the floor. Yet the bug's effort is successful. Shrinking back from the creature, who has been coming all too close, the mother bumps into the breakfast table set behind her. A large coffee pot tumbles from the table and spills a flood of coffee over the carpet. Bringing together and yet separating the worlds of human and nonhuman animals, and subverting the distinction between processes transpiring inside and outside the body, the two brown liquids forge an uncanny resonance between the neither fully human nor altogether nonhuman orifices represented by the mouth and the kitchen utensil, between the ambits of bodily experience and material artifacts (key, coffee pot, carpet), and between the purview of intentional animal agency and involuntary human response. The dividing lines partitioning these elements appear to be mobile. At this point, the reader's sense of

bodily integrity becomes somewhat destabilized. Kafka renders the shake-up afflicting the Samsa household tangible as an overhaul of body parts, objects, and corporeal acts involved in the handling, consumption, and expulsion of foodstuffs.

Tastes and distastes guide the characters' behaviors in multiple sense modalities throughout the story. Gustatory, olfactory, and tactile attractions and repulsions in the realm of food collaborate with desires and aversions embodied by the other senses to orchestrate an array of material and symbolic relationships among persons, animals, humans, objects, and spaces. Among the propensities structuring these relationships are auditory sensibilities (Gregor's appreciation of his mother's voice, mirrored inversely by individuals' fear of the sounds he utters), visual likings and loathings (the parents' ultimately high regard for the sister's looks, which parallels their disdain for the brown mass that is Gregor), and tactile and proprioceptive conditions (such as Gregor's initially uneasy settling into his body, his continued experience of his own bodily states, and the presumably repugnant quality to human touch of the slimy traces he leaves in his path). Tastes and distastes comprise dispositions that are instrumental in the steering of our daily comportment at the level of multiple, conspiring sensory registers.

Gregor's aesthetic aversions to food connect his life as a commercial traveler with his existence as a bug. One of the hardships of his itinerant existence used to be the inevitability of bad, irregular meals. His metamorphosis intensifies the trials he undergoes with respect to the necessities of eating and drinking and the conferral and withholding of provisions. The insect's tastes and distastes exert a humanizing effect. They signal capacities he shares with human beings. These sensibilities, which make food matter to him in specific, ethically salient ways, call for moral regard. They are instrumental in upholding his moral standing, in the reader's eyes. His companions' indifference to the pleasures, pains, and meanings sustained by his phenomenal world bespeaks their callousness. Their disgust proves to be decisive to the unfolding of the domestic ordeal. The family finally finds relief from its misery in ridding itself of the bug.

Upon his death, the cleaning lady expeditiously removes the corpse, which has evidently been demoted to dirt or trash. Disgust, at once morally problematic and soliciting respect, does not permit us to separate the animal from the human across a rift between, on the one hand, the position of rebel or victim and, on the other, that of boss, patriarch, petty bureaucrat, or collaborator in oppression, because the cleaning lady (who participates in Gregor's expulsion and who we can assume to be human, even if presumably not as unwaveringly human as her employers) is the one and only creature not driven by disgust – Gregor as well as his family members participate in this emotion. The affect does not straightforwardly connote humanity or a deficiency thereof; and neither does the absence of disgust clearly intimate these conditions. Kafka registers taste's, distaste's, and disgust's ties to categories of living beings and objects (class, gender, person, animal, thing, food/nonfood, useful/disposable object) and the tangled fault lines such categories tenuously and tendentially specify among various entities.

Gregor's interest in food declines as the story proceeds. The digestion part of his eating comes to an end: he chews substances only to spit them out again. His own disgust mingles with his submission to the disgust of others. The absorption of materials stymied, the emotion manifests a stubborn cyclicity. Foregrounding Gregor's double standing as a subject *of* taste and an agent who is subjected *to* others' taste and placing the power of disgust in tension with his aesthetically underwritten status as a being worthy of moral consideration, Kafka discloses the thorny ethical significance sustained by taste and distaste (On forms of vulnerability, aggression, and violence emerging in this affective zone, see Nussbaum (2004) and Highmore (2010)). The novella situates the reader in a position of uncertainty, in which the ethical tenability of her aesthetic investments has been called into doubt.

Moving Through Distaste

Clarice Lispector's novella *The Passion According to G.H.* lends the transformative

potentialities of eating an importantly different kind of spin (Lispector 1964/1988). Its narrator, the white Brazilian sculptress, G.H., tells us of the conversion experience she underwent the day before, in the course of which she shed the forms of her culturally shaped identity. Intent on putting in order her former black maid's room, G.H., to her consternation, enters a meticulously cleaned space. Under the influence of its barren purity, the grounds of her social being begin to dissolve. She comes to partake of the continuity of living matter, which encompasses, among other things, a cockroach with which she comes face to face in a wardrobe. The difference between her and the animal, two pieces of the same energetic substance, slips away. She abandons the disgust she feels for the insect (impelled by both its attractiveness and repulsiveness [54]) and eats the white pulp that seeps out of the dying bug's broken back. G.H. forfeits her taste for beauty and her distaste for ugliness to allow for a more delicate "taste of the living" (146). Unconstrained by her customary tastes, such as an appetite for the potato's seasoning that effaces the more delicate taste of the tuber's earthy substance, she is able to experience an impersonal, nonhuman contact with the materiality of things. In this contact she finds a basis for a different kind of goodness and morality. Discarding the trappings of the human, as well as the promise of an "aesthetic plane of goodness" (152), she learns that a true humanization of the human may ensue if humans give themselves over to unknown aspects of their interdependency with the world. That evening she plans to go eating shrimp and dancing with her friends. The eating mouth exemplifies her impassioned, desiring material connection with the world, as she returns to regular happiness.

Shifting the boundaries of eating constitutes a stage in G.H.'s passing through a sedimented form of social being that casts her into a predictable mold toward a more expansive set of relationships with others and the material world. Her metamorphosis clearly takes place in a woman's body and counters gendered philosophical hierarchies such as the indefatigable mind-body opposition. Underscoring the ethical,

political, and ontological significance of sex-specific processes of change, Rosi Braidotti describes it as a process of feminine becoming (Braidotti 2002, pp. 160–171). But eating-through-and-into-otherness often engages us in exoticizing quests (hooks 1992; Heldke 2003). Such projects valorize enticing aspects of racial and class difference as instances of ostensibly more general, open-ended types of alterity. G.H.'s case is no exception to this. Her aesthetic desires and aversions both track and fuel intersecting racial, colonial, class, and sexual parameters, modalities that are coded by and play themselves out in the human-animal relation. In contemplating and taking part in the aesthetics and ethics of transformation, we thus need to explore the ways in which eating and food tastes channel or derail such forces, including the forms in which we attempt to dispel already existing forms.

Kafka and Lispector posit a baseline of everyday life in which taste is complicit. This condition of normalcy unravels in consequence of the aesthetic shifts traversed by their characters. Nonetheless, at the end of each story, an ordinary rule of things reasserts itself, albeit with a material, symbolic difference. These contravening tendencies bring out unsettling ethical predicaments inherent in a long-standing history of taste's relational operations (Roelofs 2005).

Food, Taste, and Agency

Drawing on Friedrich Nietzsche and Henry David Thoreau, political theorist Jane Bennett argues that eating involves a recorporealization of human and nonhuman bodies in response to one another. Both kinds of bodies contribute formative powers to this process and yield materials that are being acted upon by other forces. Bennett rejects what she labels "a conquest model of consumption," which "disregards the effectivity of not only animal bodies, but also the 'bodies' of vegetables, minerals, and pharmaceutical, bacterial or viral agents" (Bennett 2007, p. 133). For food to nourish an eater, she indicates, both have to be changeable under the

other's influence. Eating, in her view, consists then of a series of transformations in which food exercises capacities of agency in conjunction with other participants in complexes of bodies, substances, and forces (Bennett 2007, p. 134). As an example of the agency of edible materials, she cites the apparent effects of dietary fat. Several studies of fatty acids have found that lipids influence subjects' cognitive and social states, affecting attention span as well as rates of depression and aggression. According to Bennett, Nietzsche and Thoreau, likewise, affirm the agentic capacity of food in commentaries on the moral and political efficacy of diet. Both philosophers, along with the more recent slow food movement, she notes, advocate projects of artful (or, as we can call it, aesthetically innovative) eating, with the intention of instigating changes within heterogeneous constellations of elements. To suggest an example, an increase in the consumption of fish rich in omega-3 fatty acids might, by way of a rather unpredictable chain of effects, issue in a greening of your concrete-dominated street corner and a greater incidence of parties, romances, and high achievers in school. Such mixed configurations of components, labeled assemblages, in Deleuzian terminology, are precisely the flexible material entities that Bennett, more generally, understands as the loci of social and political agency. Although she does not mention taste specifically and her explicit references to aesthetic aspects remain for the most part quite abstract, her discussions of food implicitly outline a prominent place for taste as a force within the collectivities she sees at work in the realization of cultural change.

Bennett highlights how beer, according to Nietzsche, exerts social power in the context of other cultural artifacts, such as newspapers, politics, and Wagnerian operas. She draws attention to the conative potentialities that Nietzsche's figure of Zarathustra attributes to "warrior-" or "conquerer-food," in contrast to what is to be expected from "flatulent vegetables." In Thoreau, she documents a shift from a hunger for raw, wild birds that he encounters in his path to a repugnance he feels for animal corpses.

Meat's oozing and dripping put him off; its filthiness troubles him. He then craves the "true flavor[s]" and tastes of freshly picked huckleberries and blueberries, unprocessed by the market (Bennett 2007, pp. 139–142). Bennett next underlines the slow food movement's double focus on environmental, social, and economic stakes and gastronomical aims (these latter goals involve the promotion of the savoring of food, of cultures of preparation, and of communal aspects of these practices).

Although Bennett does not foreground taste, we can readily see how it would be a crucial element of the network of forces and things she theorizes. Food tastes, in the writings she cites, function in collaboration with a wide range of tastes, as they do in Kafka and Lispector. These include desires for sounds, for ostensibly uncultivated contact with nature, and for intimate participation in sociality and cultural forms. Taste, distaste, and disgust, as the above quotes suggest, once more, exhibit a close interconnectedness.

Besides being experiential capacities, our tastes and distastes are institutionalized phenomena. They constitute social forces permeating commodity markets, agribusiness interests, political movements, public health policies, and school lunch programs. They operate at an ontological level at which subjects and objects evince interdependencies, conferring both malleability and traction on the exchanges among bodies, human and nonhuman. They must be considered fundamental participants in the multifarious capacities for agency exercised by and surrounding food.

Summary

Allied with the moral and the immoral, the concept of taste enjoys a controversial ethical standing. Along with other kinds of aesthetic desire and aversion, tastes and distastes for food fulfill structural roles in the organization of everyday existence. In contemplating complex sorts of bodily transformation, authors investigate how eaters, food practices, and acts of tasting

implement shifting categorial alignments among living beings and among living beings and objects. Literary fictions examine how agents, activities, and experiences involved in eating collaborate to enact aspects of cultural change. Novels thereby implicitly or explicitly accord food tastes a vital role in supporting and modifying the social, material relationships we inhabit. These artistic perspectives resonate with recent scholarship in aesthetics (Korsmeyer 1999, 2011; Heldke 2011; Roelofs 2014), affect theory (Ahmed 2004), and materialist approaches to social change (Braidotti 2002; Bennett 2007). At the same time, the philosophical and ethical conundrums engulfing our aesthetic proclivities indicate that important questions about the makeup, the grounding, and the cultural functioning of our tastes and distastes remain open, calling for further inquiry.

Cross-References

- ▶ [Aesthetic Value, Art, and Food](#)
- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Food-body Relationship](#)
- ▶ [Food and Class](#)
- ▶ [Food, Class Identity, and Gender](#)
- ▶ [Food and the Avant-Garde](#)
- ▶ [Gustatory Pleasure and Food](#)
- ▶ [Human Ecology and Food](#)
- ▶ [Literature, Food, and Gender](#)
- ▶ [Nietzsche and Food](#)
- ▶ [Race, Racial Identity, and Eating](#)
- ▶ [Slow Food](#)
- ▶ [Waste and Food](#)
- ▶ [You Are What You Eat](#)

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Technologies used for Animal Breeding, Ethical Issues

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Synonyms

Animal ethics; Breeding ethics; Ethics of animal biotechnology; Ethics of reproduction technology

Introduction

Animal breeding, as part of domestication, has a long history going back more than 10,000 years (FAO 2007). The selection of animals with desired traits and the crossbreeding of different lines have resulted in many different breeds of use to humans. For most of that time, the required knowledge and skills were developed by means of practical experience. However, since the nineteenth century, scientific knowledge has increasingly been utilized in the practice of breeding. Until the second half of the twentieth century, however, most breeding technologies were still based on the natural mating of animals. After World War II, nonnatural reproductive technologies were commercially introduced and served to accelerate the breeding process. Artificial insemination (AI) in cattle, for example, has replaced natural fertilization in many Western countries. Another, more recent technology is the introduction of embryo transfer (ET), which consists of removing embryos from a female donor and transplanting them into recipient animals, where they will develop until birth. More recently, biotechnologies such as marker-assisted selection (MAS) have been developed; these can speed up the breeding process, because embryos can be tested for desired features before transplantation (Mapletoft and Hasler 2005, FAO 2007).

Breeding technologies have resulted in an enormous increase in food production based on animals. For example, Rauw et al. (1998) describe how cow milk production per lactation in Norway, the USA, and the Netherlands has doubled in the second half of the last century, that the slaughter weight of broiler chickens in the USA and the Netherlands has increased by 50 % in the last third of that century, and that the daily growth rate of pigs in Norway and the Netherlands increased by more than 13 % between 1980 and 1995.

To be clear, this increase in animal production is not just the result of improved breeding technologies but should also be considered as the result of a combination of various technologies and scientific breakthroughs, such as the application of antibiotics, improved feed content, housing conditions, mechanization, and so on. This could only happen in combination with a change in the livestock production system in a more general sense. For example, Orland (2003) describes how the rise of high-productivity dairy cattle in Germany and Switzerland in the nineteenth and twentieth centuries was made possible by a change in consumer milk demands and the introduction of train transport that made the importing of feed economically feasible. It changed local farming – which was traditionally based on the interrelationship of soil, animals, and fodder on a local scale – into the practice of external inputs and external markets. This has led to what is sometimes referred to as industrialized animals (Harfeld 2010). Critics point to the fact that the benefits have occurred at the cost of the animals. For example, this has resulted in negative immune performance and higher mortality rates among broiler chickens and to leg weakness and diseases in pigs and cows (Rauw et al. 1998). It also threatens animal agro-biodiversity because of the selection focus on a limited number of traits such as milk, meat, and egg production and an adaption to and tolerance for certain housing conditions (FAO 2007).

The technologies described so far are essentially based on technologies that have resulted in breeds that could, in principle, have also been obtained through classical breeding approaches

based on natural mating. This is not the case with the most recent technologies such as genetic modification and cloning. Genetic modification or engineering is the artificial modification (alteration, insertion, or deletion) of genes in living organisms. Unlike breeding, this technology is not restricted by the species barrier. Genes from completely different species may be inserted into the genome of an organism, which can then lead to novel features. Cloning refers to reproductive technologies by which a new organism is produced from a somatic cell or tissue. The new organism will have the same genetic makeup as the original organism from which it was cloned.

A well-known and early example of genetic modification in animals is the “Beltsville” pigs created in 1989 in Canada. These pigs were equipped with a human growth hormone gene that caused them to grow faster. However, they suffered from several serious abnormalities and diseases, and accordingly the experiment was halted (Thompson 1997). Another example is the genetically engineered “Bull Herman” that was born in 1990 in the Netherlands. This animal had received the human gene for the hormone lactoferrin. The idea was that this hormone could be harvested from the milk from its female offspring for medical purposes. This application led to widespread concern among the Dutch public, especially since this was considered as offending the intrinsic value of the animal in order to equip it with a human gene (Schroten 1998).

A more recent example is genetically engineered Atlantic salmon. This fish species is equipped with genes from the Chinook salmon and the ocean pout and is meant for fish farming (<http://www.aquabounty.com>). It grows nearly twice as fast as the original salmon and is much more feed efficient. Accordingly, this application has also met with societal resistance, especially on ecological grounds. Critics are afraid that the engineered fish may irreversibly and negatively affect natural salmon populations if they escape into marine ecosystems (Smith et al. 2010).

Another very recent application of animal biotechnology has been described in a report of the

Dutch Committee on Animal Biotechnology (CBD 2011). This committee advises the Dutch government on the ethical issues of animal biotechnology in non-biomedical applications. In the proposed application, male but not female chicken embryos would receive a gene inserted that codes for a fluorescent protein. This would make it possible to identify male embryos in freshly laid eggs noninvasively and then to exclude them from the brooding process. It could prevent the annual killing of hundreds of millions of day-old male chicks that cannot be used in the egg-production poultry industry. This killing practice is currently the object of criticism in political circles in the Netherlands, and several alternatives, including genetic modification, are being investigated (Leenstra et al. 2011).

The cloning of animals as a reproductive strategy has also resulted in great deal of societal concern. Dolly the sheep, born in 1996 in Scotland, was the first mammal to be successfully cloned, and acknowledgement of this event caused a shock among scientists and citizens, because it had been generally believed that mammal cloning was really not possible. After the acknowledgement of the successful cloning of Dolly, a full-blown debate raged in many countries, since many saw it not only as a threat to animal welfare and animal dignity but also as a first step towards future human cloning. Cloning may in the future contribute to animal industrialization, because it makes it possible to rather rapidly replace one herd with another. Currently, more than 20 mammal species have been cloned. Most applications are still in the research phase, but some have already been applied, especially for the preservation of breeds with specific traits or for sporting purposes, for example, in horse racing (COGEM 2011).

Ethical Issues

Many ethical issues have arisen with respect to modern breeding technologies, because they have an impact on the welfare of animals, on agro-biodiversity, or on the environment. In addition, the rise of modern biotechnology in the form

of genetic modification and cloning has specifically brought up fundamental issues with respect to the intrinsic value of animals and the role of animal technology in present-day society.

Animal Ethics

Already in the early 1960s, there were many authors who took into consideration the moral position of animals. The publication of *Animal Machines* in 1964 by Ruth Harrison especially raised a great deal of public concern (Van de Weerd and Sandilands 2008). The book describes how the focus on efficiency was taking place at the expense of animal welfare when it came to castration, tail docking, beak trimming, dehorning, etc. In response, the British government set up the Brambell Committee in order to investigate this issue. The resulting report stated that “farm animals should have the freedom to stand up, lie down, turn around, groom themselves and stretch their limbs.” This viewpoint was accordingly adopted and codified into “Five Freedoms” by the British Farm Animal Welfare Council (<http://www.fawc.org.uk/freedoms.htm>). Farm animals should be free:

1. From hunger and thirst – by ready access to freshwater and a diet that maintains full health and vigor
2. From discomfort – by providing an appropriate environment including shelter and a comfortable resting area
3. From pain, injury, or disease – by prevention or rapid diagnosis and treatment
4. To express normal behavior – by providing sufficient space, proper facilities, and the company of the animal’s own kind
5. From fear and distress – by ensuring conditions and treatment which avoid mental suffering.

Except for Freedom 4, this approach reflects a subjective welfare approach towards domesticated animals: The (subjective) experience of the animal itself, although sometimes difficult to assess, should be decisive when it comes to what is considered to be a violation of the interest of the animal. In contrast, Freedom 4 refers to a functionalistic view, where welfare is considered in terms of the normal functioning of the

animal with respect to health, growth, and physiological and behavioral aspects.

The Five Freedoms express a code of morality, that is, a set of moral rules humans should follow with respect to their behavior towards animals that fall within the aegis of their responsibility. However, ethics is much more than simply expressing the kind of moral rules we should follow; it also attempts to explain *why* we should follow such rules. It explains why animals have moral standing, that is, why they should be considered as members of the moral circle. Three types of answers, representing the various main theories in animal ethics, predominate: utilitarian, animal rights, and biocentric answers.

Utilitarian Considerations

Utilitarianism is a consequentialist form of ethics, which argues that avoiding suffering or enjoying life is considered to be intrinsically valuable for sentient beings, including human and nonhuman sentient animals. Consequently, animals are within our moral circle if they have sentience, that is, if they possess the morally relevant ability to suffer or to enjoy life. Accordingly, in as much as humans and nonhumans have the ability to suffer or to enjoy life, they have a similar moral standing. “The question is not, Can they reason? nor Can they talk? but Can they suffer?” – this according to the famous and often cited statement by nineteenth-century philosopher Jeremy Bentham (Gruen 2010). Although this approach is based on the individual properties of affected beings (sentience), it stresses a population-based weighing approach.

According to utilitarian calculus, we need to take into account all effects on well-being of all involved sentient beings when we weigh our actions. Breeding, genetic modification, cloning, etc., may lead to animal suffering but have on the other hand positive consequences for humans, because it contributes to efficient animal production and consequently to human prosperity. However, in some cases, it can also contribute to the animal’s well-being, for example, in terms of increased disease resistance or by becoming less vulnerable to housing conditions or farming practices. This latter may however be questioned

from a functionalistic welfare standpoint as it may result in animals that do not show normal and natural behavior.

In agriculture, most of the suggested applications of genetic modifications will most likely not lead to any heavy impact on the animal welfare of the thus-created animals (Thompson 1997). Moreover, regulation in many countries does not allow any genetic engineering and cloning that may result in animals suffering. In the chicken case described above, the inserted gene is not expected to have any effect on the animals. However, we should not just look at those animals resulting from engineering and cloning technologies. Producing these animals in itself often implies many experiments and the use of many animals. For example, hundreds of sheep were needed to bring about the cloned sheep Dolly. And, although procedures have much improved since the 1990s, many animals are often still needed for experiments, which may also fail and may cause animal suffering (COGEM 2011).

From a utilitarian point of view, one may consider cloning and genetic engineering as not so very different from the older reproduction and breeding technologies. This does not mean, however, that genetic modification or cloning is essentially acceptable. Rather it means that, while the technology itself may not be a moral issue, the possible consequences for the welfare of the creatures involved should be a primary consideration.

Animal Rights Considerations

A quite different reasoning is applied when it comes to animal rights approaches that are generally based on deontological considerations, meaning that it is not primarily the consequences of an act that should be considered, as is done in utilitarian approaches, but rather the act itself, which should be in accordance with certain principles. Taking an example from human society, one should respect, on principle, other people as autonomous individuals. Similarly, according to animal rights approaches, animals have moral standing because of what they are: sentient beings having subjective experiences, that is, the ability

to experience the quality of life and to enter into and maintain relationships with others (Regan 1983). Such beings have an inherent or intrinsic value, and our behavior towards them should express this. Inherent value is, according to Regan, “a categorical concept. One either has it, or one does not. There are no in betweens. Moreover, all those who have it, have it equally. It does not come in degrees” (p. 241). Following this line of reasoning, it is thus not suffering as a consequence of sentience but the ability to have sentience itself that counts.

According to this line of thought, cloning and genetic engineering of sentient beings (and actually all modern animal technologies that aim to contribute to the food industry) should be considered as offending the inherent or intrinsic value of animals.

Biocentric Considerations

The reasoning in both the utilitarian and animal rights approaches is limited to animals having a certain level of sentience. However, moral objections against genetic modification often not only refer to sentience and sentient animals but also to those with other backgrounds and often to more organisms. For example, the Bull Herman case, already mentioned in this entry, led to much public opposition, because many people considered genetic modification of animals as playing God and/or as an unnatural act.

Biocentric reasoning especially played a role in this discussion. According to biocentrism any living organism should be considered as a “teleological center of life,” having an intrinsic good in its own right. The organism’s good consists of fulfilling its capabilities and satisfying its needs in a manner suited to the species. Life is worthwhile in itself, and one should respect it as it is and not in terms of anthropocentric presumptions. According to Taylor (1986) all living entities have, because of this own good, an “inherent worth,” as he calls it.

In the discussions on genetic modification of animals, the biocentric approach is often expressed in terms of the animal’s integrity, that is, “the wholeness and completeness of the animal and the species-specific balance of the

creature, as well as the animal’s capacity to maintain itself independently in an environment suitable for the species” (Rutgers and Heeger 1999).

Respect for integrity (in addition to welfare and subjective considerations) was also an important consideration in the case of the genetically modified chickens. The committee concluded that the current practice of killing millions of day-old chicks shortly after hatching should be considered as a major infringement of the integrity of the animals. It acknowledges that although integrity on the genetic level was at stake in the proposed application, the genetic modification would probably not affect the chickens’ autonomy, their phenotypical identity, or their vulnerability to diseases (CBD 2011, p. 13). Consequently, the committee agreed that the application was acceptable in terms of animal ethics considerations (however, see the last section of this entry).

In general, according to biocentric approaches, it is not primarily welfare or having sentience but the integrity or authenticity of the animal’s constitution that counts when assessing the moral acceptability of breeding and reproductive technologies such as cloning and genetic modification, for example.

Environmental Ethics

Welfare, subjective, and biocentric approaches are the main considerations when it comes to animal ethics. However, animal reproduction and breeding technologies such as artificial insemination, embryo transfer, genetic modification, or cloning may also effect the environment such as ecosystems, species, or animal populations, for example. According to anthropocentric environmental ethics, the environment is an ethically relevant entity if it directly or indirectly serves human interests. Anthropocentrism therefore often has a utilitarian flavor. In contrast, according to ecocentric reasoning, ecosystems and populations have an intrinsic value that should be respected and should not be negatively affected or, if so, only for strong, compelling reasons (Brennan and Lo 2011).

Although underlying justifications may differ, these two approaches may converge in practice. For example, agro-biodiversity may be considered as a human interest, inasmuch as it contributes to genetic resources, food, and other services (FAO 2007). Modern breeding technologies may reduce agro-biodiversity and may even imply the disappearance of breeds. This may be accelerated by means of genetic engineering and cloning, since they often focus on a few species or races. The reduction of animal agro-biodiversity not only affects the interests of farmers who earn a living from keeping rare breeds but may also be considered as a threat to breeding in general, because it may exhaust the genetic variability on which breeding depends (FAO 2007).

However, agro-biodiversity is not valued only because of anthropocentric utilitarian considerations such as these. Indigenous animal breeds have evolved under specific, societal, and biophysical circumstances, and they may also have an inherent or intrinsic value as a particular species or breed, or because they represent local and historical human traditions and cultures (FAO 2007).

Genetic engineering of animals may also effect the environment directly. For example, genetically modified animals may escape into the wild and interbreed with wild congeners. Wild species, populations, and ecosystems may subsequently be negatively affected, which is questionable or even unacceptable from the standpoint of environmental ethical considerations. This is the main concern when it comes to the development of the genetically modified Atlantic salmon described earlier. Another example is the environmental introduction of genetically modified mosquitoes to combat human diseases. These mosquitoes are genetically modified in such a way that they will not have viable offspring. By introducing huge numbers of these mosquitoes into a local population that is causing a disease (e.g., dengue fever), the pest population will collapse. However, this implies the possible irreversible introduction of genetically modified organisms into the environment with possibly unacceptable consequences (COGEM 2011).

On the other hand, a number of animal engineering applications are meant to benefit the environment. For example, in the genome of the “Enviro-pig,” genes are inserted that result in a more efficient phosphate uptake and consequently a lower phosphate content in pig dung, which will thus lead to a lower environmental load (COGEM 2011). The development and commercial introduction was halted, however, because of public concern about this application and resistance to it (Pollack 2012). Finally, a number of people have suggested that modern reproductive technologies, including cloning, may play a role in nature conservation and the preservation of endangered and rare species in the future, although there are many hurdles yet to be surmounted (Andrabi and Maxwell 2007).

Ethics, Animal Technology, and Society

The environment, species, or populations are known as collective entities: They may have moral value of their own as a collection of individual entities and not simply as the sum of the moral values of the individuals. There is also another relevant collective entity at stake when we consider the rise of modern reproductive and breeding technologies: human society. Technology affects our world, leads to new issues, and makes a particular world possible and thus a particular culture. For example, the introduction of the contraception pill in the 1960s drastically changed sexual morality in Western countries (Fukuyama 1999). More recently, we see an enormous impact from the rise of the Internet and smartphones on how people communicate and interact, which in turn leads to new technologies. Similarly, assisted reproduction and breeding technologies have stimulated the development of large-scale or bio-industrial farming practices, which in turn have led to new technologies such as the application of pharmaceuticals to control the appearance of diseases related to crowded stables. In general, we may say that there is a coevolutionary relationship between technology and society. This means they affect and steer each other. Technology

therefore carries with it certain moral codes and should not be considered as simply a neutral driver of societal change.

The interrelationship between technology and society is nicely illustrated in the case of the modified chicken. The killing of millions of chicks in the egg-production industry, according to the report of the CBD (2011), is a consequence of a rationalization process in poultry farming in the second half of the last century. It has led to instrumentalization and adjustment of animals for purposes of efficiency, in a similar way as was already described by Ruth Harrison in the early 1960s.

This has led to separate chicken lines: efficient meat-producing and efficient egg-laying lines. However, the male chicks of the egg lines can clearly not be used for egg production and appear to not be useful for commercial meat production. They are therefore killed immediately after hatching. The committee acknowledges that the killing of these animals directly after birth does not respect these animals as living beings from a biocentric point of view. It is a problem that now seems to be solved by a new technology: genetic modification.

Although the committee considered the genetic modification in the application as morally less problematic compared to the killing of so many day-old chicks, it has questioned the application from an ethics of technology perspective as perhaps an irreversible continuation and intensification of the instrumentalization and rationalization tendencies in poultry farming. Accordingly, the committee has put forward the question of whether this is what we want as a society or whether we should instead look for quite different trajectories of technological development. The committee also concluded that this last question should be answered in a societal debate and has suggested this to the Dutch government. The example of the chicken case demonstrates that ethical questions of modern animal breeding technologies go beyond the level of animal ethics and environmental ethics. In general, ethical issues related to modern reproductive technologies question our relationship to animals and to our

environment and, not least, ask us what kind of society we are really aiming for.

Summary

In this entry we have discussed the rise of modern reproductive technologies in animal breeding that have contributed to an industrialized farming system and consequently to animal welfare problems. Starting with the Five Freedoms concept, we outlined three ethical theories as being those which underlie justifications for attributing moral status and thus respect to animals. Utilitarian considerations focus on the welfare of animals and specifically argue for minimizing or avoiding animal suffering. Animal rights approaches argue that sentient animals should be respected because they have as subjects, experiencing the quality of life, an inherent value, while biocentric approaches stress the moral value of life as an underlying motive for respecting the animal's integrity.

However, animal ethics considerations are not alone in playing a role in this. Animal breeding may affect ecosystems, species, and animal populations. Modern reproduction technologies, for example, may decrease agro-biodiversity that may be questioned from both an anthropocentric and an ecocentric environmental-ethics standpoint. Moreover reproductive technologies such as genetic modification may affect the ecosystem more directly.

Finally, it is argued that technology and society interact and that technologies carry with them implicit moral codes. Modern reproductive animal technologies put questions on the table that exceed the level of animal or environmental ethics and ask us to consider what kind of society we really want.

Cross-References

- ▶ [Agricultural Science and Ethics](#)
- ▶ [Animal Welfare in the Context of Animal Production](#)
- ▶ [Egg Production: Ethical Issues](#)
- ▶ [Environmental Ethics](#)

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Telos and Farm Animal Welfare

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Synonyms

Farm animal welfare and animal physical and psychological nature

There are many reasons why there is relatively scant history of theorizing regarding human moral obligations to animals. First, ethics was largely seen as a highly local phenomenon, governing interactions among limited members of select groups of human beings – witness differing biblical ethical standards for the treatment of Israelites, foreigners, women, slaves, and other subgroups of humans. Second, as St. Thomas Aquinas teaches, animals were not perceived as enjoying genuine moral status. At best, it was obligatory not to treat them cruelly, as they

sufficiently resembled humans so that gratuitous abusive treatment of them was likely to eventuate in cruelty towards full objects of moral concern, i.e., human persons. Most importantly, the overwhelmingly dominant use of animals in society was agricultural, being used for the production of food, fiber, locomotion, and power. As I explain below, this obviated much of the need for theorizing about human obligations to animals.

The key to produce success in animal agriculture was *good husbandry*, wherein the farmer placed the animals in optimal conditions dictated by their needs and natures and augmented their ability to survive and thrive by provision of food during famine, water during drought, protection from predation, medical attention, help in birthing, and so on. So powerful is the hold of the concept of husbandry on the human psyche that when the psalmist wishes to create a metaphor for God's ideal relationship to humans, he uses the Shepherd in the 23rd Psalm. Good husbandry was sanctioned by the most powerful of human motivations – self-interest. Failure to provide for the needs of one's animals resulted in diminished productivity – loss of weight, sub-optimal reproduction, and susceptibility to disease. For this reason, only an extremely minimalistic ethic for animal treatment was required – forbidding deliberate, sadistic, purposeless infliction of pain and suffering on animals, and the failure to provide basic sustenance such as food and water – to cover those deviant humans for whom sadistic gratification was more important than productivity.

A philosophical need for a rationally articulated, robust, animal ethics probably arose with the advent in Europe of Cartesian philosophy which denied consciousness, as well as the ability to feel pain or to suffer, to animals. In response, philosophers in the British empiricist tradition felt compelled to provide a basis for moral concern. These thinkers generally worked in the utilitarian tradition and included Bentham, Mill, Sidgwick, Salt, and Singer, as well as and related philosophers such as Hume. Being empiricists, the desire on the part of all organisms to seek pleasure and avoid pain seemed to them to be an observable and obvious basis for ethics that lent

itself well to quantification. This focus enabled British moral thought to escape from continental European, rationalistic skepticism, as articulated by Descartes, Spinoza, and Kant, about more complex animal thought that excluded animals from the realm of direct moral concern. Animal ethics could thus be grounded in the common sense awareness that animals experienced pleasure and pain even as humans did; that pleasure and pain *matter* to animals.

Practical, societal ethical concern with animal treatment only began in the mid-twentieth century, as society began to recognize the major limitations of the animal cruelty laws and the ethic of anti-cruelty conceptually underlying them. It is almost certain that less than 1 % of the suffering that animals experience at human hands is the result of deliberate cruelty. This societal thrust to supplant the cruelty laws continues to grow, as evidenced in 2004, when no fewer than 2,100 pieces of legislation pertaining to animal welfare were proposed in federal, state, and municipal legislatures across the 50 United States (Flemming 2005).

When I and others began work on improving the moral status of animals in society during the 1970s, the greatest problem we faced was deriving a robust animal ethic that would overcome the limitations inherent in the ethic of anti-cruelty. Equally vexatious was the question of creating an animal ethic that ordinary people would find plausible. While the utilitarian emphasis on maximizing pleasure and minimizing pain had much to recommend it as a basis for animal ethics, it also suffered some severe drawbacks. In particular, I recognized that not every sort of harm humans inflict upon animals counts as pain in any ordinary sense of the word, unless the notion of pain is stretched so broadly as to cover all sorts of misery not usually classified under the rubric of pain. Such states as loneliness, boredom, fear, inadequate stimulation, inability to exercise, separation from offspring or parents, impoverished diet, inability to forage, hunt, or otherwise secure one's own food, and myriad others certainly harm animals, yet do not lend themselves to being arrayed along a single axis of pleasure and pain.

In dealing with this problem, Rollin recalled Plato's dicta that ethics proceeds from preexisting ethics and that in dealing with ethics and adults, one cannot *teach*, one can only *remind*. If society wished to expand the purview of ethics over the treatment of animals, it needed to look towards established ethical concepts with which it was already familiar. People would look to the ethical concepts applied to humans and carry them forward, *mutatis mutandis*, to the treatment of animals.

Recall that, before the mid-twentieth century, the key to agricultural success was good husbandry, which meant taking great pains to put one's animals into the best possible environment one could find to meet their physical and psychological needs and natures (which, following Aristotle, can be called *telos*) and then augmenting their ability to survive and thrive. Thus, traditional agriculture was roughly a fair contract between humans and animals, with both sides being better off in virtue of the relationship. Husbandry agriculture was about placing square pegs into square holes and round pegs into round holes and creating as little friction as possible in doing so.

The rise of confinement agriculture in the twentieth century, based in applying industrial methods to animal production, broke this "ancient contract." With technological "sanders" – hormones, vaccines, antibiotics, air handling systems, and mechanization – one could force square pegs into round holes and place animals into environments where they suffered in ways irrelevant to productivity. If a nineteenth-century agriculturalist had tried to put 100,000 egg-laying hens in cages in a building, they all would have died of disease in a month; today, such systems dominate.

At the same historical moment, animals began to be used on a large scale in research and testing, again causing new and unprecedented degrees of suffering.

The amount of suffering arising from these sources far outweighed what is produced by deliberate cruelty. Further, the anti-cruelty laws do not cover these new uses and cannot be twisted to fit practices such as steel-jawed trapping, sow

stalls, or toxicology testing, since these exemplify "ministering to human necessity," which is the standard legal test for cruelty. Since trapping is hardly a "human necessity," this case graphically illustrates how cavalier the cruelty laws were with respect to animal welfare. Thus, a demand was called forth for a new ethic.

In Western societies, human ethics balances utilitarian considerations – the greatest good for the greatest number – against concern for individuals by building "protective fences" around essential features of human nature; these fences are called *rights*. Rights are a moral/legal notion designed to save features constitutive of individuals' human nature – e.g., the desire for free speech – from being sacrificed for the general welfare. The logic of this notion is being exported to animals – society wishes to assure that their most important interests, flowing from their *telos*, are not sacrificed and that farm animals live decent lives and laboratory animals have pain controlled.

Direct rights for animals are of course legally impossible, given the legal status of animals as property, the changing of which would require a constitutional amendment. (Many legal scholars are working to elevate the legal status of animals (Wise 2000).) But the same functional goal can be accomplished by restricting how animal property can be used. Thus, the US federal laboratory animal laws require pain and distress control, forbid repeated invasive uses, require exercise for dogs, etc., unless exceptions to these are approved by the appropriate review committee as being required for scientific or animal welfare reasons. And some European laws have forbidden sow stalls. This mechanism is the root of what I have called "animal rights as a mainstream phenomenon." This also explains the proliferation of laws pertaining to animals as an effort to ensure their welfare in the face of historically unprecedented uses.

In place of pleasure and pain, society is looking towards the ancient Aristotelian notion of *telos* as the locus of moral concern for animals. An adequate morality towards animals must recognize the full range of possible "matters" unique to different sorts of animal *telos*, or animal

nature, the root notion of Aristotle's functional, teleological biology. Whereas modern biology focuses on reductionist, molecular, and mechanistic explanations, while Aristotle's biology emphasizes the unique set of traits and powers that make the animal what it is – the “pigness” of the pig, the “dogness” of the dog.

Aristotle recognized that different animals evidenced different ways of fulfilling the fundamental nature of living things, i.e., nutrition, locomotion, sensation, cognition, and reproduction. Biology studies these functions in different sorts of animals, and it is these functions that constitute an animal's nature. Secondary school biology is still studied in this Aristotelian way. There is nothing mystical about *telos*; it is simply what common sense recognizes in such sayings as “fish gotta swim, birds gotta fly.” The only departure that must be made from Aristotle today is to see *teloi* not as fixed and immutable but as snapshots of a dynamic process of evolution, genetically encoded and environmentally expressed.

Thus, an adequate morality towards animals should address not only pleasure and pain but also the full range of possible “matterings” following from animals' natures. When one evaluates, for example, gestation crates for sows, they must be compared to what a sow does in nature when she actualizes her *telos*, covering a mile a day rooting and foraging, nest building, building her nest on a hillside so that urine and fecal material will run off, trading off piglet care with other sows, all of which behaviors are impossible to perform alone in a crate. In fact, given the *telos* template, it is evident that fundamental interests of animals determined by their natures are regularly violated in modern agriculture. Their freedom of movement is truncated; they are stopped from eating what they are naturally built to consume by not letting them graze, hunt, or forage; their ability to cope with weather change is aborted, as is their ability to exercise. Denying these natural activities harms the animals in many ways, impeding their exercise of powers they possess to survive.

A nonobvious example of violating animal nature or *telos* may be found in a story recounted by Hal Markowitz. He relates that the Portland,

Oregon zoo built a showpiece exhibit for servals, even importing sand and plants from the Kalahari (Markowitz and Line 1990). The exhibit was a dud; the servals lay around in obvious depression, refusing to eat. When Markowitz visited their native habitat, he found that the bulk of these animals' time was spent predating low-flying birds, their main source of food. He told the zoo that, instead of feeding horsemeat in chunks, the keepers should grind the rations into meatballs, which were then to be shot randomly across the exhibit enclosure by a compressed air cannon. The animals' behavior changed overnight; they became excited and active, clearly exercising the predating aspect of their *telos*. Despite the power of the food drive, it was trumped here by failing to accommodate *how* they had evolved to eat. Similar strategies provide for *telos* accommodation for many animals in captivity.

An example from coyote behavior strikingly illustrates how *telos* needs can trump even major physical pain. It has been recounted for years that coyotes, caught in a leg-hold trap, will chew their legs off, enduring terrible pain, rather than submit to immobility. (This is also true for other animals, such as raccoons.) This is understandable given the coyote's *telos* as a free-ranging predator (or, on occasion, prey). It is not plausible to suggest that the animal chews its leg off to avoid death, since it is not possible that a nonlinguistic being *has* a concept of death, though it clearly understands the inability to escape. Clearly the animal is not chewing the leg in order to escape the pain, as any attempt to chew the leg off will greatly *increase* the pain.

Other animals, wild and domestic, will endure pain and injury to escape close confinement. Though confinement agriculturalists in the United States claim that all the needs of confined sows – food, water, protection from the elements, and protection from predators – are met in confinement, these animals escape when they can, with no reports of any ever trying to return. Chickens will trade ad libitum feeding in confinement for sporadic access to food outdoors. Chickens will also work for food in confinement when given a choice of doing so (Duncan and

Hughes 1972). Monkeys and other animals will self-mutilate in deprived, impoverished environments, the pain presumably providing some stimulation, as a counter to boredom (Berkson 1967; Ridely and Baker 1982; Chamove et al. 1984).

Kilgour (1978) cites evidence showing that cattle being exposed to a new herd show a physiological response for 30 days. In animals, the initial exposure to the experimental setting (i.e., major novelty) evoked the largest elevations in plasma cortisol (Mason et al. 1957; Hennessy and Levine 1979). This is not surprising, since cattle are herd animals who come to know their conspecifics as individuals and hence do not know how new animals will behave. Novelty of any sort evokes stress in most if not all animal *teloi*. Even in human experiments, the introduction to the experimental situation for the first time was often more effective in increasing steroid level than anything else the experimenter could devise, including electric shock (Michalski 1998).

Researchers know that animals can be trained by reward to accept some physically painful experimental procedures. In one instance, a researcher was drawing blood from dogs daily for a vaccine study. She would enter the facility, play with each dog, draw the blood, and give the dog a treat after the draw. On one occasion, one of the dogs set up such a howl as she was leaving that she raced back to see if his paw was caught in the cage door. It turned out she had forgotten to draw blood from that dog, and he had missed his play and his treat, which bothered him more than the blood draw (Kesel 1983). Separation of a newborn calf, routine in modern dairies, can cause mooing on the part of the mother cow bespeaking distress for over a week, even longer if the cow can see the calf (Flower and Weary 2001). This is no surprise, as calves in more natural situations will suckle and remain with the mother for up to 9 months or more.

All of these examples illustrate four major points:

1. Pain, as a physical phenomenon, does not begin to capture all the ways in which what we do to animals matters to them.

2. Other things done to the animals can be worse for them than physical pain. Unfortunately, we have no words for many of the myriad ways we can harm or cause animals to suffer, for example, not allowing the pig to forage, separating a newborn animal baby from its mother at birth, and stopping a chicken from nest building. (For others, of course, we do have words, e.g., creating boredom, social deprivation, and fear.)
3. In general, interfering with or impeding actualization of *telos* creates a negative experiential state for an animal.
4. Appeal to the concept of *telos* provides a far more comprehensive basis for animal ethics than does anything else, including the concepts of pleasure and pain. In addition, the notion of an animal's nature and its moral importance are both plausible and evident to common sense.

A moment's reflection will reveal to any reader the extent to which the vocabulary for dealing with ways of harming animals is impoverished. Virtually none of the ways enumerated above in animals can be harmed even have names or precise descriptions. Yet, the ways in which confinement agriculture infringes upon and aborts needs and desires built into an animal's nature are legion. Even more importantly, now that husbandry agriculture that respects animal *telos* is virtually universally overridden for the sake of profit, efficiency, and productivity and society condemns the resulting suffering, reference to *telos* provides far greater precision regarding what needs to be restored than does talking about pain. All high confinement systems deployed in modern industrialized agriculture are aptly described in relationship to animal *telos*. Whether one is talking about sow confinement, unnatural diets, tail docking in dairy cattle, restrictions on movement, truncation of play, isolation of veal calves, and the animal's never seeing a blade of grass or sunshine, *telos* provides a measure of the inadequacy of these systems.

It is simply mistaken to refer to such infringements as causing pain. A very simple argument demonstrates this point conclusively. Suppose one could medicate animals in a way that totally

abolished any experience of pain. By hypothesis then, the animals would be experiencing no pain and thus no harm and would not be wronged according to utilitarian ethics. Yet, it would be a deviant person indeed who would fail to accept that the animals are being consistently mistreated and wronged by severe limitations on the exercise of their natural abilities.

In the case of all domestic animals, one can further mount the argument that humans are responsible not only for shielding them from harm, but also for assuring them a context in which they can flourish. Acting morally towards horses requires providing them with food, water, shelter, and shade, so as to avoid negative influences on the quality of their lives. But, there is also a moral requirement to provide positive value in their lives, i.e., by helping them be happy. Those who have kept horses know that there are resources that can be provided to these animals that result in positive experiences, for example, when they are given access to a pasture where they can eat, play, and run in relative freedom. Clearly, the equine behavior displayed under such conditions evidences that these animals are experiencing happiness: galloping out of a pen when they are released for the first time in months, kicking up their heels, and giving the uniquely equine “fart of joy.” In other words, not only does *telos* allow us to home in precisely on all of the harms we inflict on animals in the course of using them, it also provides caretakers with guideposts for assessing the extent to which “negative mattering” can be replaced with positive mattering.

There will of course still be some theorists who believe that the notion of *telos* is unreservedly and unacceptably metaphysical. And, indeed, it *is* metaphysical, in the sense that metaphysical concepts are those categoreal notions we utilize as basic concepts when talking about reality. A concept like *telos*, like other commonsensical concepts such as cause and effect, thing, emotion, and indeed all ethical concepts, do not profess or claim to capture absolute, ultimate reality. Rather, they capture the reality of ordinary experience, daily life, and common sense. And such is the realm of common decency and of

the ethics that attempts to capture and to codify it. Even if one is ultimately a scientific materialist and realist, in one’s ethical moments common sense is regnant, and concepts like an animal’s nature occupy center stage.

One can thus argue that the utilitarian concepts of pain and pleasure, as important as they undoubtedly are, are nonetheless inadequate to serve as a comprehensive basis for animal ethics, particularly when ethical questions arise with regard to modern, intensive, industrialized, confinement agriculture. The multiplicity of insults and deprivations inflicted upon animals in such systems are most naturally and plausibly captured by invoking the notion of animal nature or *telos*. The needs and interests that make up what the animal’s nature is inform caretakers when they are harming that animal or behaving in a manner conducive to its happiness in a simple, nonsensical, and straightforward manner. As society begins to address animal ethics in ever finer-grained detail, it is likely that the concept of *telos* will assume ever-increasing importance in the discussion.

Summary

Historically, the overwhelming use of animals in society was agriculture. Since animal production depended on good husbandry, no ethic for animal treatment was needed short of prohibiting deliberate cruelty. Philosophical need for animal ethics arose following Descartes’s denial of animal consciousness and plausibly was answered by appeal to pleasure and pain. It was only when society began to worry about animal treatment in a multiplicity of areas that it became necessary to go beyond pleasure and pain to extend moral concern to all aspects of animal life. Rollin revived the Aristotelian concept of *telos* or nature to accomplish this. Just as human nature, and the rights flowing therefrom, govern our moral obligation to humans, one could plausibly extend this reasoning to animals and base our obligations to them on respect for their biological and psychological needs and natures. Such a move goes well beyond pleasure and pain to meet such

natural animal requirements as moving, grazing, foraging, nest building etc., i.e., all the ways animals meet their needs for nutrition, locomotion, sensation, cognition, and reproduction. Thus, animal ethics must be based in respect for *telos*, which is a much more comprehensive basis for ethics than pleasure and pain, and allows us to recognize both positive and negative mattering.

Cross-References

- [Animal Welfare: A Critical Examination of the Concept](#)

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The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement

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Synonyms

GMO = agricultural biotechnology

Introduction

In recent decades, global flows – whether of goods, services, capital, pests, chemicals, or greenhouse gases – have expanded together with new technologies, norms, and institutions that govern these flows. Several processes tend to denationalize what had been constructed as national in the modern era – policies, markets, capital, culture, and etc. – and to establish new global powers.

The World Trade Organization (WTO), which superseded the General Agreement on Tariffs and Trade (GATT) in 1995, is a central node of this newly emerging global order. Established to police trade barriers for compliance with internationally agreed rules, it also sets global norms, such as standards of intellectual property and risk assessment for health and environmental issues. An agile institution, the WTO Secretariat is a relatively small bureaucracy linking hundreds of country representatives in Geneva.

While many international institutions have suffered a significant reduction in budget and political power in recent decades, the WTO has

exerted a growing influence on nations throughout the world. Unlike most UN institutions and conventions, the WTO has a stringent enforcement capacity with efficient, fast dispute settlement procedures (Yerxa and Wilson 2005). The WTO's dispute resolution mechanism was employed over 400 times in its first 15 years of existence, as compared to the mere 300 disputes settled over the 45+ years of the GATT era. While only one GATT dispute settlement drew upon scientific experts, more than a dozen trade disputes did so in the early years of WTO (Pauwelyn 2002).

Globalization has prompted new means of knowledge production, validation, and appropriation alongside the burgeoning of new technologies. Conversely, science and technology craft and legitimize the new global arrangements. Under the WTO trade regime, science and law are articulated in specific powerful ways, expanding the scientific-expert authority to scrutinize any domestic regulations that impose trade barriers. The WTO's basic assumption is that free trade is good for the world, so no product ought to be excluded from free circulation unless proven dangerous through a risk assessment with scientific evidence. Hence trade disputes constitute a key arena for analyzing how the WTO jointly establishes global legal norms and what counts as relevant knowledge.

To understand how the WTO coproduces global norms and authoritative knowledge in practice, this essay examines the mobilization of scientific expertise in the dispute over genetically modified organisms (GMO). A complaint was filed in 2003 by the USA, Canada, and Argentina against the European Communities (EC) for operating a *de facto* "illegal moratorium" since 1999. The WTO Dispute Settlement Panel reached its findings on that complaint in 2006, largely supporting the plaintiffs' accusations against the EU.

This essay asks the following questions: How were particular forms of legal reasoning were elaborated through the judicial procedure? How does this matter for understanding the expanding power of WTO discipline over health and environmental policy-making in the world?

What are implications for future trade disputes involving issues of human health and environmental protection? To answer those questions, the essay draws upon interviews with staff from the WTO Secretariat, parties to the dispute, as well as scientific experts and also publicly available documents and unpublished correspondence between the Secretariat, the Panel, and parties.

Putting the Dispute into the SPS

After inconclusive attempts at diplomatic negotiation, in September 2003 the WTO's Dispute Settlement Board appointed a Dispute Settlement Panel to review the case. WTO Panels are composed of three "judges," who are economists or trade lawyers by profession. The procedure is usually as follows: the Panel issues a report of findings, which parties can appeal, and then the appeal is heard by the Appellate Body, consisting of seven judges, which also files a report. This process is supposed to last no more than 15 months. However, in the GMO case, that process extended to almost 3 years, even without an appeal.

From the start of the dispute, the parties disagreed over its nature, its legal basis, and the relevance of science. The US Trade Representative (USTR) emphasized that European measures contradict the SPS Agreement's requirement that procedures should be completed "without undue delay," thus posing unjustified trade barriers (USTR 2004a, p. 5). The European Commission Legal Services justified regulatory delays by mentioning scientific uncertainty about environmental and health risks. To avoid the narrower SPS disciplines, which would limit any precautionary approach, the Commission argued that the WTO Agreement on Technical Barriers to Trade (TBT) and the Cartagena Protocol on Biosafety also should be reference points for judging EC regulatory procedures. As early as 2004, however, the Panel had decided to frame the GMO dispute within the SPS Agreement alone, thus rejecting the EC's broader framing (Peel 2006).

To fit the entire dispute into the SPS, the Secretariat and the Panel redefined the ontology of GM crops within a relevant risk category. Originally the SPS Agreement targeted *epizootic* and *epiphytic* diseases – which were seen as risks to “human, animal, and plant life or health” – that may justify national measures limiting trade. As its first move, the Panel classified any environmental harm, including threats to biodiversity, under the SPS category of risks to “animal and plant life or health” (WTO 2006, paragraph 7.219). Secondly, the Panel cast GMOs as SPS agents: GM crops were redefined as “pests” (*transgene* escape hence becoming a “pest effect”) or as “invasive species.” Transgenes were recast as “food additives.” GM pollen became a kind of “animal feed” because it could be ingested by bees (WTO 2006: paragraphs 7.225–7.299). Within the latter move, EC regulations on GMOs become SPS measures applied to protect human life or health from risks arising indirectly from the entry, establishment, or spread of weeds *qua* “pests” (WTO 2006, paragraph 7.360).

With those two ontological moves, the Panel established a particular link between GMOs’ biological identity as ecological agents and GMOs’ legal identity as subjects of SPS rules. Some of these new constructs contradicted definitions from the very international expert bodies that the SPS Agreement itself had designated as global benchmarks for regulatory standards. For instance, the Panel’s framing of transgenes as “food additives” diverged from Codex Alimentarius’ definition of “food additives” as additions made “in the manufacture” stage of food production. Nevertheless, the Panel argued that in the special case of “plant production,” substances intentionally added at the stage of seed development and production could be reasonably considered to be substances added in the manufacture of the food plant, if the substances are present in the harvested plant as a component or affect the characteristics of the harvested plant (WTO 2006, paragraph 7.299).

The Panel hence created new legal ontologies for GMOs and related ecological effects to make them amenable to SPS disciplines. This SPS plot,

in turn, constrained how scientific advice would be mobilized and performed in the dispute settlement procedure.

Framing Questions for Experts

In August 2004 the Panel announced its decision to seek expert advice, as in previous disputes involving the SPS Agreement. Once the Expert Panel members were selected, they were invited to express their views on specific questions, “solely for the purpose of assisting the Panel in its limited task of making findings of *fact* for purposes of these disputes” (Unpublished Terms of Reference, WTO Secretariat, September 2004).

During autumn 2004, the Panel and parties exchanged views on the questionnaire that would be sent to the experts. The final version included 114 questions. One quarter addressed general risk issues, such as sanitary risks related to genetic markers for antibiotic resistance, toxicity of Bt insecticidal crops for humans and nontarget animals, and invasiveness of herbicide-tolerant crops. In line with the Panel’s SPS framing, most questions focused on the scientific basis of the 27 regulatory delays and 11 national bans.

The US proposed to amend the initial draft questions in order to increase the burden of evidence on the Commission to demonstrate clearly that such a scientific basis existed. It also argued that:

... even if evidence of risks exists, an SPS measure must be ‘based on an assessment, as appropriate to the circumstances, of the risks.’ Furthermore, evidence of ‘existence’ of risk is not dispositive to the application of Article 5.7. Instead, the ‘relevant scientific information’ with regard to the risk must be insufficient. (unpublished correspondence, USA to Panel, September 24, 2004).

For instance, the USA proposed to ask the experts about all of the disputed delays or bans in which extra data had been requested from the companies on the potential risks associated with their products: “Is there any basis to expect that [this requested data] would identify any adverse effect that had not previously been identified?”

(USTR 2004b, p. 59). Such questions strongly shifted the burden of evidence to the Panel to demonstrate that extra data were necessary as well as feasibly obtainable.

By contrast, the EC sought to broaden the experts' role. It posed questions highlighting uncertainties and limitations of scientific knowledge during the decade before the plaintiffs filed their complaint in 2003. The EC's strategy was thus to emphasize knowledge gaps and uncertainties within scientific knowledge – understood as evolving over time, with much dissensus among scientists. The extra questions aimed to focus the experts' attention on temporal changes. As the EC later reiterated, "We should not forget that we are looking at the science at that time" (WTO 2006, Annex J, paragraph 437). By engaging experts in a reflexive historicization of scientific knowledge, the EC strategy demonstrated how science was coevolving along with regulatory concerns.

In such ways, the Commission framed the dispute as a debate on past decisions made with knowledge at the time, which was then – but less so now – uncertain and thus insufficient for risk assessment. This historical narrative provided a way to manage the tension between the EC's international and domestic agendas. The Commission Legal Services could defend the EC's regulatory sovereignty, while also limiting member states' scope to continue the *de facto* moratorium (Levidow and Carr 2010, pp. 156–159).

In the context of the dispute, the Commission's strategy also aimed to broaden the notion of risk assessment by emphasizing divergent scientific views as evidence of uncertainty. In the beef hormone dispute, the Appellate Body had stated that:

[SPS Agreement] Article 5.1 does not require that the risk assessment must necessarily embody only the view of a majority of the relevant scientific community . . . governments may act in good faith on the basis of what, at a given time, may be a divergent opinion coming from qualified and respected sources (WTO 1998, paragraph 194).

In this understanding of the Appellate Body, a minority scientific view can justify

a precautionary measure (SPS Art. 5.7), without needing a formal "risk assessment" required by SPS Article 5.1 (Boisson de Chazournes et al. 2009).

The final version of the questionnaire accommodated the USA's stringent view of the legitimate basis for regulators to adopt provisional measures under SPS Article 5.7. Many questions challenged the evidence for regulatory delays or bans, by asking experts the following: was there enough information to make a proper risk assessment as required by Article 5.1 before taking a precautionary measure under Article 5.7? Was the additional information requested really necessary to ensure the safety of the product? Or could not a "technical deficiency" be mitigated by providing other available safety information? Such questions pressed experts to challenge the Commission's defense arguments, thus eliciting expert opinions that could both be cast as "scientific" and be used along SPS lines of legal reasoning.

Expert Disagreements on the Panel's Questions

In the dispute settlement process, science was deeply framed by the WTO setting and a narrow interpretation of the SPS Agreement as the basis for judging the defendant's regulatory practices. On the one hand, in the SPS Agreement, Article 5.1 requires that any measure restricting trade must be based on a risk assessment.

Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal, or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations (WTO 1994).

On the other hand, Article 5.7 leaves some room for precautionary measures in the face of scientific uncertainty:

In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the

relevant international organizations In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time (WTO 1994).

The Panel's questions directed the experts to scrutinize EC regulatory practices, especially in relation to the above criteria in the SPS Agreement. Scientific experts sometimes expressed divergent views, especially on the state of scientific knowledge and its adequacy for risk assessment. As in the case of molecular characterization mentioned above, for each risk issue, some members declared that the available knowledge was already sufficient for a favorable risk assessment. According to more cautious experts, however, available scientific knowledge in the late 1990s had not always been sufficient. For instance, one expert regarded the French rejection of herbicide-tolerant oilseed rape as "compatible with the tone of the SPS Agreement" (WTO 2006, Annex I-4, paragraph 657).

The plaintiffs asked particular experts whether the EC defendant's delays or bans were the only way to manage scientific uncertainty and whether the additional information the defendants requested from companies was essential and if there were alternative ways to manage the potential risks. These questions pressed the experts to comment on risk-management issues. For example, the Panel and plaintiffs posed questions about whether the EC procedures delayed product authorizations by requesting extra molecular data. In response, two experts argued that detection methods were not a necessary component of risk assessment (WTO 2006, Annex J, paragraph 22).

Giving the Panel's Verdict

The Panel's findings focused on the defendant's procedures: between 1999 and 2003 the EC had applied a general de facto moratorium, which led to its failure to complete regulatory procedures for 24 applications (out of 27 targeted by plaintiffs) without "undue delay," thus violating

Article 8 and Annex C of the SPS Agreement. Additionally, the nine national safeguard measures (bans) violated SPS Article 5.1's requirement for a "risk assessment."

For both categories of complaint, the Panel gave the EC's advisory body a decisive role, while maintaining distance from any particular judgement by scientific experts:

EC committees issued opinions on each product and also reviewed the arguments and the evidence submitted by the member State to justify the prohibition and did not consider that such information called into question its earlier conclusions. The Panel thus considered that sufficient scientific evidence was available to permit a risk assessment as required by the SPS Agreement [Article 5.1]. Hence in no case was the situation one in which the Panel had been persuaded that the relevant scientific evidence was insufficient to perform a risk assessment, such that the member State might have had recourse to a provisional measure under Article 5.7 of the SPS Agreement. (WTO 2006, p. 1068, paragraph 8.09).

In that way, the Panel rejected the defendant's main argument, ostensibly on legal-procedural grounds. The EC had cited SPS Article 5.7 as a basis for precautionary measures due to scientific uncertainties, as evidenced by disagreements among the scientific experts during the dispute procedure as well as the wider risk debate. By contrast, the Panel interpreted SPS Article 5.7 as a legitimate basis for a provisional restrictive measure *only* when the relevant scientific evidence was insufficient to perform a proper risk assessment under Article 5.1.

For that legal issue, the Panel deferred to favorable EC risk assessments – such as those from the Scientific Committee on Plants and Scientific Committee on Food, whose earlier opinions had declared that information was adequate for a risk assessment on GM products relevant to the WTO dispute. Moreover, given the existence of official EU risk assessments, this placed a retrospective burden of evidence on EU member states for an alternative risk assessment to demonstrate the inadequacy of evidence at that time. In this regard, the Panel cited the SPS Agreement, which defined a risk assessment as "the evaluation of the likelihood of entry, establishment or spread of a pest or disease within the

territory of an importing Member . . . , and of the associated potential biological and economic consequences” (WTO 1994, Annex A(4)).

The Panel did not explicitly judge whether EC scientific committees’ opinions fulfilled that definition, but it did judge that national objections failed to do so. With the Panel’s narrative of “sufficient evidence available,” any scientific uncertainties and scientific dissensus were cast as irrelevant. This excluded the EC’s narrative of science as historically contingent and contested.

Implications for the SPS Agreement

The Panel made substantive claims – for example, by innovating ontological categories (GMOs are pest, transgenes are food additives, etc.), by asserting that antibiotic markers genes are not dangerous, or by disregarding uncertainties that did not fit its narrow model of risk assessment. But these substantive judgements were not acknowledged as such. They were represented either as dictionary-based elaboration of terms and definitions in the SPS Agreements or else as a purely legal review of the EC’s regulatory procedures, rather than as an engagement with scientific knowledge. Hence it seemed pointless to address substantive risk issues in the findings.

While previous Panels’ findings in SPS disputes had reviewed both defendants’ regulatory practices on substantive grounds and the opinions of scientific experts, the GMO Panel chose a different strategy. Its findings focused on the defendant’s regulatory procedures, while avoiding any serious discussion of expert claims. This procedural turn was later reinforced by the Appellate Body’s 2008 ruling which criticized the Hormones II Panel for having “reviewed the scientific experts’ opinions and somewhat peremptorily deciding what it considered to be the best science” (WTO 2008, p. 612; Peel 2010, p. 216).

This shift may be understood in a political context where previous Panels’ engagement with scientific risk issues had been criticized by anti-globalization activists, EC officials

(Christoforou 2000), and scholars (Busch et al. 2004). The WTO was even warned against becoming a new “trans-science organization,” thus undermining regulatory pluralism through a false, narrow conception of science (Walker 1998). Facing such criticism, especially in the hot social-political context of the GMOs dispute, WTO decision makers found apparently less intrusive means to review the risk issues as a basis for their decisions. Hence the procedural turn in SPS jurisprudence constituted a significant shift in the WTO’s formation of knowledge and norms.

As pioneered in the GMO dispute settlement, the procedural turn constructs both an interface and boundary between science and law. The legitimacy of the judgement rests on its “science-based” imprimatur, hence mobilizing scientific experts and scientific knowledge in the dispute settlement arena. Yet this expertise is framed in a way that allows WTO judges to avoid any explicit engagement with scientific knowledge. Under a procedural requirement for a “risk assessment,” the Panel applied a stringent standard of review to the defendants’ substantive risk claims. In several cases involving technical issues, by contrast, US courts have operated a legal epistemology whereby judges explicitly engage with scientific claims in order to separate sound science from junk science or marginal scientific views (Jasanoff 1995; Edmond 2002; Leclerc 2007). Such explicit engagement can also be found in previous SPS findings (Peel 2010, p. 254).

As this case illustrates, the WTO settlement process mobilizes scientific expertise in particular ways that can achieve multiple aims: it recruits a source of credibility from the scientific arena, reinforces the standard narrative of a “science-based” trade discipline, and constructs a new scientific expertise for the main task – namely, challenging trade restrictions for being unduly cautious. Moreover, by operating a procedural turn in the WTO’s way of knowing, the Panel now keeps implicit its own judgements on substantive scientific issues. The decision makers’ engagement with scientific aspects therefore becomes less explicit and less accountable.

Summary

The World Trade Organization (WTO) dispute settlement procedure is a key arena for establishing global legal norms for what counts as relevant knowledge. As a high-profile case, the WTO trade dispute on GMOs mobilized and appropriated scientific expertise in somewhat novel ways. As shown above, the Panel interpreted the SPS framework as a requirement for “risk assessment” – quantifying likelihoods and consequences and imposing extra burdens upon the defendant to produce evidence. By imposing “the narrowest applications to date of the notion of SPS risk assessment” (Peel 2010, p. 244), the WTO Panel further globalized a “science-based risk assessment” narrative that had emerged during the USA’s Reagan administration (Jasanoff 2011).

Early on, the Panel put the dispute under the Sanitary and Phytosanitary (SPS) Agreement through a new legal ontology; it classified transgenes as potential pests and limited all environmental issues to the “plant and animal health” category. For the SPS framing, focusing on the defendant’s regulatory procedures, the Panel staged scientific expertise in specific ways that set up how experts were questioned, the answers they would give, their specific role in the legal arena, and the way their statements would complement the Panel’s findings.

Moreover, the Panel operated a procedural turn in WTO jurisprudence by representing its findings as a purely legal-administrative judgement on whether the EC’s regulatory procedures violated the SPS Agreement. Meanwhile the Panel kept implicit its own judgements on substantive risk issues. As this case illustrates, the WTO settlement process constructs a new scientific expertise for the main task – namely, challenging trade restrictions for being unduly cautious.

Cross-References

- [Food Legislation and Regulation: EU, UN, WTO and Private Regulation](#)

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Trade and Development in the Food and Agricultural Sectors

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Synonyms

Agricultural policy; Aid for Trade; Economic development; Economic growth; Food security; International trade; Plurilateral agreement on commodity; Regional trade integration; Trade in commodities; Trade policy; World governance

Introduction

The fact that farmers in the poorest countries have very little benefited from the recent price spikes in agricultural commodities is one of the greatest paradoxes of the last few years. Furthermore, in these same countries, city dwellers have suffered just as much from price increases without being better fed by local production. This is why, according to the FAO, the small decrease in the

number of malnourished people suddenly stopped in 2007–2008. The reasons explaining this paradox are well established: Third World farmers only have access to local markets. Roads are poor, means of communication are limited, and storage capacities which would reduce the need to sell produce immediately after harvesting are often unavailable. There are no credits at affordable interest rates and very few mutual organizations to facilitate mutual assistance and insurance.

In fact, this paradox asks us about the ethical dimension of international trade. It is urgent to improve international trade relations taking into account the social welfare, economic, and environmental performance of smaller producers and consumers. Ethical trade aims to bring social and environmental improvements in the existing international trade unlike fair trade which is parallel trade. Thus, an international strategy more aware of the ethical issues should encourage us to develop a more appropriate legal framework for international trade of agricultural products so that trade promotes economic development in poor countries and ensure food security in the world. Such reflection will help us to ensure that ethical issues are not neglected in the international negotiations.

The rising cost of agricultural commodities will benefit the very poor only if agricultural investment is increased and if, perhaps most importantly, the trade capacities of small producers and states are strengthened. This is in fact related to the crucial issue of the link between trade and development: how can trade in agricultural raw materials be better organized and regulated in order for it to foster food security as well as economic development in poor countries? This is an especially important matter as, according to the World Bank, it is in low-income countries that agriculture contributes the most to poverty reduction and general economic development (World Bank 2008).

Commodity markets, sources of income for farmers in developing countries, are in need of ambitious policies and must be a particularly important focus point for the international community. Indeed, 2.5 billion people are engaged in small-scale agriculture in developing countries, and about 1 billion draw part of their income from

commodity exports. Ninety-five of the 141 developing countries depend by more than 50 % on commodity exports for their export income. In particular, the economies of the least developed countries (LDCs) are based on the exportation of tropical products which account for around 70 % of their total merchandise exports (UNCTAD 2011b).

The international economic order has never managed to address satisfactorily the issue of commodity trade. However, in view of the challenges faced by agriculture, the problems tied to commodities must urgently be placed on the top of the international priority list. The goal to achieve is to assure trade in agricultural commodities, thereby ensuring global food security, providing leverage for the economic development of poorer countries, and ensuring also an important source of raw materials supplying the agro-industrial sector of developed countries.

It is thus important to ensure the consistency of trade policy goals with the aims of development as well as with food security. This necessarily requires a new international consensus on development and a reinforcement of development programs in the area of basic agricultural commodities. It also entails taking into account non-trade-related aspects linked to agriculture in order to respect sustainable development objectives.

Legal recognition of a secure and continuous access to agricultural raw materials for importing countries in exchange for a better organization of the primary commodity markets would be desirable. In the absence of an agreement under the WTO Doha Development Agenda framework, reaching a less comprehensive multilateral agreement on basic commodities, based on the model of a partnership and cooperation agreement placed under the auspices of the WTO and UNCTAD, would strengthen international cooperation on the management and trade of basic commodities.

A New International Consensus on Agricultural Commodities

The failure of the Washington Consensus and of structural adjustment programs entails a need for

new thinking on development. The current economic crisis has indeed put into question some of the basic paradigms of the economic model which has prevailed in the last couple of decades, as can be seen from certain evolution at the World Bank.

Agriculture has critical capacities in terms of poverty reduction. Agricultural growth has a specific impact on poverty reduction in every category of country. It is estimated that GDP growth attributable to agriculture contributes at least twice as much in reducing poverty as growth in GDP related to the nonagricultural sector. For China, aggregate growth originating in agriculture is estimated to have been 3.5 times more effective in reducing poverty than growth outside agriculture and for Latin America 2.7 times more (World Bank 2008). Agriculture is thus a crucial development tool for the achievement of the Millennium Development Goal of halving by 2015 the number of people living in extreme poverty and suffering from hunger. This is the core message of the World Bank's 2008 *World Development Report*. Moreover, according to the World Bank, one of the key factors in agricultural growth is the development of agricultural trade. Trade is critical for economic life: without exchange, progress and economic development are impossible. As a matter of fact, trade in basic commodities contributes to three fundamental objectives: global food security, economic development of developing countries, as well as supplying with resource-poor countries.

However, if promoting trade of agricultural products is important, it is also essential to strengthen both production and trade-related capacities of small producers and poor countries which will enable them to sell their products on international markets. Indeed, market access commitments (e.g., reduction of tariff barriers) are rendered useless if poor countries are faced with capacity constraints which restrain their ability to take advantage of these commitments. The Aid for Trade Initiative is consequently indispensable in order to help the countries concerned to integrate themselves in the world market and to exploit their trade and growth

potential. The Aid for Trade Initiative was officially instituted following the Hong Kong 6th Ministerial Conference in December 2005. It has been presented as a promising development tool, aiming at furthering trade integration of developing countries. Aid for Trade is about helping developing countries, in particular the least developed, to build the trade capacity and infrastructure they need to benefit from trade opening. For example, investing in the infrastructure – roads, ports, telecommunications, and energy networks – is needed to link products to global markets or strengthening economic to increase competitiveness in export markets. Such efforts also play a major part in achieving the Millennium Development Goals concerning food security and economic development.

Is the Resource Curse Inevitable?

Contrary to popular belief, primary commodities' trade does not necessarily lead to underdevelopment (P. Bairoch 1993). Trade in mineral raw materials and agricultural basic commodities has often been linked to a *resource curse* causing impoverishing growth for certain commodity-exporting countries. Though the resource curse is certainly a reality, it is far from being inescapable (Havro and Santiso 2008) as shown by the cases of Norway, Chile, or Malawi. These countries offer valuable lessons to developing countries in terms of sensible management of mineral and agricultural resources. The key to such success stories is due above all to the quality of institutions and reforms which have been instigated over time. Clearly, these countries have been able to devise efficient political and economic governance in order to successfully manage these resources.

If basic commodity exports do not necessarily lead to underdevelopment, nevertheless, the best way to encourage further development remains industrialization as well as product and export diversification. Markets function most effectively when the institutional environment in which they operate is stable and efficient. This entails virtuous political and economic governance which is unfortunately still lacking in many poor countries.

Aid for Trade in Support of Development and Food Security

All studies agree on the need for an increase in agricultural production in order to achieve global food security. However, although increased production is important, it is also essential to ensure the conservation of agricultural products and their proper commercialization. According to the FAO, 630 million tons of agricultural products (or 1/6 of the world's production) are lost in developing countries due to poor storage facilities and a lack of infrastructure enabling proper processing of these products (FAO 2011).

Opening markets and trade preferences by themselves are not sufficient to generate development and ensure food security. Though international trade does potentially have an important role in the fight against food insecurity and poverty, there are some necessary prerequisites in order to be able to seize the opportunities offered by trade. The major constraints in poor countries are low trade capacities and high costs of production. Developing the supply capacity of agriculture as well as infrastructure (transport, energy, telecommunication) and creating a judicial and economic environment favorable to production thus seem crucial. Moreover, even when they do exist, trade preferences granted by developed and emerging countries to products originating from developing countries are not sufficient as the latter must also meet stringent international norms and standards. Help in achieving compliance with international standards and in improving the quality of products is fundamental.

Aid for Trade – which covers about one third of all public development aid (Lamy 2011) – aims at putting trade at the service of development. It helps countries take advantage of the opportunities offered by the multilateral trading system to generate economic growth and fight against poverty. Providing market access opportunities is a necessary condition, though not always sufficient, to ensure that countries benefit from trade. Other actions are also necessary to help developing countries, and especially the least developed ones, to upgrade their trade-related infrastructure and to overcome the limitations of their production and trade capacities in

the agricultural sector. It is therefore necessary to improve the trade capacity of least developed countries to ensure food security of the world and increase the livelihoods for small farmers.

Market Access: A Necessary Albeit

Insufficient Condition

During the past 50 years, access to developed countries' markets has been facilitated by a reduction of tariffs and quantitative restrictions, although the practices of levying higher tariffs on finished goods than on raw materials (tariff escalation) and of charging unusually high tariffs on goods thought to be sensitive (tariff peaks) remain very worrying. Tariff escalation may have the effect of protecting processing industries in high-income countries while making it more difficult for developing countries to enter value-added markets. Clearly, market access alone is not a sufficient condition to ensure development gains flowing downstream to commodity producers, traders, and processors in developing countries.

Free trade agreements – whether bilateral or regional – are meant to promote and expand trade. But no matter how noble they may be, they will have very little impact if their potential beneficiaries are not able to produce goods of the quality demanded in the developed countries' markets. For example, duty- and quota-free access for products from the African, Caribbean, and Pacific countries (ACP) to the European Union, under the Economic Partnership Agreements, means little if these countries cannot meet the applicable standards.

One of the major impediments to free market access and trade has been the proliferation of safety and quality standards, not to mention divergent laws and technical regulations. In recent years, legitimate concerns have also increased over the safety and quality of food entering the world market due to health hazards associated with avian influenza, bovine spongiform encephalopathy (BSE, or “mad cow disease”), dioxin in eggs and pork, melamine in dairy products (infant milk), and swine flu. Mycotoxins (toxic elements produced by fungal agents) have also been found in agricultural

products, salmonella in peanut products, and pesticide residues in plants.

In response to this situation and in order to safeguard the health of humans, animals, and plants, developed countries, in particular, have adopted a great number of food safety and quality standards as well as legal provisions and technical regulations. Most commodity-dependent developing countries are ill equipped technically to comply with these regulations and standards, whether public or private, and do not have the financial resources to offset the excessive costs of compliance.

Reinforcing Development Programs in the Agricultural Commodities' Sector

Without adequate processing and packaging immediately after the harvest, agricultural losses can represent 60 % of the production and that even before reaching the first point of sale. The lack of packages for perishable products meeting international standards also results in huge losses and dramatically reduces profit margins for both producers and exporters. Africa (apart from South Africa and the Maghreb region) could increase its agrifood exports by 30 % simply by improving the quality of its packaging. In Western Africa, on around a 100 billion dollars of exports each year, there is a potential income loss of approximately 30 billion dollars (International Trade Centre 2010).

Compliance with sanitary and phytosanitary standards (SPS) and infrastructure are crucial trade issues for poor countries. These SPS standards significantly reduce the agricultural exports from the South to the North but do not affect North-North trade, confirming the fact that SPS standards have a real impact on trade due to the incapacity of developing countries to meet these norms (Otsuki et al. 2001; Chan et al. 2006). Compliance with international standards can thus be regarded as a major obstacle to the full participation of developing countries in the multilateral trade system.

It therefore seems clear that programs to help developing countries comply with international standards and effectively develop adequate infrastructure would dramatically boost their trade

performances. As a matter of fact, a great number of donor agencies as well as intergovernmental bodies and NGOs have started to provide technical and financial assistance to developing countries to enable them to comply to these standards or to obtain certification from well-respected bodies. For example, the Codex Alimentarius (FAO/WHO) finances the participation of developing countries in standardization meetings, and the WTO's Standards and Trade Development Facility (STDF) is funding projects that support developing countries in building their capacity to implement sanitary and phytosanitary standards as a means to improve their ability to gain market access.

However, in 2010, the UNCTAD noted that "Commodity-related policies have often been neglected when it comes to designing national development strategies, which has resulted in missed opportunities for the commodity sector. Although the objectives of the Enhanced Integrated Framework and the Aid for Trade initiative are to assist countries in integrating trade into their development strategies, commodities are seldom explicitly singled out" (UNCTAD 2010).

The producer's ability to provide a product that meets the buyer's requirements in terms of certification clearly depends, on the one hand, on the producer's knowledge of these requirements and, on the other hand, on having the resources to satisfy such exigencies.

Fuller integration of commodities in the objectives of development strategies based on the Aid for Trade Initiative should thus be a priority on the international policy agenda. The work of the WTO's Enhanced Integrated Framework (EIF) and of Standards and Trade Development Facility (STDF) should therefore be sustained and reinforced. (The STDF is a global partnership that supports developing countries in building their capacity to implement international sanitary and phytosanitary standards.) Strengthening development programs which aim at improving the production and trade capacities of developing countries in the sector of basic commodities would not only benefit poorer countries given the high share of agricultural products in their exports but would also have more global effects

such as boosting worldwide economic development and food security. In fact, improved sanitary and phytosanitary capacity in developing countries supports sustainable economic growth, poverty reduction, food security, and environmental protection.

A Partnership and Cooperation Agreement for Agricultural Commodities

The criticism of the Washington Consensus and of structural adjustment programs calls for new thinking on development and for a new development-based international consensus – or in WTO's Director, Pascal Lamy, words, it is time for a "consensus on making trade work for development" (Lamy 2006). But what could be the concrete translation of such a new consensus on development in the commodities sector? A partnership and cooperation agreement on commodities in the framework of a renewed international architecture would be a major step towards meeting the Millennium Development Goals concerning food security and economic development.

Regional Trade Integration: A Necessary Prerequisite

According to a World Bank report (World Bank 2012a), regional integration can contribute enormously to food safety. However, regional integration is still almost nonexistent in developing countries, and cross-border trade within the African region represents less than 10 % of its total trade exchanges. The report even notes that it is easier for Africa to trade with the rest of the world than with itself.

Regional trade integration therefore needs to be deepened – especially in Africa – in order to avoid trade misappropriation (Rakotoarisoa 2011): as long as trade barriers remain among countries within the region, trade flows risk being diverted away and revenue and employment potentially lost. These losses could weaken the regional agricultural sector when the latter could have been an efficient and reliable supplier

had the intra-regional barriers not existed. For some agricultural products, regional partners sometimes face much higher applied tariffs than outside suppliers. Many nontariff barriers still exist in the different African regions (Koroma et al. 2009) hindering the free flow of trade. In a report published in December 2005, the FAO stressed that “for developing countries as a whole the greatest potential gains from agricultural liberalization will depend not on reform of the agriculture support system in OECD countries but on reforming their own trade policies, which would encourage greater trade between them” (FAO 2005).

Africa does indeed have the means to produce and supply enough food to feed its population (World Bank 2012a), but this potential is not exploited because farmers are confronted by multiple trade barriers. Among these, many obstacles can be mentioned: the poor general state of infrastructure and roads especially, high transport costs, and the unpredictability of trade policies. The liberalization of intra-regional trade is therefore crucial in a context of rapid urbanization and dramatically increased demand for foodstuffs.

The Objectives of a Multilateral Agreement on Agricultural Products

In November 2011, the Cannes G20 summit observed: “We stand by the Doha Development Agenda (DDA) mandate. However, it is clear that we will not complete the DDA if we continue to conduct negotiations as we have in the past” (§ 66 of Final Declaration of the G20 Cannes Summit). It is therefore necessary to review agricultural trade negotiations in terms of both framework and content.

Given the issues at stake concerning agricultural commodities and to provide crucial support for importing countries, it would be desirable for the international community to recognize a secure and uninterrupted access for agricultural commodities in exchange for better organization of the commodities market.

However, launched since 10 years ago in the WTO, the Doha Round is blocked and undermines the chances of concluding a multilateral agreement ambitious, comprehensive, and

balanced. In the ongoing discussions on how to overcome the current deadlock in the Doha Round, the idea of using plurilateral agreements is increasingly discussed.

According to the WTO, there has been an increase in the number of preferential trade agreements (PTAs). Over the past 20 years, their number has more than quadrupled, with nearly 300 today PTAs in force (WTO 2011).

Plurilateralism must be rehabilitated because it is less harmful than the “minilateralism.” In particular, it remains under the control of the multilateral organization, which de facto is not the case of bilateral agreements. The prospect would be to encourage countries to join gradually this type of agreement to “multilateralize” it after. Obviously, a plurilateral agreement on agricultural products should be perceived not as a rule ideal but as a safeguard, a blessing in disguise.

Reaching a (plurilateral) agreement on commodities, based on the model of a partnership and cooperation agreement and under the aegis of the WTO and the UNCTAD, would enable to strengthen international cooperation on the management and trade of commodities. This agreement would not be aimed at trade promotion; it would focus on food safety and agricultural development through trade.

A (plurilateral) agreement on agricultural commodities should thus include a development aid component with funding provided for producing countries to, among other things, increase their production and trade capacities. It would consist in:

- Better integrating commodities in aid for trade strategies
- Supporting international initiatives aimed at strengthening the capabilities of the poorest countries to comply with international standards (SPS) but also striving to encourage their involvement in standard development
- Encouraging commodity processing in poor countries as it is an important source of added value by eliminating the adverse effects of tariff escalation for commodities processed by LDCs
- Supporting the economic organization of production and supply chains

The Cannes G20 summit recognized the importance of innovative funding mechanisms for development. The idea is to introduce a tax on the financial sector designed to boost a coordinated development policy. In the agricultural sector, innovative funding could have a considerable impact on food safety and the economic development of poor countries.

Indeed, agricultural commodities markets have become increasingly financialized (UNCTAD 2011a): commodity derivatives, which were traditionally considered as hedging instruments, are now seen as financial investments and are the object of a huge volume of transactions. As such, they are sometimes completely disconnected from the reality of commodity trade. Each year, on the Chicago stock exchange, the equivalent of 16 times the production of corn and 8 times the production of wheat is traded on the derivatives markets.

Therefore, could we imagine the introduction by the international community of a tax, even minimal, on financial transactions related to agricultural commodities? The goal is not to limit financial transactions as they are an important source of liquidity but to fund agricultural development projects aimed at boosting infrastructure and strengthening the production and trade capacities of poor countries. Once again, the idea is not to counter the market but to, just as in the case of trade, accompany it and adjust its rules.

An International Framework to Secure Trade of Agricultural Products

More than trade liberalization, on which the Doha negotiations have stumbled, the major aim of the multilateral system should be to regulate and update the rule of law. The WTO must contribute to judicial safety and to the predictability of the trading framework. Even though agricultural products represent only 7 % of world trade, two thirds of all the countries in the world are net importers of foodstuffs, and only a third are net exporters.

As such, a (plurilateral) agreement on agricultural commodities should be conceived as a framework for securing agricultural trade in

order to ensure the supply of commodities for importing countries. Such an agreement should therefore be conceived as:

A partnership and cooperative agreement combined with a development aid program in the field of agricultural commodities

An international framework to assure trade in agricultural products achieved through the progressive phasing out of custom duties and quantitative restrictions on trade of products originating from signatory countries as well as through the prohibition of unfair trading practices

The recognition of the importance of non-trade concerns in agriculture such as social and environmental issues (food safety, land tenure security, and the multifunctionality of agriculture)

Contemporary agricultural and food global relations have profoundly changed due to, in particular, the risk of a structural imbalance between supply and demand of agricultural products, a growing demand for food and raw materials in emerging economies, the necessity to take into account global climate change, and the related increased politicization of the supply issue. Given the scarcity of agricultural raw materials and mineral, governments are rediscovering the political necessity to secure their supply management (e.g., exports restrictions and taxes in Russia and China). The structure of agrifood trade has also considerably changed since the 1980s. Whereas trade used to be heavily influenced by states, agricultural commodities markets are now increasingly privatized and managed by agribusiness industries.

To what extent could the current international architecture distance itself from zero-sum competition and tend instead towards positive-sum global coordination in the agricultural sector? Though it is crucial for the international community to recognize safe and continuous access to commodities for importing countries, it also desirable that, in exchange, agricultural products' markets be better organized for the benefit of exporting countries.

The producer has always had to make a trade-off between market expectations and desired

income from his/her work. It is therefore necessary to secure his/her income through contractual arrangements. Knowing that he/she is going to be able to sell his/her agricultural production at a guaranteed price is a necessary, if not existential, condition for the producer. Why not, then, encourage the development of a legal and economic framework for such a purpose: a supply contract would be the legal instrument which would establish the transaction between the importer (state or industry) and the exporter (state or industry) and through which the former would commit to be supplied by the latter on a continuous basis or for a determined period of time and a financial consideration based on indexed or fixed prices. Given the ever closer worldwide ties resulting from trade globalization and from the increasing importance of non-state actors, the main stakeholders in the global commodities' supply chain should collaborate more efficiently in order to find some win-win solutions – which should be both efficient and sustainable – for these various, and now global, issues. A multi-stakeholder partnership on commodities similar to the one established for mineral resources (the *Extractive Industries Transparency Initiative, EITI*) should be established. The EITI was launched in 2002 at the World Summit on Sustainable Development with the goal of coordinating public and private sector activities related to the exploitation of natural resources.

Given the tensions and uncertainties related to agricultural products markets – illustrated by the “land-grabbing” phenomenon, for example – international governance is necessary in order to reconcile trade necessities and ethical imperatives. The 2008 food crisis and rising food prices in 2011 led to a skepticism more marked towards the global market. Some states have concluded that they could no longer rely on the international market for grains for sustenance. The scramble for farmland (land grabbing) in Africa and Latin America is a sign of distrust in global markets and will be the source of future geopolitical tensions over access to resources “rare” increasingly coveted. Commodities will be tomorrow the cause of international crisis.

In the majority of raw material-producing countries, the development model based on natural resources does not ensure fairness nor does it stimulate development. Governance of commodity trade still remains to be tackled. A (plurilateral) agreement on commodities, under the auspices of the WTO and UNCTAD, should therefore be based on the classic principle of states' economic interdependence: in exchange for better organized commodity trade, producing countries would commit themselves to guaranteed supplies for consuming countries. The 2008 and 2011 food crises have highlighted the dangers and disruptive effects of export restrictions. Agricultural basic commodities should no longer constitute the cause of international crises. They should be an important factor of economic cooperation between rich and poor countries and not a battleground.

Summary

In the twenty-first century, agriculture remains a fundamental instrument of sustainable development and poverty reduction. Nonetheless, continued worldwide food supply problems reveal weaknesses in the model of world governance we have inherited from the past. States and world actors should thus organize a new global network that facilitates the coordination of worldwide trade and agricultural policies in order to let trade truly benefit development. Commerce is vital, because it is the foundation of economic life, and without exchange, there can be no progress or economic development. The challenge is to organize international commerce of agricultural products in a way that improves world governance of agriculture because fighting hunger and making agriculture work in the interests of development demand a minimum amount of regulation of international agricultural commerce. This necessarily requires a new international consensus on development and a reinforcement of development programs in the area of basic agricultural commodities. It also entails taking into account non-trade-related aspects linked to agriculture in order to respect sustainable development objectives.

Cross-References

- [Biodiversity and Global Development](#)
- [Food Security and International Trade](#)
- [Multilateral Trade Organizations, Food, and Agriculture](#)

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Trade Policies and Animal Welfare

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Synonyms

Animal treatment; Cruelty to animals; Sanitary barriers; Standards for animal care; Trade in animal products

Introduction

International trade law makes no specific provisions relating to animal welfare. Nation-states are the entities that make commitments to the governance of trade in international agreements. Within societies, ethical preferences for animal welfare vary in both the level of welfare desired for animals and the specific provisions that are deemed to provide acceptable levels of animal welfare (e.g., types of housing, how animals can be slaughtered, what constitutes cruelty, etc.). The distribution of individual preferences pertaining to animal welfare varies among societies, and national regulatory regimes tend to reflect those broad differences among societies. Differing national standards lead to trade frictions either because (1) countries with what they perceive as higher standards wish to exclude animals and animal products that originate in countries that are perceived as having lower standards or because (2) countries wish to use trade sanctions to induce other countries that have what

they consider unacceptable standards to improve their provisions for the welfare of animals.

Ethics in International Trade Law

The major multilateral institution that fosters the negotiation of rules for international trade is the World Trade Organization (WTO). There are also hundreds of preferential trade agreements among regional groupings of countries and bilaterally between individual countries. These preferential agreements could have provisions pertaining specifically to animal welfare, such as those of the European Union, but unless otherwise stated, the discussion below will deal with the WTO agreements. Further, there are multilateral environmental agreements such as the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), which has provisions that regulate international trade in animals and animal products, and standards setting scientific organizations such as the World Organization for Animal Health, which, for example, has been mandated to take the lead internationally on animal welfare, including establishing standards for how trade in animals is conducted.

The current multilateral rules of trade stem from the institutional arrangements put in place at the end of the Second World War to reduce the sources of conflict among countries. The United Nations was established to reduce political conflicts between nations, the World Bank was established to deal with differences in the level of development between countries, and the International Monetary Fund was put in place to reduce the use of strategic currency devaluations. A fourth institution was negotiated, the comprehensive International Trade Organization (ITO), but was stillborn, primarily because the US Congress was not expected to ratify it (Kerr 2000). One of the ITO's subagreements, the General Agreement on Tariffs and Trade (GATT), was ratified by the US Congress and by default became the de facto multilateral organization making rules for international trade. The GATT came into being in 1947. The GATT was primarily concerned with removing barriers to trade put

in place to provide economic protection against imports; almost no provision for ethical objections to trade was included. The only exception was in GATT Article XX (a) which allows countries to impose trade barriers *necessary to protect public morals*. The provision recognized that countries might wish to limit imports of pornography or products not allowed for religious reasons such as pork or alcoholic beverages in Islamic countries. It has not, as yet, been invoked for reasons pertaining to animal welfare.

Part of the reason that provisions for ethically based trade barriers were not included in the GATT was that the economic model that underlies it only expects producers (facing competition from imports) to ask for protection. As protection raises prices for consumers, and hence as they are worse off, they are never expected to ask for protection (Kerr 2010). This model makes sense in the context of economically motivated protection from import competition – the original concern of the GATT. In 1994, the GATT was rolled into the new more broadly based World Trade Organization (WTO). Much of the original 1947 GATT was simply incorporated without change into the WTO. No new provisions on ethics were included in the updated GATT 1994. Any such change would have required consensus from the 100-plus member states of the GATT.

The perception enshrined in the WTO that requests for protection come only from producers in importing countries seeking economic benefits has led to increasing difficulties for the organization since its inception in 1995. Other groups in society are increasingly interested in specific attributes (other than price) of the imports in their markets and sometimes request that their governments put protectionist measures in place. In particular, consumers and environmentalists have been active in requesting protection – one obvious example is genetically modified organisms and food (Kerr 2010). Other examples include products produced using child labor, timber produced in an environmentally unsustainable manner, beef produced using growth hormones, and products from animals killed in ways some consumers consider excessively cruel (e.g., leg

hold traps, clubbing of seal pups). The WTO has no mechanism for directly dealing with governments faced with consumer, environmental, or other groups seeking protection (Perdikis et al. 2001). As a result, governments faced with protectionist pressure from consumers or environmentalists in society have often attempted to use other existing mechanisms as justifications for the imposition of trade barriers. In particular, for food safety and the conservation of natural resources, trade barriers are allowed in the WTO and have been areas where contentious consumer or environmental issues have been raised. These ostensive *food safety* or *conservation* issues often embody ethical concerns as well (e.g., genetically modified products or timber from rainforests). Countries may also simply choose to ignore their WTO commitments and put trade barriers in place – countries can impose barriers as long as they are not challenged. As challenges are not costless, in both resource terms and political terms, a challenge may simply not take place. Further, if challenged, a country can choose to ignore an adverse WTO panel ruling and, instead, accept retaliation while keeping its trade barrier in place – as was the case for the EU when the WTO ruled that its import ban on beef produced using growth hormones contravened its WTO commitments (Kerr and Hobbs 2005).

The only direct attempt to have animal welfare concerns incorporated in multilateral trade agreements at the WTO came from the European Union. In response to ethical concerns of consumers across the European Union, in the 1980s and 1990s, the European Commission had been gradually raising animal welfare standards across the EU. This led to two trade issues. First, while consumers in the European Union could be assured that the animal products they were consuming which originated in the EU conformed to the EU-mandated standards for animal treatment, no such assurances could be provided regarding animal products imported into the European Union. This issue could be dealt with through labeling requirements that would require those exporting animal products to the EU to label their products regarding the animal welfare standards that were applied during their production

(Hobbs et al. 2002). Labeling would allow consumers to choose those imported products that they felt had been produced in an ethically acceptable manner.

Labeling is governed by the WTO's Agreement on Technical Barriers to Trade (TBT). Under the TBT, labeling is allowed for new products. It could be argued that animals produced to meet recently introduced higher animal welfare standards constituted new, different, products than those produced using previous (old) animal welfare standards, and labeling could be required. In the negotiations when the TBT was established, however, developing countries feared that allowing trade barriers (including labeling requirements) on the basis of the technology used in production would allow developed countries to erect trade barriers on the basis that less sophisticated technology was employed in production (e.g., cotton shirts produced using handlooms when sophisticated machinery was used in developed countries to produce the same shirt). This was a difficult negotiation, and the eventual compromise that was struck was that trade barriers could be put in place for new products if they are discernibly different, but not based on how they are produced (Isaac 2007). This is known as the production and processing methods (PPM) provision. Animal products such as meat can only be differentiated by the animal welfare standards used in their production – a PPM. They are not visually differentiable by consumers. Thus, any animal welfare-based labeling requirement for imports was rejected by developing countries. For them, it would have represented the *thin edge of the wedge* for the erosion of their hard-fought achievement of the PPM provision (Hobbs et al. 2002). The PPM provision has been at the heart of much of the controversy regarding the WTO, not only over animal welfare but also environmental sustainability, genetically modified products, child labor, and a host of other issues that have an ethical dimension (Kerr 2010).

The second trade effect of the EU's implementation of stricter animal welfare standards than most of its trading partners was that it increased

the costs of producing livestock products in the EU relative to those of import-competing countries – it reduced the international competitiveness of EU livestock producers (Hobbs et al. 2002). Hence, it was not the direct ethical issue that led the EU to push for some recognition of differences in animal welfare regulations in multilateral arrangements dealing with international trade, but it was the competitiveness issue.

At the second special session of the WTO's Committee on Agriculture in 2000, the EU submitted a formal proposal on animal welfare and trade in agriculture calling for animal welfare standards to be addressed by the WTO. The EU put forward several ideas as to how the issue of animal welfare standards could be addressed within the WTO. Their first suggestion was for the creation of a new multilateral agreement on animal welfare. It is unclear whether the EU intended the new agreement to be part of the WTO framework (e.g., like the Agreement on Technical Barriers to Trade) or outside it (e.g., like the CITES).

The second idea was to allow the imposition of a labeling regime pertaining to animal welfare standards for imported foods using products from commercially produced animals as inputs. The EU argued this would enable consumers to make an informed choice.

Third, the EU proposed allowing the provision of compensation to enable producers to meet the additional costs of producing food to EU animal welfare standards – in other words non-actionable (green box) subsidies. Under the WTO disciplines on subsidies, non-actionable subsidies can be used without the threat of countervailing measures from other members (Meilke and Cranfield 2007). According to the EU, this suggestion was aimed at reducing disparities in competitiveness between countries with different standards and would have no, or at most minimal, effects on trade and production. The EU stated that its three proposals are not mutually exclusive and that some combination of the three would be possible. They conclude their statement by reiterating their aim to “address adequately the issue of animal welfare within the WTO, without conflicting with the

long-term objective of trade liberalisation in agricultural and food products” (WTO 2000, p. 3).

The response from other members of the WTO to the EU proposal was emphatic and somewhat predictable. Developing countries responded strongly to all three aspects of the proposal. A number of countries (Uruguay, Bolivia, Thailand, India, Pakistan) took up the theme that, while not indifferent to animal welfare, the priority for their resources was the alleviation of human poverty (Hobbs et al. 2002). This was interpreted as an implicit rejection of the EU's suggestion that there be a separate multilateral agreement on animal welfare. In a similar vein, Argentina and India stressed that countries should be left to set their own standards. Colombia and India rejected the labeling proposal as simply disguised barriers to trade. A number of countries, both developed and developing, suggested that it was up to consumers to decide if they wished to pay for higher animal welfare standards – indicating rejection of both mandatory labeling and the extension of non-actionable subsidies to cover the extra costs. A number of countries, including the USA, rejected any extension of non-actionable subsidies to encompass compensatory payments for higher animal welfare standards, and Argentina explicitly stated that it could not accept any extension of the Green Box list of WTO-sanctioned subsidies to cover the issues raised by the EU (Hobbs et al. 2002).

Some developed countries, however, seemed more willing to accept that animal welfare is worthy of multilateral discussion. Most did not think the WTO was the correct forum for that discussion, suggesting that a separate agreement outside the WTO might be the way to proceed. Australia, however, suggested that the issue should be left to the World Organization for Animal Health (OIE) (Hobbs et al. 2002). The latter suggestion may have had some resonance with the multilateral community as the OIE was mandated to take the international lead for animal welfare. Since 2005, the OIE's members have developed and adopted eleven welfare standards, eight for animals, and three for aquatic products (OIE n.d.). These include transport of animals by

land, transport of animals by sea, transport of animals by air, slaughter of animals for human consumption, and the killing of animals for disease control purposes, among others.

The OIE is recognized in the WTO's Agreement on Sanitary and Phytosanitary Measures (SPS) as an official standards setting organization. This does not mean that WTO members must adopt OIE standards. In the trade context, it means that any country adopting the OIE standards cannot be challenged by other countries that might perceive the standards as trade barriers – they are a *safe haven* (Isaac et al. 2002). As yet, however, there are no direct provisions pertaining to animal welfare in the WTO agreements.

Trade Sanctions

Countries have also attempted to use trade sanctions to induce other countries to alter their practices in ways that would improve animal welfare but justified on grounds of environmental sustainability. GATT Article XX (b) allows trade measure to be put in place when necessary to protect human, animal, or plant health, while Article XX (g) allows them for conservation of natural resources, which some countries have taken to mean marine mammals. The most famous, and controversial, cases involved fishing practices for tuna that lead to the snaring of dolphins in nets leading to dolphins being killed or maimed. In response to the concerns of animal welfare advocates and others, the USA enacted measure to regulate tuna fishing practices so that such *incidental* takings of dolphins would be reduced (Isaac et al. 2002). These measures were contained in the Marine Mammal Protection Act (MMPA) of 1972 and applied to the US tuna fishing fleet. Other countries, however, continued fishing for tuna in dolphin-unfriendly ways. The MMPA also authorized the imposition of import embargoes on fish caught by nations that do not adequately provide for dolphin conservation. It should be noted that expanding the set of products that could be embargoed beyond tuna was clearly intended as an economic sanction to be used to

induce a change in the behavior of other countries (Gordon et al. 2001). In 1991, the US government imposed an import ban on the importation of tuna from Mexico. In response, Mexico requested a GATT dispute resolution panel be struck. The panel, through convoluted reasoning, found in favor of Mexico. According to Spracker and Lundsgaard (1993), the heart of the panel's reasoning was that the import ban could not be employed “in order to regulate production methods that do not affect the character of the imported product” (p. 395) – tuna fishing is a PPM that does not alter the imported product, the tuna. The judgement outraged animal welfare advocates (and environmentalists) and to a large extent soured them on the WTO. Protesters dressed as dolphins became a regular feature of anti-WTO protests. It should be noted, however, that the WTO has no legislative function and only administers what the member states have already agreed to, including the adjudication by dispute panels.

A second Tuna-Dolphin dispute was also brought by the European Union against the USA because the MMPA also authorized a ban on tuna products imported from countries that source their tuna from a country covered by the primary embargo – because the EU imported tuna from Mexico which was embargoed. The panel ruled, among other things, that the exceptions in Articles XX (b) and (g) could not apply to environmental measures whose impact was achieved by forcing a member state to change its policies (Isaac et al. 2002). Again, the ruling was widely condemned by environmental and animal welfare nongovernmental organizations (NGOs). According to Isaac et al. (2002): “The decision of the panels in the Tuna-Dolphin disputes raised serious questions as to the ability of states to further environmental objectives by the use of trade-related measures” (p. 85). As environmental issues are often comingled with animal welfare issues, the same conclusion can be made.

Following the Tuna-Dolphin cases, a further issue where animal welfare concerns were comingled with environmental concerns was brought to the dispute settlement system – what is known as the Shrimp-Turtle dispute. Formally,

the issue was dealt with as an environmental issue rather than an ethical issue pertaining to animal welfare. Sea turtles are considered highly endangered under the CITES. The most significant threat to the species arises from incidental capture and drowning caused by shrimp harvesting operations. In response to domestic pressure from animal welfare and environmental groups, in 1989, the USA mandated that all shrimp trawlers fishing in waters likely to contain sea turtles, no matter what their country of origin, be equipped with Turtle Excluder Devices (TEDs) (Isaac et al. 2002). Contained in the legislation was the requirement that the importation of shrimp or shrimp products be prohibited if harvested using a fishing technology that could have a deleterious impact on the sea turtle population.

In response, India, Malaysia, Pakistan, and Thailand requested a WTO panel to determine if the US measures violated the rules. The USA countered that the measures should be allowed under Article XX (b) and (g) exceptions. The dispute went through a long process of panel deliberations and appeals (Isaac et al. 2002). Initially, the panel ruled against the USA, and as a result, protesters dressed as turtles joined those dressed as dolphins as a feature of anti-WTO protests. In an appeal judgement, however, the US measure was accepted in principle as being eligible for Article XX exceptions, but the way the USA had implemented its measure was not consistent with WTO obligations (Isaac et al. 2002). This was judged to be a major victory by legal scholars interested in environmental issues.

The threat of imposing trade sanctions has been used to good effect in other cases where ethical animal welfare issues and environmental issues are comingled. The mere threat of trade sanctions cannot be taken to a WTO dispute panel. One example of the effective use of the threat of trade sanctions has been in the regulation of fishing and, in particular, whaling in international waters. Domestic legislation in the USA – a number of laws grouped around what is known as the Pelly Amendment (Gordon et al. 2001) – gives the US President the discretion to impose trade sanctions on imports of fish

from countries not complying with the conservation and management standards embedded in a number of US laws. The USA first used the Pelly Amendment to threaten Denmark, Norway, and West Germany over those countries' continued fishing of Atlantic salmon. The threat was effective and led to an agreement in 1976 to end the high seas fishing of Atlantic salmon (Gordon et al. 2001). The Pelly Amendment's ability to threaten trade sanctions has also been used with great effect, and repeatedly, to bring countries into compliance with the International Whaling Commission's (IWC) restrictions or bans on whaling – either by inducing countries to join the IWC or by complying with its ban on whaling. Gordon et al. (2001) report that, at various times, Japan, the Soviet Union, Chile, Peru, South Korea, Spain, and Taiwan were induced to alter their practices when threatened with trade sanctions on their fish shipments to the USA. Other countries, however, weighed up the cost of potential sanctions and chose not to alter their practices.

Strategic Use of Trade Barriers and Trade Sanctions

Unless a trade partner objects by asking for a dispute panel, a country can impose trade bans or other trade restriction for animal welfare reasons. One example is the EU ban on imports of seal products. In September 2009, the European Union announced a virtual ban (with a few exceptions) on the import of seal products. Canada is the world's major producer of seal products. Canada (and Norway) first sought consultations with the EU through the WTO; when those failed, they asked for a formal dispute settlement panel. They had the option of not seeking a dispute panel and accepting the ban. The decision to initiate a dispute is a complex calculation. Formal dispute settlement is expensive and time consuming. Further, even if the EU were to lose the case, it could choose not to comply with the WTO ruling – as the EU did in the case of its ban on imports of beef produced using growth hormones (Kerr and Hobbs 2005). Of course,

noncompliance can lead to retaliation being authorized, but the extent of the retaliation is limited to the value of trade lost. The EU may have done a calculation that can easily absorb the cost of retaliation in the case of seal products. Canada and Norway can also do the calculation. In that vein, it is interesting to note that Namibia, another seal product producer, did not join the dispute, choosing instead to accept the economic cost of the ban. While the dispute is going forward at the time of writing, this was not a forgone conclusion at the time the ban was imposed. In any case, the economic impact of the ban for Canada and Norway will continue at least over the period when the dispute is being heard. This is the first time a dispute panel has been asked to decide directly on the legitimacy of a trade barrier imposed for ethical animal welfare reasons.

Multilateral Cooperation

Disputes are an inefficient and not particularly efficacious means of altering public policy. A better mechanism is to obtain multilateral agreement on appropriate public policy. One example where this has been accomplished in the case of ethical animal welfare concerns (although again comingled with environmentally based conservation concerns) is the CITES. In the CITES, countries have come together to, among other things, establish rules of trade that support the objective of preserving endangered species. The CITES trade provisions may, in fact, not be compliant with some WTO provisions, but due to widespread acceptance of the CITES, there has been no WTO challenge, nor is there likely to be one (Isaac et al. 2002).

Summary

The multilateral system for international trade as embodied in the WTO, as yet, takes no direct account of ethical animal welfare concerns in its rule-making or jurisprudence. Some preferential trade agreements – such as the EU – have included animal welfare provisions. Animal

welfare issues are often comingled with environmentally based animal conservation measures, and a number of clarifications regarding the legitimacy of trade measures have been sought through the WTO dispute settlement system. The results have often disappointed those advocating the use of trade restricting measures to encourage stricter animal welfare standards. Countries have, however, at times, used trade measures to advance animal welfare objectives. The CITES is an example of multilateral cooperation in establishing trade policy to achieve ethical objectives outside the WTO.

Cross-References

- ▶ [Animal Welfare: A Critical Examination of the Concept](#)
- ▶ [Food and Agricultural Trade and National Sovereignty](#)
- ▶ [Food Labeling](#)
- ▶ [Free Trade and Protectionism in Food and Agriculture](#)
- ▶ [Multilateral Trade Organizations, Food, and Agriculture](#)

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safe and nutritious food is a human right seeing organic production as a viable means to achieve this right (Altieri 2009). Attributes such as healthiness and sustainability are invisible to consumers of organic products. Organic foods are differentiated from conventional alternatives because they are produced through different processes (characterized by crop rotation, absence of synthetic fertilizers, and biological control of pests rather than chemical treatments) as opposed to having different physical attributes. In the absence of information that reliably communicates these desirable characteristics, organic foods can only compete on price, and as they are usually more expensive to produce, there will be little incentive for markets to form. Setting up standards and a system to label or certify organic foods can help consumers in making an informed choice. Since countries may differ in how they define standards and certify organic foods, there is a potential for trade conflicts.

Trade Policies and Organic Food

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Synonyms

GMO-free; Hormone-free; Natural food; Organic agriculture

Introduction

Organic foods are produced using farming methods that may be less harmful to the environment while also leading to foods that are better for human health. Many environmental ethicists who believe that there is a moral obligation to protect the environment may view organic food as more sustainable and thus ethically superior to conventional food (Scialabba 2007; Byerlee and Alex 2005). Some scholars believe that access to

Organic Food Standards

Organic food standards determine which products can legally be labeled as organic. According to the International Federation of Organic Agricultural Movements (IFOAM), the market for organic food is confronted with hundreds of national government and private standards, as well as a number of global certification and accreditation systems. Examples include the US National Organic Program (USNOP) and the part of the Japanese Agricultural Standard (JAS) pertaining to organic agricultural products. Global standards include IFOAM standards, the Codex Alimentarius Commission guidelines maintained by the Food and Agriculture Organization (FAO) of the United Nations, and at a regional level, the European Economic Community's (EEC) Council Regulation 2092/91 (Schmid et al. 2007). Some of the private standards include BIO AUSTRIA, Bio Suisse (Switzerland), Naturland (Germany), and the Soil Association (UK) (Setboonsang 2008). The EEC guidelines are considered the minimum standards with which all EU member states have

to comply. If required, any state can have a national or private standard with more detailed requirements, depending on local or regional concerns (Schmid et al. 2007).

Heterogeneity and Trade Conflicts

A detailed review of the differences between the EEC and selected national and international organic standards is reported in an article by Schmid et al. (2007). National standards from 16 European countries, and the United States, and international standards – IFOAM Basic Standards, Codex guidelines – were compared with those of the EEC. The standards differed in terms of their organic labeling schemes, recommended crop and livestock production methods, processing techniques required for organic produce, and environmental protection provisions.

There are differences in the way the US certification system and the EEC regulations handle the question of whether a food can be labeled organic if it is made from less than 100 % organic ingredients. The EEC regulations apply to livestock feed, while the Codex does not include provisions for organic feed (Schmid et al. 2007).

Standards related to organic crop and livestock production (such as the use of fertilizers, manures, crop rotations, and animal stocking densities) also vary to a considerable extent. For instance, though most of the EU member states require that seeds and vegetative propagation materials be of organic origin, they differ in the way seeds from conventional sources are allowed when organic seeds are not available. A study by Thommen and Schmid (2006) shows that the areas cultivated with nonorganic cereal seeds were much higher in Belgium, Italy, and Spain compared to other member states because they had different criteria for accepting the use of nonorganic seeds. Because organic seeds are more expensive, these countries may have had a competitive advantage as a result of these differences. EU regulations include limitations on the use of livestock manure (170 kg of nitrogen from manure per ha/year of agricultural area used) and the export of surplus manure, while Codex and USNOP do not set any limitations for nitrogen use. Some private standards such as

Naturland (Germany) and Bioland (Germany) have even tighter regulations allowing only 112 kg N/ha. Such differences can lead to trade distortions by lowering costs for firms in countries that have set looser restrictions on manure use. Schmid et al. (2007) note that several countries have more detailed requirements for crop rotations and tighter restrictions on fertilizer use.

Regulations on pesticide contamination and contact with genetically modified organisms (GMOs) also vary between countries. To prevent cross fertilization between organic and GMO crops such preventive measures as windbreaks or buffer zones may be required. For instance, USNOP requires buffer zones to prevent contamination from conventional farms, but the EU does not have such provisions. Countries in which such measures are not required will have a cost advantage relative to those in which they are required. Five private standards allow greenhouse production but with limits on the use of artificial light and heating systems to reduce the consumption of nonrenewable resources. Such restrictions could represent a particular burden on producers of organic products in the colder, northern European countries compared to the costs in the central and southern Europe.

Although the global organic market size has increased threefold since 2000 (Willer and Kilcher 2012), most of the food produced and consumed around the world comes from conventional agricultural systems. Alroe et al. point to negative externalities such as soil and water degradation and the loss of biodiversity that may arise from both conventional and organic food systems. Organic standards may require attention to some of the negative effects, but in many cases, they do not include restrictions related to critical aspects of soil, water, and biodiversity conservation (Alroe et al. 2006).

Harmonization and Equivalency

Although there are both national and international organic standards, there is no clear mechanism for resolving trade disputes that might arise from different organic standards. The WTO does not have specific provisions on organic food standards (Daugbjerg 2012). Trade conflicts due to

differences in standards can give rise, however, to cases that could lead to complaints under the WTO technical barriers to trade (TBT) provision. For example, some delegations to the WTO expressed concern about a draft organic certification procedure under discussion in Korea requiring that organic foods be certified by Korean authorities or by agencies approved by the Korean government (WTO 2012). Several delegates objected that the draft provisions did not include ways to establish equivalency with standards in other countries, and in the absence of a means to establish that other standards are equivalent to those in Korea, the Korean standards would be inconsistent with Korea's WTO obligations under the TBT agreement.

As the Korean example shows, the standard procedure for international trade in organic food involves agreements between nations that their standards are substantially equivalent. Such agreements allow foods certified as organic in one jurisdiction to be sold as organic in another. An alternative to equivalency agreements would be complete harmonization of organic standards so that a single set of standards could be applied worldwide (Schmid et al. 2007). Because of the difficulty of reaching agreement on a single set of standards and the lack of an international enforcement body, equivalency agreements have been the most practical approach to reconciling different organic standards so that organic products can be traded.

The equivalency agreement between the United States and the EU offers a good example of how such agreements are structured. This agreement, the "Organic Equivalence Cooperation Agreement" adopted on February 15, 2012, specifies that standards in the US National Organic Program (USNOP) will be considered as equivalent to the EU Organic Program, thereby allowing organic goods certified by the appropriate authorities in each country or region to be marketed as organic in the other (Bendz et al. 2012). Traded organic products must have an "organic export certificate" showing the location from which they come and the agency providing the certification as well as assurances that all relevant standards have been met. The

information provided with these products insures that consumers can be confident that the organic foods being purchased are, in fact, produced and handled using recognized organic methods.

The agreement includes specific requirements regarding the origin of the products. Organic products certified in the EU and the United States but not produced, processed, or packaged in these countries cannot be exported under this agreement. For example, Ecuadorian bananas certified under EU regulations cannot be directly exported from Ecuador to the United States. The agreement is to be reassessed after three years with a view toward achieving greater harmonization of the two sets of standards (Bendz et al. 2012). Some of the areas for future discussion include differing requirements for veterinary treatments and handling of manure and fertilizer.

Ethical Issues in the Trade of Organic Foods

So far, trade in organic foods does not appear to raise a lot of ethical issues. Equivalency agreements allow trade in organic foods which, in turn, means that over time organic production and consumption is likely to grow. Because organic production is generally thought to be less harmful to the environment than conventional production, this evolution can be seen as positive. For some, organic food embodies certain ethical characteristics. For example, IFOAM identifies four ethical principles that define organic agriculture:

The principle of health – organic agriculture should sustain and enhance the health of the soil, plants, animals, and humans as one and indivisible.

The principle of ecology – organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

The principle of fairness – organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

The principle of care – organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Differences in national organic standards may reflect the fact that countries place different weights on the various principles identified by

IFOAM (IFOAM 2006). For example, organic standards on antibiotic use in the EU and in the United States may differ because of national variation in attitudes toward animal rights. According to Zanolì (2004), consumers in the EU are concerned not only about the overuse of antibiotics in animals (for them lower antibiotics use implies healthier food products) but also about the welfare of the animals themselves. EU consumers are more likely to feel that the principles of care and fairness should be extended to animals than consumers in the United States. These value differences may be obscured by equivalency agreements that require all certified foods to be treated as if they met local standards.

Some might suggest that organic food is problematic. If resources are directed away from conventional food for use in organic production and if the amount of food that can be produced from a unit of productive resources is less with organic than conventional, expansion of organic may not be a good thing. Organic production is currently pretty small relative to conventional food output, and it seems unlikely that organic will ever replace more conventional production methods. If expanded organic production were to lead to food shortages, prices would increase providing an incentive for producers to switch back to conventional methods to increase output. Short of some kind of absolute authority that could override market forces and make organic mandatory, it is unlikely that there would be a big problem of this nature.

products (Oliver 2006). Organic food shortages in developed countries represent opportunities for developing countries to produce and export organic products. Because much agricultural production in developing countries is done with few or no chemical inputs, it may be easier for growers in these areas to switch to completely organic production. To gain access to export markets, however, producers in the developing countries must abide by the international standards and foreign organic certification systems, and compliance with these standards may be costly (Barrett et al. 2002). Setboonsarng (2008) examines the role in developing countries of the IFOAM international standards and some national and private organic standards. He claims that clear organic standards and certification systems may allow producers in developing countries to market organic food in high-income countries, potentially avoiding extensive use of chemical and energy inputs. The expansion of organic production in developing countries could have beneficial effects on the environment while at the same time raising their incomes. Both of these developments are consistent with environmental and development ethics. A joint project known as Global Organic Market Access (GOMA 2012) has been undertaken by the IFOAM, the FAO, and the United Nations Committee on Trade and Development (UNCTAD). A regional subgroup of GOMA is attempting to establish common organic standards among Asian countries.

Trade Implications for Developing Countries

Though Europe and the United States account for around 90 % of the global sales of organically certified products, the domestic supply of organic products in these countries has been unable to keep pace with the growing market demand (Barrett et al. 2002; Dimitri and Oberholtzer 2009). For instance, in the United States, inadequate availability of inputs for organic dairy and livestock production is an important reason for retail shortages in organic dairy and meat

Summary

Organic food standards are necessary for markets for these products to develop. Without standards, consumers cannot be certain that the foods being purchased really are organic with all the ethical attributes they associate with these products. This is true for both domestic and international markets. Conflicting national standards could impede international trade slowing the growth of organic production and consumption. Because organic food is less harmful to the environment and may have desirable attributes

for consumers (e.g., health and taste), mechanisms to coordinate organic certification across international markets are beneficial. The WTO does not have special provisions on organic food standards, but countries are expected to recognize certification equivalency, and these expectations are backed up by the WTO's TBT regulations. Recently the EU and the United States have agreed to recognize each other's standards as substantially equivalent, thereby allowing US certified organic food to be sold in the EU as "organic." Both have agreed to forge a common understanding on various environmental and animal welfare issues important to achieve harmony and facilitate trade. Compliance with international organic food standards and certification systems, though costly, may be beneficial in the long run for developing countries which may have certain advantages in organic agricultural production with positive consequences for both the environment and development in low-income countries.

Cross-References

- ▶ [Canada, US-EU Beef Hormone Dispute](#)
- ▶ [Environmental Ethics](#)
- ▶ [Environmental Justice and Food](#)
- ▶ [Food Ethics and Policies](#)
- ▶ [Food Labeling](#)
- ▶ [International Food Quality Standards](#)
- ▶ [Trade Policies and Animal welfare](#)

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Transgenic Crops

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Synonyms

Genetically engineered crops; Genetically modified crops; Transgenic seeds

Introduction

Since transgenic crops first took root, they have been embroiled in numerous controversies from questions about their safety to the future of the food system. Today, transgenic crops make up a considerable portion of the planted areas of crops such as soy, corn, cotton, and canola, but find very little adoption in other sectors. Farmer adoption of transgenic soy happened so quickly that by some measures it is often described as the most rapidly adopted agricultural technology in human history. While some agricultural sectors have benefited from transgenic crop adoption, they remain much maligned in wider discussions about agricultural sustainability. Before describing these apprehensions toward transgenic crops, this section describes what transgenic crops are and how they are made.

The term transgenic is used as an adjective to describe an organism where genes have been moved from one place to another in its genome or from one species' genome to another. The etymology of "trans-" is believed to be Latin for the phrase "to cross." Sometimes transgenic organisms are referred to as genetically modified (GM) or genetically engineered (GE); GM organisms (GMOs) are probably the most colloquial in use, although GE organisms (GEOs) are also commonly used. Some analysts and activists restrict the term transgenic to instances where genes are moved across species barriers, but by and large it is agreed that the movement of genes within the same species should also be considered

transgenic. The developments that make transgenesis or genetic engineering possible come with the tools of recombinant DNA technology, which have allowed scientists and genetic engineers to move genes around at a scale not possible with conventional breeding. Often it is the use of these recombinant DNA techniques that determine whether or not an organism deserves the transgenic label.

Genetic engineering introduces foreign DNA into the host organism (or moves it within an organism) in several different ways. This transgenesis is referred to as an event. The most common way is to introduce the DNA with a viral or bacterium invasion into the host's nucleus. This virus or bacteria is commonly described as the promoter sequence. Transferring genes using a bacterium involves combining the desired gene with a plasmid, which is then carried by an agrobacterium, most commonly *Agrobacterium tumefaciens*. The agrobacterium moves through the cell wall, depositing the desired gene in the host organism. After gene transfer, both the promoter and the desired gene remain in the plasmid. These plasmids are then cultured in a petri dish and in the case of plants moved to a greenhouse where it is determined whether or not the desired gene is expressed in the plant's phenotype. This is often done with a marker gene that is attached to the promoter, which when expressed makes it easy to identify which plants contain the desired gene. The most widespread marker genes are those for antibiotic resistance. When applied, the antibiotics kill any cells without the new genes, leaving behind only cells that have taken up the marker gene and promoter. The use of antibiotic resistance genes has raised many food safety concerns about foods made from transgenic plants because it is unclear whether or not the antibiotic resistance affects human health or promotes resistance in the wider human and animal populations. Alternative marker genes include traits of phosphorescence from jellyfish, where the desired trait can be ascertained from the organism's exposure to a black light.

Other means of making transgenic plants use non-viral promoters. The particle gun or "gene gun" technique uses gold- or tungsten-covered

pellets coated with bits of DNA that penetrate the cell wall and randomly insert themselves into the host's DNA. Electricity can also be used to create momentary holes in the cell wall, which allow promoters and markers to be delivered to the nucleus.

This essay will describe ethical issues derived from the interplay between science and politics of transgenic crops. With transgenic crops comes a new technology that allows an unprecedented pool of genes for plant breeders to work with. But at the same time the technology raises a host of ethical questions about property rights, ecological viability, and the role of public sector plant breeding research. The first section explains the emergence of transgenic plants out of the labs and into the fields as well as the scientific controversy to understanding their early evolution. The second section introduces the views taken by bio-safety ecologists about their potential risks to the environment. The third section summarizes a few of the social implications from transgenic plants. The final section describes the current extent of transgenic crop deployment today as well as future deployment scenarios.

The Evolution of Transgenic Crops

The first product of recombinant DNA technology destined for open-air use and to receive considerable public attention was the deliberate release of the "ice minus" bacterium (*Pseudomonas syringae*) developed by University of California plant pathologist Stephen Lindow (Krimsky and Plough 1988). The goal of the project was to spray potatoes near Tule Lake in Northern California with an "ice-nucleation active" bacterium to inhibit the formation of frost on the plants, which could have important implications for staving off early season frosts, with potentially tremendous saving to growers. While not a transgenic crop per se, the treatment of the ice minus bacteria by regulatory officials would become the basis for future field trials of transgenic crops, which would dominate the deployment of GEOs over the following two decades. Concerns about the unintentional escape

of the ice minus GEO included its impact on ecosystems adjacent to the fields where it was introduced, as well as possible implications on global weather patterns. This aroused local reactions in the San Francisco Bay Area cities of San Francisco, Berkeley, and Oakland, which included moratoria and outright bans on outdoor experiments.

The National Institute of Health (NIH) Recombinant Advisory Committee eventually approved field trials of the ice minus bacteria. Activist Jeremy Rifkin of the Foundation on Economic Trends obtained a court injunction to stop the release, arguing before the court that the experiment posed an environmental hazard and that there were no adequate containment protocols in place. Rifkin argued that the NIH was required to conduct an Environmental Impact Assessment under the National Environmental Policy Act to evaluate environmental impacts because a federal agency was making a decision that could impair the environment.

The fallout from the controversy led to a new round of discussions about how GEOs should be regulated, ultimately leading to a decision by Congress in 1985 to regulate them through the existing regulatory system. Under what is known as the "Coordinated Framework," the Food and Drug Administration (FDA) evaluates food safety concerns; the Environmental Protection Agency (EPA) oversees concerns about toxicity from mobile plant tissues like pollen and root exudates, as well as issues related to insect resistance to plant incorporated pesticides; and the Department of Agriculture's Animal and Plant Health Inspection Service oversees problems related to increased weediness and biological invasion. At the time, many activists and ecologists simply saw the Coordinated Framework as an effort to manage GEO introduction instead of regulate it.

Ecological Risks from Transgenic Crops

Genetically engineered organisms in general, and transgenic crops in particular, have always raised questions about how they will impact ecological

processes both within and outside farmer fields since the first plans to release them in the early 1980s (Altieri 2000). The Ecological Society of America (ESA), a professional society of ecologists, released a statement noting the potential ecological and environmental hazards associated with introducing GEOs into the environment in 1985. They noted that the products of genetic engineering and recombinant DNA technologies posed no new classes of ecological hazards. But the novelty of the new technology warranted regulatory oversight, because there is the potential for more extreme and uncertain ecological hazards. The ESA scientists that signed onto that statement strongly advocated a robust system of containment to prevent escape of the transgenes into the environment. For plants this meant controlling seed dispersal and possibilities for inadvertent cross-pollination. They also argued for early ecological risk assessments of GEOs to ensure they did not pose significant impacts to native flora and fauna before release. However, early planning for ecological risk assessments faces considerable challenges given the importance of trade secrets in the development of commercial transgenic crops.

Ecologists' opinions on the risks from GEOs vary widely. Some suggest that some organisms pose threats to the environment, while others argue that GEOs will suffer greater fitness consequences from having their phenotypic expression altered in ways that make them more dependent on human intervention to reproduce in areas outside agricultural production. More holistic frameworks urge an approach to evaluating the risks of biotechnology recognizing that uncertainty, complexity, and incomplete knowledge must factor into any regulatory approach including post-release monitoring to more comprehensive ecological risk assessments.

Loss of Plant Genetic Diversity

One important impact from transgenic crops is the loss of genetic diversity through gene flow – the transfer of genes from population to another (Letourneau and Burrows 2002). Gene flow may have consequences to genetic diversity through outbreeding depression or genetic swamping

where there are sexually compatible wild relatives near or in farm fields where transgenic crops are planted. In outbreeding depression, the fitness of the offspring is lower than the originating plants. In the long run these plants will not be successful competitors and risk extinction or extirpation. Outbreeding depression would occur if short-term fitness advantages favor the increased presence of the transgene in the population but with long-term fitness consequences over time (e.g., reduced fecundity, increased disease susceptibility). Genetic swamping occurs when there is a high ratio of transgenic plants to the wild relative. In effect the wild relative is swamped with genes from the transgenic crop field, compared to other wild relatives. Genetic swamping would most likely occur where the receiving plants are relatively rare and exposed to high rates of hybridization. Both of these phenomena occur with conventionally bred crops, but risks may be heightened with transgenic crops.

Areas most susceptible to concerns about loss of genetic diversity are in the Vavilov centers of genetic diversity and crop domestication (Fowler and Mooney 1990). These centers serve as sources for genes used in breeding programs and at times throughout recent history have been critical to efforts to combat disease in conventional crops with the corn blight of the early 1970s being a prime example. After the blight wiped out significant portions of successive corn crops, researchers returned to Mexico, an important site of corn domestication, where they were able to find genes for resistance to the disease in the wild relative *teosinte*. The loss of crop genetic diversity is often raised in the controversy over transgenic maize in Mexico, where both small farmers and international research institutions depend upon the diversity of wild relatives and landraces for plant breeding.

In 2001, a University of California at Berkeley professor and his graduate student tested maize landraces grown in Oaxaca, Mexico, the center of crop diversity for maize, and found the presence of patented transgenes despite a moratorium on transgenic maize (Quist and Chapela 2001). Their study found not only the presence of

transgenes in maize landraces but also suggested that the transgenes inherited did not exhibit the stability ensured by the crop's developers and patent holders. Their initial findings were published in a brief article in the journal *Nature*. Shortly after publication, the journal came under fire from the scientific community, particularly those supportive of the life sciences industry and from within the discipline of molecular biology. *Nature* retracted the article, questioning the researchers' methodology and interpretation of evidence. When data were subsequently submitted supporting the findings, *Nature* refused to publish them, to retract the retraction, or to provide a forum to pursue earlier editorial commentary.

Despite concerns that transgenic crops may pose threats to plant genetic diversity, the *Nature* controversy continues to be framed as one of academic practice and integrity. The point that transgenic traits were found in Mexican maize landraces, a Vavilov Center of crop-wild diversity, seems to be lost in the debate. Opponents were noticeably silent about the permeability of the food and seed systems in response to questions from NGOs, indigenous groups, and ecologists about the adequacy of regulatory institutions to control the deliberate introduction of transgenic crops in areas of critical plant genetic diversity.

Herbicide Resistance, Increased Weediness, and Superweeds

Another ecological risk from transgenic crops comes from the use of traits for herbicide tolerance. These traits are attractive to farmers because instead of costly weeding techniques, growers can spray herbicides after their crop has emerged from the seed. Without genes for herbicide tolerance, this would damage the crop. But herbicide-tolerant crops will not die when exposed to the herbicides. The use of herbicides this way has increased the amount of no-till weed control in crops such as soy.

However, widespread use of herbicide-tolerant crops such as RoundUp Ready™ and Liberty Link® varieties could lead to the rapid evolution of resistance to herbicides like

glyphosate and glufosinate in weeds, either as a result of increased exposure to the herbicide which would select for tolerance over time or as a result of the horizontal transfer of the trait to weedy relatives of crops (National Research Council 2002). These have become known as superweeds in the public discourse on the topic. Eventually herbicide-tolerant crops could change the mix of herbicides applied as some become ineffective due to overuse, which could result in greater levels of overall environmental harm. Since herbicides differ in acute toxicity and persistence, loss of some herbicides may be detrimental to the environment overall. Moreover, the herbicide RoundUp is used in some ecological restoration sites, so increased weed resistance could force restoration managers to use more toxic herbicides.

Insect Resistance

The introduction of transgenic crops also raises concerns about insect resistance. The naturally occurring microorganism *Bacillus thuringiensis* (*Bt*) has been used as a pesticide for several decades. When ingested by many species of Lepidoptera, and some Coleoptera, it crystallizes and blocks the passage of food into the stomach, effectively killing them. Its rapid degradation when exposed to UV light keeps it outside of the EPA's oversight allowing it to be widely used in powdered form by organic farmers. However, many studies have shown that *Bt* resistance can evolve rapidly in agroecosystems (National Research Council 2002). Incorporating the genes that produce the *Bt* endotoxin into plants and subsequently planting them on such a large-scale could, unless properly managed, hasten the evolution of resistance, with implications for both organic and conventional farmers.

Currently, industry uses a high-dose refuge model to suppress the evolution of resistance in Lepidoptera. They argue that the high dose of *Bt* will kill most of the pests and that the alleles that develop resistance will be "diluted" by the presence of a non-*Bt* refuge harboring *Bt*-susceptible Lepidoptera (Alstad and Andow 1995). However, this argument rests on two assumptions. The first is that *Bt* resistance is a recessive trait; the second

is that farmers actually plant the refuge. On the latter point, it is worth noting that the responsibility for employing the high-dose refuge model is shifted from the seed developer to the farmer in the technology use agreements often required to buy transgenic seed.

Changes to Chemical Use Regimes and Impacts to Biodiversity

The impacts of transgenic crops on biodiversity from changes in farming practices may be to the detriment of the biodiversity near and in farms. In October 2003, the Royal Society of the UK published its findings from farm-scale evaluations (Andow 2003). Two out of the three crops studied demonstrated an association between transgenic crops and practices harmful to wildlife as well as a tendency to decrease biodiversity. The report attributed the impacts to changing in spray regimes of herbicides, finding that wildlife adjacent to GE crops was subject to increased exposure to agrochemicals such as atrazine, pointing to a significant difference in agronomic practices associated with GE and conventional varieties.

Impacts to Nontarget Organisms

Nontarget effects of GE crops could threaten both biodiversity and agronomic practices such as integrated pest management. Plants engineered to produce toxins in mobile tissue parts such as pollen pose threats not only to susceptible species that enter into areas where the crop is grown but also to the adjacent field margins where the pollen may drift as in the monarch butterfly controversy. Researchers from Cornell University suggested that *Bt*, *Bacillus thuringiensis*, which drifted onto milkweed growing in adjacent to fields of *Bt* corn, increased the mortality rates of monarch larva (Letourneau and Burrows 2002). At the time, the EPA did not consider nontarget organisms as an area to explore in risk assessment. Further research revealed that the impacts of *Bt* corn on monarch butterflies were affected by the amount of *Bt* expressed in the pollen itself, and industry soon eschewed *Bt* varieties with high levels of *Bt* in corn pollen.

Toxic mobile plant tissues may impact soil biota as well. Shielded from UV rays, *Bt* has

been shown to accumulate in the soil through the root exudates of transgenic plants. The impact of dosing the rhizosphere with the *Bt* endotoxin has not been evaluated for consequences to nontarget soil organisms or to soil health. Beneficial insects used in the biological control of pests are also subject to nontarget effects. One study suggests that the green lacewing, an insect beneficial to farmers because it eats the same pest that *Bt* is used against, suffers greater mortality rates after consuming *Bt*-fed prey (Letourneau and Burrows 2002).

Viral Resistance

Viruses are known to attack some kinds of plants, and transgenic crops are being designed that are resistant to these viruses. Transgenic crops bred for viral resistance have the potential to create new or more virulent viruses through two mechanisms: recombination and transcapsidation. The former can occur between the plant-produced viral genes and closely related genes of incoming viruses; the latter occurs when nucleic acids from one virus are incorporated into the protein structure of plants. Both can result in viruses that infect a wider range of hosts, demonstrate increased virulence, or lead to a biological resistance “arms race.” Furthermore, some viruses play an ecological role in plant community dynamics. For example, barley yellow dwarf virus resistance has been engineered into cultivated oats to prevent yield losses. But this virus also suppresses invasive wild oats. The transfer of viral resistance here may increase the invisibility of wild oats in natural communities as it alters plant competitive interactions (Letourneau and Burrows 2002).

Ecological Risk Assessment and Biosafety Regulation

Biosafety ecologists agree that ecological impacts are greatly unknown (Snow et al. 2004). Ecological risk assessments to date suggest that some organisms pose threats to the environment, while others will suffer greater fitness consequences from having their phenotypic expression altered. A more modest approach to evaluating the risks of biotechnology recognizes

uncertainty, complexity, and incomplete knowledge while emphasizing the precautionary principle from post-release monitoring to designing rigorous ecological risk assessment.

Social Impacts from Transgenic Crops

Activists urge that assessments of transgenic crops be accompanied by analyses of the social consequences of these novel technologies. The history of technology adoption is littered with inequality and disproportionate burdens of impacts. To this end, many activists have been successful in using biosafety as a surrogate for getting at questions about access, control, and development of new technology.

Market Impacts

The most apparent social impact from transgenic crops adoption has been the losses of sales and markets to genetic contamination (Mulvaney et al. 2011). In several cases including the StarLink™ controversy – where unapproved transgenes were found in processed foods – growers were not able to sell their crop because of the presence of transgenic traits. In some instances they also were shut out of future opportunities to sell their crops. In the StarLink example, the USA was immediately blocked from selling corn to Europe, a market they never regained.

Intellectual Property Rights

Patents are the form of intellectual property right invoked to protect the investments in scientific research and technological development made by seed companies to breed and market transgenic plants. Legal battles over patent violations involving Percy Schmeiser, Hugh Bowman, and other farmers against agribusiness giant Monsanto demonstrate how the norms of patent law often conflict with farmer practice. Who owns the crop when patented seed is inadvertently introduced to a field? Should damages be paid if the crop is no longer marketable or seed no longer useable? Some legal scholars contend that common law concepts of nuisance or trespass can be used to settle unintentional movement of

transgenic seed into a farmer's field. Others have argued that if seed is not being used for the trait that is patented, for example, if herbicides are not used on herbicide-tolerant seeds, that use does not constitute a patent violation. In secondary seed markets, where farmers obtain seed from leftover grain, should a patent be recognized as abandoned if seed companies do not set up systems at grain elevators to separate common from patented seed? Or are all users of common grain at risk of patent violations, and should they use the seed admixture? Also related to the issue of protecting patented seed is the use of genetic use restriction technology, colloquially known as terminator gene technology.

Farmworkers and Chemical Use

One important benefit from the use of insect-resistant crops is the possibility that it could reduce farmworker exposures to pesticides. There has been some research that suggests that farmworker poisonings in China's cotton fields were reduced with the adoption of *Bt* cotton. But more longitudinal studies are needed to ensure that short-term chemical reductions are not offset by increased chemical use in the long run if *Bt* cotton becomes ineffective or chemicals are required to eliminate secondary pests.

Privatization of University Research

Perhaps the most significant impact from the development of transgenic crops is the loss of public plant breeding institutions (Busch et al. 1991; Lacy 2000). As the high-tech costs of r-DNA technologies increase the budgetary needs of plant breeders, there are increasingly partnerships between public institutions and private corporations. While many public plant breeding institutions have historically provided seeds to farmers (Kloppenborg 2004), the entry of private companies and the need to develop patents into university research may make such arrangements an anachronism.

The Extent of Transgenic Crops Today and Future Deployments

Today transgenic crops cover approximately 400 million acres as of 2011 according to the annual

numbers posted by the International Service for the Acquisition of Agri-Biotech Applications. The most widespread transgenic crops are engineered for herbicide tolerance and for insect resistance – over 98 % – though other traits are becoming increasingly more common. The most widespread crop types are soy, corn, canola, and cotton. Other crops grown commercially include papaya. Wheat and rice, two of the world's largest crops in terms of global acreage, still remain in research and development as no transgenic seeds of these crops are commercially available as of 2012.

Controversies on the horizon include the development of crops that are resistant to more toxic kinds of agrochemicals such as 2, 4 D. One concern is that weeds may become resistant to the chemicals used on first-generation crops and be replaced by transgenic crops tolerant of more toxic chemicals. Many new transgenic crops are being grown for biofuels particularly for novel algae and cellulosic feedstocks. Many emerging biocatalysts and yeasts are genetically engineered as well. A number of crops designed for industrial traits are also grown as bioplastic feedstocks. The use of pharmaceutical, fuel, and industrial crops will also continue to present challenges to pollen and seed management as these kinds of crops may cross-pollinate with food crops and introduce genes coding for boutique chemicals, posing threats to food safety. For this reason some advocate the ban the production of these chemicals in food crops or crops that can cross-pollinate with food crops.

The global land area dedicated to transgenic crops will continue to grow so long as they do not impact grower sales and if social resistance can be overcome. The challenge for the industry will be to demonstrate that the benefits to growers outweigh any additional seed technology use fees and convince the public of their safety. For scholars looking to understand the implications of transgenic crops on society and the environment, there is now a track record of widespread crop adoption to evaluate. Much of the research to date has been on questions related to r-DNA transfer techniques and productivity of transgenic crops. But there is a growing literature reflecting on the ethical, biosafety, and social implications from transgenic crops that can aid future inquiries.

Summary

This essay explores the evolution of transgenic crops, their ecological risks, and their political economies. The introduction explains what transgenic crops are, how they are made, and how they are regulated. The section on ecological risk explores the various categories of risk that bio-safety scientists and ecologists have identified to be related to the release of transgenic crops into the environment. The final section describes future directions and ethical challenges for transgenic crops.

Cross-References

- ▶ [Biopharming](#)
- ▶ [Biofuels: Ethical Aspects](#)
- ▶ [Cross-Contamination of Crops in Horticulture](#)
- ▶ [EU Regulatory Conflicts over GM Food](#)
- ▶ [Food Labeling](#)
- ▶ [GMO Food Labeling](#)
- ▶ [Herbicide-Resistant Crops](#)
- ▶ [The 2003–2006 WTO GMO Dispute: Implications for the SPS Agreement](#)

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Permaculture

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Synonyms

Alternative agriculture; Bottom-up global food praxis; Holistic food production; Multifunctional farming strategy; Permanent food production

Introduction

Permaculture is a design system where the goal is the generation and maintenance of resilient permanent cultures. These permanent cultures are based upon the sustainable production of permanent food supplies made possible by designing and managing nested systems of flora and fauna. The design aspect of permaculture is based upon insights drawn from holistic ecology, systems thinking, and sustainable agroecology. Permaculture is now a global movement but has its basis in the pioneering work of the Australians Bill Mollison and David Holmgren, who were inspired by agroecological forestry practices of the Southern Hemisphere as well as indigenous farming practices. Mollison explains that permaculture “claims to be designed agriculture, so that the species, composition, array and organization of plants and animals are the central factor” (Mollison 1979).

Permaculture design can be applied to any human habitat, from an apartment to a house, to an office space, to a farm, to a neighborhood street and community, to an entire town or even city. This is because the core features of permaculture design are transferable to any place humans live and work, because all such places are products of human design and intention. The goal of permaculture is to base such design on systems thinking so that the flourishing of human culture and human health can occur. While anthropocentric, the underlying result is that if designed well, then nature also flourishes and is healthy, and the entire interrelated systems that make up permaculture communities are resilient, fecund, and able to generate abundance. At its core, permaculture aims to design efficient, healthy systems of permanent dwelling and habitat, at every scale, from a house to the planetary commons.

Key Permaculture Principles

Holmgren has created a list of 12 goals that guide the design, construction, and active maintenance of a permaculture system. The two key design principles are described here, but all 12 are seen as interrelated. The first principle is the recognition that all systems are nested and interconnected. The permaculture ideal is to design self-generating, closed-loop systems where energy cycles are captured and recycled within the system, leading to overall system

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Urban Agriculture

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Synonyms

Farming in cities; Urban cultivation of food

Introduction

Urban agriculture is defined as the production of food and nonfood items through cultivation of plants, tree crop, aquaculture, and animal husbandry within urban and peri-urban areas. It also involves the processing and distribution of a diversity of foods and nonfood products, using large amounts of human and material resources, products, and services found in and around those areas. City dwellers in developing countries commonly use urban agriculture as a livelihood strategy to generate food and income, while those in developed countries may engage in gardening more for recreation. However, these goals are not mutually exclusive, and people engage in urban agriculture for a wide variety of reasons. No current and reliable estimates of the number of people participating in urban agriculture exist;

however, Smit et al. (1996) roughly estimated the number to be about 800 million. Of these urban farmers, 200 million produce for markets and employ 150 million people.

The history of urban agriculture is the history of both cities and agriculture, which are intimately and intricately tied together. While there is disagreement about whether planned permanent settlements or agriculture came first, the two are mutually co-supportive and interdependent. So urban agriculture has existed throughout the history of cities, towns, and all permanent settlements. Indeed, agriculture is a fundamental component, along with permanent settlements, of civilization. The earliest documented form of urban agriculture is found in Shanghai, China, where productive lands continue to be used for urban gardening to this day (Girardet 2005). Urban residents have also cultivated home gardens for thousands of years. During the Middle Ages, kitchen gardens planted in large estates throughout Europe provided vegetables, fruits, cut flowers, and medicinal herbs to families and their servants (O'Brien 1992). In other areas of the world, entire cities have been constructed to support urban agriculture. For example, Machu Picchu in Peru was built in the sixteenth century with infrastructure such as terraces and irrigation canals, as well as systems for waste management and food storage (Lovell 2010).

Worldwide, urban agriculture continues to evolve to meet the needs of city residents. Increasingly, urban agriculture is seen as a response to rising food prices, urbanization,

and the need to improve the livelihoods of the urban poor. In 2008, the world's urban population outnumbered its rural population for the first time, and by 2030, it is estimated that more than half the world's urban population will live in cities. In most developing countries, more than half the urban population lives below the poverty level of USD 1 per day. To cope with urban poverty, many people turn to farming; as much as 20 % of food throughout the world is produced in urban and peri-urban areas. Studies in nine African cities reveal that on average, 35 % of households engage in some form of agriculture, and by 2020, 35–40 million urban residents of Africa will depend on urban agriculture to feed themselves (Prain et al. 2010; Denninger et al. 1998). In China, where the 14 largest cities produce 85 % or more of their vegetables with urban agriculture, the urban poor earn money by selling surplus produce from their gardens. Similar trends are found throughout South America, such as in Brazil, where more than 45 % of the population is involved in urban agriculture. In many cases, urban vegetable production is more profitable than other available urban jobs.

Urban agriculture in developed countries is increasingly recognized as a valuable urban activity, and many cities are now incorporating urban agriculture into city planning and policies. Montreal, for example, has worked to protect its 95 community gardens and 75 collective gardens from the pressures of urban real estate development, recognizing that these gardens are important for urban food security, the environment, and as a way of bringing diverse communities together. Numerous other cities throughout North America and Europe have adopted similar policies to promote urban gardening. Additionally, urban agriculture has become more prevalent in many developed countries as interest has grown in agricultural sustainability. Urban gardening is now seen as a means of reconnecting people with their food systems. In the Netherlands, programs such as *Gezonde Gronden* (Healthy Soil) have been introduced to educate city dwellers about specific methods of sustainable food production with the goal of enabling residents to grow food in their own town or

region. Similar programs are now found in many major cities in North America and Europe.

Throughout history, communities around the world have created urban agricultural systems that are adapted to the local climate, cultural preferences for crops, and that utilize locally available technologies (Lovell 2010). Urban agricultural systems take many forms, including backyard gardens and farms on vacant public and semipublic land, such as those gardens found under power lines and along road reserves in many developing countries. Other gardens may be found on the grounds of schools, prisons, and other institutions or in densely populated settlements where residents maximize their space by farming in containers such as sacks or old tires or gardening on rooftops. Community gardens have been established in cities worldwide, and the intentional transformation of vacant public lands into community farms is also occurring. Whether as a response to urbanization and economic insecurity or as a means of reconnecting city dwellers with their food systems, urban agriculture has continued to grow and is now valued by many cities as a tool to deal with food insecurity and to manage the urban environment.

There are several important ethical issues arising from or affected by urban agriculture, including livelihood strategies and issues of food security, environmental management practices, climate change, the use and regulation of natural resources, and social and gender issues. This entry examines these issues.

Urban Agriculture for Livelihoods and Food Security

Confronted with poverty, unemployment, and food insecurity, millions of families in developing world cities and towns improve their access to food and raise income through agricultural activities in urban and peri-urban areas. This is now widely accepted as an urban livelihood strategy. Urban agriculture provides benefits to the economy in terms of employment and income, particularly for women and other disadvantaged groups

among the poor. Growing food in cities has some advantages over rural farming, including proximity to markets, low transportation costs, and reduction in postharvest losses because of reduced time between harvest and selling. While food insecurity historically was viewed as a result of inadequate agricultural production and food supply at the regional or national level, Sen (1981) showed that a household's food security status depends on its ability to access food by producing or purchasing it with its own assets. Urban agriculture can be an important part of an urban food security strategy either by providing additional income sources, increasing dietary diversity, or helping protect against seasonal unavailability in the food supply. Surveys conducted in the late 1990s in 24 cities, mainly in Africa and Asia, showed that people in poor households practicing urban agriculture ate more meals and had more balanced diets than other people. Data from Kampala, Uganda, in the 1990s suggest that children in urban farming households were better nourished than those in nonfarming households (Maxwell et al. 1998).

In times of conflict or other unrest, urban agriculture often keeps people fed when food supplies from the countryside are affected. Following the collapse of the socialist bloc in 1989, an economic crisis in Cuba created severe food insecurity throughout the country. As a result, thousands of urban residents began to cultivate urban gardens to provide food for their families. The government provided technical support and training to residents and relaxed laws on the sale of produce in urban areas. Although prior to the economic crisis urban agriculture was considered to be a sign of poverty and underdevelopment, it was quickly acknowledged as a key component of Cuba's national food security strategy (Altieri et al. 1998).

In North America and Europe, urban agriculture has also been used as a means of combating food insecurity. During the World Wars, upwards of 20 million households in England and the United States planted victory gardens to supplement their food supply during times of food scarcity. In the United States, beginning in the 1970s, the federal government and local city councils

began promoting urban community gardens as a way of revitalizing cities and providing food security to city residents who lived in areas with limited access to fresh produce. Much of the interest in urban gardening today centers around making fresh produce available to city dwellers at affordable prices. In the city of Detroit, numerous organizations are working with local citizens to convert vacant plots of land into community gardens and urban farms. Large areas of Detroit are considered to be food deserts, areas with limited access to food, particularly fresh produce. Many of the residents live at or near the official poverty level, so urban agriculture is a way of improving household food security and household nutrition. Other organizations, such as Growing Power in Milwaukee, have worked widely with households and youth groups to promote innovative urban farming methods as a way of providing both food and jobs to urban populations in Milwaukee and Chicago that live within food deserts in these cities.

Role of Urban Agriculture in Environmental Management

In addition to contributing to livelihoods and food security, urban agriculture can also play an important role in the sustainable development of urban environments. Waste management is a major challenge faced by urban areas worldwide. Rapid population growth accompanied by widespread poverty, sociocultural change, and weak, resource-poor local governments has led to inadequate waste disposal systems in developing cities. While governments grapple unsuccessfully with solid and liquid waste management, the urban poor are known to be involved in waste recycling and compost production on a limited scale in many towns. A study of urban food production in Kenya identified the widespread use of organic inputs by urban crop farmers (Lee-Smith and Lamba 1991). About 70 % of the city's solid waste is biodegradable material which, if recovered, could be used either as livestock feed or for compost making. Waste composition affects the amount and quality of compost

that can be produced, and the higher the organic fraction, the better. In Mexico City, a barter market has recently been established where residents of the city can exchange recyclable waste, such as glass and plastic bottles, for tokens that are redeemable for fresh produce grown. This innovative program keeps waste out of local landfills and provides important income to urban farmers.

Wastewater farming is another important way in which urban farmers help recycle urban waste. In recent years, wastewater has gained importance in water-scarce regions like the Middle East and North Africa. Recycling of wastewater for irrigation in urban areas is a long tradition in many countries. In China, Egypt, India, Lebanon, Mexico, Morocco, Peru, and Vietnam, wastewater has been a source of crop nutrients for many decades. Jordan is one of the 10 most water-scarce countries in the world. A 2001 census of Amman found that 40 % of the population used gray water to some extent to irrigate their gardens.

Urban agriculture may also benefit local environments by ameliorating the environment and improving the biodiversity in cities. Urban agriculture, in the form of agroforestry, often provides shade for people and livestock and supplies fruits and nuts. Trees also act as wind-breaks and improve air and water quality, provide places for outdoor leisure, and conserve biodiversity. In some regions of the world, year-round production strategies in urban areas create a steady supply of seeds, which may be shared with rural relatives during the dry season. In many developed countries, the urban environment may actually be more diverse than rural farmland. In Germany and the United Kingdom, urban beehives actually produce more honey than their rural counterparts because the cities contain more trees and flowers than the intensively farmed rural areas (Deelstra and Giradet 2000). City gardens may also improve biodiversity of plants, as well as attracting beneficial soil microorganisms, insects, birds, and other animals.

While farming in cities is beneficial in many ways for urban environments, it is not without hazards. Urban agriculture activities may contaminate local water sources if overly high inputs

of fertilizers and pesticides are used. Neighbors may complain of dust, odors, and noise created by the urban farms. If urban farmers do not manage their farm wastes well, these may clog the storm drains and pile up in the streets, leading to bad sanitary situations. Organic solid wastes that are used in compost production may transmit pathogens or attract disease vectors. Additionally, contamination of soil and irrigation water with heavy metals also poses health risks to many farmers or consumers of food grown in urban areas. Heavy metal consumption can result in long-term diseases, including cancer, neurological disorders, and chronic pain. Unlike most biological pathogens, which result in immediate illness, it can take years for health problems to manifest due to exposure to heavy metals. It is becoming more common in developed countries for urban garden projects to encourage testing of soil for heavy metals. However, this remains an expensive endeavor and is virtually nonexistent for urban agriculture in developing countries.

Urban Agriculture in the Context of Climate Change

Predicted changes in climate, including more intense droughts, flooding, increased frequency of extreme weather events, and higher temperatures within urban heat islands, will require adaptations within urban areas. Thus, urban agriculture has the potential to make cities more resilient to future climatic change and to manage the risk imposed by more extreme weather events and natural disasters. Among city dwellers, the urban poor are particularly vulnerable to the impacts of climate change. Widespread drought or flooding negatively impacts rural agriculture, driving up urban food prices. This is particularly problematic in developing countries where urban residents may spend up to seventy-five percent of their household income on food. Urban agriculture enhances the coping strategies of the urban poor, providing them food and jobs in times of need and creating a social support network among urban farmers. Farming in the city

increases urban green spaces, which improves water infiltration in low-lying areas, which reduces the impact of higher rainfall during extreme weather events. Urban farms planted on hill slopes provide groundcover and may also prevent landslides during heavy rains. Additionally, urban agriculture may provide shade in some areas of the city, reducing the effect of the urban heat island.

In addition to helping urban residents adapt to climate change, urban agriculture can play a positive role in reducing urban energy use and greenhouse gas emissions. Food grown in cities reduces the reliance of urban residents on food imported from rural areas. Urban agriculture produces food in close proximity to consumers, requiring less energy for transportation, storage, and packaging of the food. Urban agriculture often relies on recycled organic waste for fertilizer. By composting and using organic waste for agriculture, this reduces the need for fertilizer and reduces methane gas emissions from the decomposition of organic materials placed in landfills.

In many cases, the benefits of urban agriculture as a means of mitigating climate change are secondary to the main purpose of improving household food security. However, some cities are adopting policies that specifically target urban agriculture to reduce the impacts of climate change. For example, the city of Chicago has adopted policies to promote rooftop gardens. These green roofs insulate a building, reducing energy spent on heating and cooling. They also absorb water during rain events, preventing runoff and erosion into storm sewers. Additionally, green roofs help absorb heat reflected off of concrete, diminishing the urban heat island effect and reducing energy used on artificial cooling systems.

Conflict in Resource Use and Policy Issues Around Urban Agriculture

Acknowledging the many benefits of urban agriculture, it is now actively being incorporated into urban planning in many areas of the world. Globally, cities have begun to adopt official zoning

policies to facilitate the growth of urban agriculture. Specific policies vary widely, but generally, they aim to promote sustainable urban food systems by designating land for community gardens, providing technical support, and fostering economic opportunities for growers. However, despite its long history, the recent interest and explosion of urban agricultural activities have meant that official policy has not kept pace with the growth of urban agricultural activities, sometimes leading to conflicts between farmers, other residents, and city officials. There are various forms of conflict in resource use experienced by urban farmers. One form of conflict is due to different interests in the use of land, such as between urban farms and other types of urban development, including houses, industry, commercial properties, and roads. In many countries, urban farmers lack tenure for the land they farm, instead occupying vacant or unused lands such as open reserves near the side of roads. This places farmers in constant battles with local city authorities, who may harass farmers, vandalize their farms, or demand fines or bribes on a regular basis (Foeken 2006). Other conflicts between urban farmers and residents occur over the keeping of livestock. In North America, increased interest in raising chickens and other small livestock within city limits has forced many cities to rethink zoning laws. While some cities, including New York and Chicago, have opted to allow residents to raise a limited number of animals, opposition from other residents concerned about the noise and smell has kept other cities, like Montreal, from legalizing poultry keeping within city limits.

For many years, urban farming was not included in policy frameworks in cities and towns, but today it is being recognized for its contribution to poverty alleviation, food security, and sustainable urban development. In 2007, the American Planning Association adopted a policy that encourages its members to help build stronger, sustainable, and more reliant local food systems. In Argentina, policy support for urban agriculture appeared as a response to its 2001 economic crisis, while in July 2009, the mayor of San Francisco asked all municipal departments to

conduct an audit of land under their jurisdiction to create an inventory of land suitable for gardening as part of first-ever citywide food policy. A minister's conference on urban agriculture in East and Southern Africa, held in 2003, resulted into the Harare Declaration on urban and peri-urban agriculture, signed by all the participating nations. Kenya is currently developing a national policy on urban agriculture, while its national land policy has a section on urban agriculture and urban forestry. Kampala, the capital city of Uganda, has guidelines and a department of urban agriculture that institutionalizes the practice. Researchers, policy makers, and urban planners have accepted urban forestry management as one important strategy to improving urban living and working environment. In China, for example, research projects and education programs have been initiated to better plan for urban forests.

Social Capital and Gender in Urban Agriculture

Urban agriculture brings city dwellers together and helps generate social interaction. Self-help groups of young people, women, and vulnerable people including the elderly meet as a result of their involvement in urban agriculture, giving them an opportunity to organize and share information and skills and together address their problems. This helps improve well-being while providing a voice that otherwise would not be heard. Together, these groups are able to advocate for technical, financial, or policy issues with both government and nongovernmental organizations. For instance, the Musikavanhu Urban Farmers movement in Harare, Zimbabwe, originally formed in Budiro and Glen View and has now spread to the other low-income suburbs. It started with seven families meeting and agreeing to form a group that would work together and engage in urban farming. Currently, the movement counts more than 5,000 members of which over 90 % are women.

Community garden projects around the world have been shown to foster relationships and create social capital among community members.

A study of the Dig In community gardens in Melbourne found that garden members created social support networks that people turned to in times of crisis and increased social cohesion among the garden members (Kingsley and Townsend 2006). The California Healthy Communities Project runs community gardens in 65 cities throughout California. They also found that these community gardens helped to build the capacity of their communities and were an excellent public demonstration of public health efforts designed to promote community engagement. In Philadelphia, a study of gardeners and non-gardeners found that people who gardened were more active in participating in other community projects. They were also likely to share the produce from their gardens with friends and family members (Blair et al. 1991).

In many cities, the majority of urban agricultural producers are women (on average around 65 %). Urban farming is a viable alternative to wage labor for women who lack access to formal employment due to limited education and training or sociocultural factors limit in their freedom of movement (Hovorka et al. 2009). As a largely informal sector activity, urban agriculture is in many cases especially effective and efficient for married women with children or women heads-of-households because it is often performed close to the home and combines well with their household responsibilities. Urban agriculture can be undertaken with relatively little capital, technology, and inputs. It is thus attainable and affordable for women with limited education and resources and often stimulates the use of indigenous practices. Urban agriculture contributes to empowerment, improved self-esteem, leadership, capacity building, increased independence, and freedom of women. It is important to note that for women, urban agriculture is not an overload of activities but rather a place to build their personal development and their capacity for social interaction and organization and overcome many conditions devaluation, subordination, and exclusion.

Challenges facing women interested or participating in urban agriculture activities are numerous. For example, women face severe constraints in accessing, using, and/or controlling land in

cities compared to their male counterparts. Men tend to have the first choice of any available vacant land, leaving women with low quality or less secure plots of land often located at a considerable distance from home. Even within households with adequate land resources, wives may be constrained in their ability to access these plots given this inequitable access to urban land between themselves and their husbands. A related challenge to land tenure is the distance to agricultural plots whereby women are often left to travel extensive distances to marginal lands, requiring considerable time, physical effort, and financial costs for transportation, if available. Women also face constraints in terms of urban agriculture production itself. Women often lack inputs and working capital, as well as access to knowledge and information on the use of modern inputs and technologies. The latter is partly due to women's limited exposure to commercial urban agriculture or to limited access to training courses offered by institutions or nongovernmental organizations. As such, Alderman et al. (1996) estimated that reducing inequalities in human capital, physical capital, and current inputs between male and female farmers in sub-Saharan Africa could potentially increase agricultural productivity by 10–20 %. For future agricultural research to produce meaningful changes, the needs, preferences, and constraints and differential roles of female farmers and women engaged in agricultural production must be recognized.

Summary

Urban agriculture refers to the production, processing, and distribution of food and nonfood items within urban and peri-urban areas. It is often practiced as a livelihood strategy to generate food and income for poor urban residents, but it is also a form of recreation that connects people to the source of their food. In addition to contributing to livelihoods and food security, urban agriculture has been shown to increase social capital and foster beneficial relationships among community members. It can also play an important role in the sustainable development of urban

environment by aiding in the recycling of solid waste and wastewater, and it may serve to reduce the carbon footprint of urban areas by reducing urban energy use and greenhouse gas emissions. As rural food systems are impacted by climate change, urban agriculture is becoming a coping strategy for the urban poor. Challenges to urban agriculture include inadequate access to land and insecure land tenure, exposure to environmental toxins when farms are located in previously degraded environments, conflicts between different land users, and a lack of policies in cities to help regulate urban agriculture.

Cross-References

- [Cuban Agriculture](#)
- [Climate Change, Ethics, and Food Production](#)
- [Food Deserts](#)
- [Food Security](#)
- [Home Gardening](#)

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V

Vegetarianism

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Synonyms

Ethical vegetarianism; Moral vegetarianism

Introduction

Vegetarianism is the practice of excluding meat from one's diet. Vegetarians avoid consuming any animal flesh, including fish and fowl. Some vegetarians eat eggs and/or dairy. Others, vegans, refrain from eating any animal products and subsist on an entirely plant-based diet, typically consisting of vegetables, fruits, grains, nuts, seeds, and legumes.

Vegetarians can also be distinguished based on their reasons for abstaining from eating meat. Some do so for reasons of personal health. Others avoid meat for economic reasons or because they have an aesthetic dislike of its taste, smell, or appearance or because their religion prohibits its consumption. But still others, "ethical vegetarians," do so for moral reasons. In keeping with the ethical focus of this encyclopedia, the remainder of this essay will

be concerned exclusively with ethical vegetarianism (also called "moral vegetarianism").

While a great variety of arguments in support of ethical vegetarianism have been presented over the years, most of them are based on one or another of three fundamental ethical concerns. One set of arguments contends that the practice of eating meat causes the unnecessary suffering and premature death of animals and that vegetarianism better promotes animal welfare and is more respectful of animal rights. Another set of arguments maintains that meat consumption leads to poor food distribution and exacerbates world hunger, evils that would be greatly ameliorated by the widespread adoption of a vegetarian diet. A final set of arguments seeks to establish that the production of meat, in radical contrast to plant-based agriculture, leads to environmental degradation on a massive scale and is consequently unsustainable.

An Animal Welfare Argument

Perhaps the most influential argument for vegetarianism based on animal welfare considerations rests on the premise that it is wrong to cause pain to a sentient being without having a sufficient justifying reason. The claim is not that causing pain is *always* wrong but rather that it *tends* to be wrong, all else equal, and thus requires adequate justification. While inflicting pain on others can be justified if it is necessary to do so in order to

bring about some important good (as when a surgeon performs a painful procedure in order to restore a patient's health), it cannot be justified if the good to be gained is small, so that it is disproportionate to the amount of suffering it is supposed to justify, or if that good could quite easily be brought about by alternate means that would not involve the infliction of suffering. Still less can the infliction of (disproportionate and/or unnecessary) pain be justified when those who receive it do so involuntarily.

The application of this argument to the issue of vegetarianism is straightforward. On modern factory farms, meat animals are caused involuntarily to suffer terribly. The justifying reason is that people eat the animals, and this benefits human beings both by nourishing them and because of the enjoyment they get from the taste of the animals' flesh. But ethical vegetarians argue that people can nourish themselves every bit as well on a vegetarian diet as they can on a diet that includes meat and, further, that while the restrictions inherent in vegetarianism do entail the elimination of some tastes from one's diet, the vegetable kingdom still provides an almost limitless variety of satisfying and tasty eating experiences. Thus, on this view the justifying reason for the pain visited on animals is reducible to the marginal benefit in taste one can derive from including meat in one's diet as opposed to restricting oneself to plant-based foods. It appears unlikely that such a small benefit could possibly justify such a large-scale infliction of suffering.

In the past, this reasoning was sometimes challenged on the basis of the claim that meat is essential to a healthy human diet and thus that the good to be gained by causing animals to suffer is not a trivial one, but rather the vital value of good health. (George 2000 presents a variation on this argument.) But ethical vegetarians counter that there is now a scholarly consensus, acknowledged even by such mainstream organizations as the US Department of Agriculture and the American Dietetic Association, and that optimum health can be achieved while eating an exclusively plant-based diet. Indeed, the latter organization (which changed its name in 2012 to the

Academy of Nutrition and Dietetics) issued an official position statement on vegetarianism in 2009, in which it concluded that "appropriately planned vegetarian diets, including total vegetarian or vegan diets, are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. Well-planned vegetarian diets are appropriate for individuals during all stages of the life cycle, including pregnancy, lactation, infancy, childhood, and adolescence, and for athletes" (Craig and Mangels 2009, p. 1266j).

Another way to challenge the argument is to assert that animals are significantly less vulnerable to pain than are human beings. But this objection, too, has largely fallen by the wayside. In recent years, scientific support has been steadily growing for the conclusion that mammals and birds experience pain much in the same way that people do. Evidence supporting this conclusion comes from observation of the behavior and physiology of these animals, as well as from evolutionary theory. When animals are cut, burned, subjected to blunt force trauma, or forced to undergo other treatments that might be presumed to be painful, they tend to respond with bodily movements and vocalizations that are similar or identical to those produced by human beings in the same circumstances. These responses are muted or nonexistent when the animals have been treated with a local anesthetic, just as is the case with humans. Moreover, the more our knowledge of the underlying physiology of human pain increases, the more we find analogous anatomical structures (a nervous system and sensory receptors) in animals. Direct manipulation of these structures produces behavior consistent with the hypothesis that the animals feel pain, and neurological investigations suggest that the same parts of the brain are involved in pain processing across species. Finally, evolutionary theory points out the extraordinary usefulness and survival value of a capacity to feel pain. Such a capacity alerts an organism at once if it is being burned or cut and motivates it to remove itself immediately from this threat to its bodily integrity and well-being. This point harmonizes with the more general point that animals

benefit from having a strong and sharp sensory awareness of their (often hostile) environment. Indeed, while humans pride themselves on being more intelligent and rational than are any of the other animals, it is clear that they often lag far behind other species when it comes to the power of their senses. Hawks and many other birds have much better eyesight than humans do. Dogs greatly exceed people when it comes to the sense of smell, as do a great variety of animals with respect to powers of hearing. There is no reason to assume that the capacity to feel pain is the one sensory skill that is more highly developed in humans than in other mammals and birds.

But even if one concedes that animals are capable of great suffering, it hardly follows that the processes by which meat is manufactured actually cause such suffering. And indeed, many people assume that cows, pigs, and chickens lead safe, happy lives on family farms until they are, relatively quickly and painlessly, slaughtered. However, whatever the truth about meat production may have been in the remote past, now the overwhelming majority of meat animals spend their lives on factory farms, where the nature of their treatment is determined by economic considerations, rather than by concern for their welfare. The following is a short, and very far from comprehensive, list of the painful experiences to which meat animals in factory farms are routinely subjected.

- Most male cattle, sheep, and pigs are castrated without anesthesia. Tails of cows and pigs and beaks of chickens, all of which are sensitive body parts, are also removed without anesthesia. The reason for proceeding without anesthesia is not that factory farmers are sadists, but rather that anesthesia is expensive. (This point applies to all of the examples listed here.)
- Male chicks are of no use in egg factories. Consequently, those that are born there are immediately killed. They are thrown into plastic bags and crushed or suffocated or are tossed live into wood chippers.
- Animals are crammed into tiny cages, where they spend their entire lives, often without

enough room to turn around, let alone walk or run. Frequently, there is no (or only inadequate and infrequent) removal of feces, with the result that the animals must continually stand in their own waste.

- Dairy cows are kept in a nearly constant state of pregnancy. The resulting veal calves are removed from their mothers and fed a diet that results in anemia. The dairy cows, which would otherwise have a life expectancy of about 20 years, are fed a special diet that prematurely destroys their health but which, in the short run, maximizes their milk production. After 6 or 7 years of such production, they are slaughtered.
- Nor does the slaughterhouse provide a quick and merciful release from the horrors of the factory farm. In recent years, small slaughterhouses have given way to huge, high-speed facilities, each capable of slaughtering more than a million animals per year. Animals to be slaughtered are hung upside down and brought to the slaughterer on conveyor belts. This process frequently results in a broken leg in the case of heavy animals, such as cows and pigs. The slaughter line does not slow down for these injured animals. The animals' throats are then cut, and they bleed to death. The speed of the operation is such that before they have time to bleed out or even to lose consciousness, many of these animals experience being immersed in scalding water or having their legs cut off and their skin removed. The Federal Humane Slaughter Act requires that animals covered by the act be rendered unconscious prior to having their throat cut. But chickens, turkeys, ducks, and geese are not covered by this act, and in any case it is generally not enforced. So a great number of animals go through the throat-slitting process fully conscious. Often they must stand in line, waiting their turn, as they watch those ahead of them in line being slaughtered. Their reaction suggests that they understand what they are seeing well enough to grasp what is in store for them.

The most widespread and influential of the strategies for criticizing the argument under consideration, however, is simply to deny to animals

a moral status weighty enough to entail that human beings can ever be morally obliged to sacrifice their own interests to those of animals or to abandon traditional and customary practices out of respect for their rights or welfare. Those who take this line generally try to defend it by appealing to ways in which human beings differ from other animals. The usual tactic is to point out that animals, unlike humans, lack rationality (Aristotle 1989; Aquinas 1989), self-consciousness (Kant 1989), linguistic facility (Descartes 1989), the ability to understand the concept of a “right” (Cohen 2001; White 1989), or something else of this sort and then to argue that they therefore lack the very thing that is necessary in order to be the sort of entity that can make serious moral demands on people.

This approach has been subjected to several important objections. One, which has come to be called “the argument from marginal cases,” is based on the observation that many human beings, such as infants and those who suffer from some sort of mental impairment, may also lack whatever characteristic is held to be necessary for inclusion in the group of morally significant beings. Should moral rights to infants and to the mentally enfeebled therefore be denied? One could, of course, get around this problem by setting the bar low enough to allow all human beings in. But that would also let in pigs. One could keep the pigs out by raising the bar, but that would keep many humans out as well. To solve the problem by using inconsistent standards for humans and for animals would be to abandon the claim that one has found a standard that justifies treating the two classes of beings differently.

Critics of ethical vegetarianism have attempted to refute the argument from marginal cases in at least three ways. First is to insist that the features characteristically possessed by members of the group to which an individual belongs are of greater moral relevance than the features possessed by the individual in question, so that all humans get full moral rights by virtue of the skills and attributes of typical members of the species (Cohen 1991). Second is to suggest that we can supplement a high, individually based standard of inclusion into the realm of full moral status with an

appeal to the natural sympathy of human beings for less fortunate members of their own species (Warren 1991; Steinbock 1978). And third is to claim that it is intuitively obvious, or self-evident, that human beings are entitled to vastly greater moral consideration than are any other animals, so that no argument is necessary (Narveson 1987; Coady 1990).

But a different objection to the usual arguments against assigning significant weight to the interests of animals is that there is no obvious reason why rationality, the ability to talk, and other advanced cognitive skills should be granted such extraordinary moral importance. A more plausible candidate for this role is sentience, that is, consciousness and the ability to perceive, feel, and have subjective experiences. Notice that it is difficult to see how one could harm or violate the rights of a being that is not (and never has been and never will be) aware of anything, a being that feels nothing, and a being that has no concern about or interest in what happens to it. So sentience appears to be a necessary condition for moral standing. Conversely, it is not at all difficult to see how one could harm or violate the rights of a sentient being that cannot reason or speak. Torturing it for no good reason would seem to do the trick. Indeed, it is unclear on what grounds one could be justified in disregarding the feelings, interests, and preferences of a being that has them. So sentience appears also to be a sufficient condition for moral standing. This is not to say, of course, that it is never morally justifiable to do something that hurts someone or that goes against someone’s wishes. But it is to say that the fact that an action will hurt some entity that can hurt, or that it will go against the wishes of some entity that has wishes, is a reason of some moral weight to refrain from doing that action. One needs a justification for hurting an entity that can hurt, and it is far from clear that the entity’s lack of some higher cognitive capacity will generally count as such a justification. “Because she can’t talk, it is morally permissible to rip her skin off while she is alive and conscious”; “because he can’t reason, it is OK to castrate him without anesthesia” – these appear to be non sequiturs.

A final objection is that it makes no sense to try to justify unequal treatment of different sentient beings globally, across a wide range of different practices, on the basis of one or a small number of different characteristics that distinguish those beings from one another. The reason is that each such characteristic will be relevant only to a few different kinds of conduct but will be utterly irrelevant to others. The fact that A is a musical virtuoso and B cannot play a musical instrument at all is a good reason to treat A differently from B when both apply for a job with the local symphony, but it does not provide a good reason to treat them differently when they both show up at the hospital suffering from the same illness. Similarly, while the fact that a pig cannot read is an excellent reason not to grant it admission to study at the local university (and thus to treat it differently in this case from the human applicant who reads well), it is far from clear in what way it is relevant to the issue of whether it is morally justifiable to force the pig, unlike the literate human, to submit to the factory farm and slaughterhouse conditions described above.

A World Hunger Argument

Malnutrition is the largest single cause of death for infants and children in developing nations, killing about fourteen million children each year. One argument for vegetarianism is that meat eating contributes substantially to this crisis, because animal agriculture produces food inefficiently. In order to receive just one unit of protein from meat, one has to feed a meat animal roughly 20 units of protein. (The caloric input-to-output ratio is approximately ten to one.) Similarly, it requires 20 times as much land to feed a meat eater as it does to sustain a vegan. If the same amount of grain that is fed to livestock in the United States alone were instead given to human beings, it would provide two loaves of bread per day to every person on the planet. By contrast, raising animals for food consumption requires so many resources that it would be impossible to feed the world on a meat-based diet.

Defenders of meat eating generally concede that meat is an inefficient source of protein and of calories and that a large-scale conversion to vegetarianism would substantially increase the world's food supply. But they often counter that the real problem underlying world hunger is poor distribution, rather than simply a shortage of food. Since the present system, which includes a great deal of meat eating, still generates more than enough food to go around, they argue that a call for vegetarianism is unwarranted. What is needed, instead, is simply better distribution of this already abundant supply.

Ethical vegetarians counter this rebuttal with an argument that meat eating contributes significantly to the food distribution problem. Their argument is that meat agriculture is winning the economic competition for a limited resource, namely, the world's supply of grain fields. Farmers in developing countries can make more money selling meat for export to wealthy nations than they can selling plant-based food locally, to customers who generally cannot afford meat. Thus, millions go hungry while observing that land, right where they live, is used for grazing, rather than for growing grains for human consumption. Where the demand for meat in the wealthy countries disappears, it is likely that some of the farmers in the developing nations would return to the production of plant-based food, which they would have to sell at significantly lower prices, thus facilitating better distribution to impoverished locals.

An Environmentalist Argument

Another argument for vegetarianism is based on the premise that the mass production of meat through modern factory farming methods is environmentally unsustainable. According to a report of the Food and Agricultural Association of the United Nations (2006), the livestock industry contributes on a "massive scale" to air and water pollution, land degradation, climate change, loss of biodiversity, and other forms of environmental degradation. The following is a brief and incomplete bill of particulars:

- Factory farming consumes extraordinary amounts of energy, soil, and water. For example, one needs 2,500 gal of water in order to produce one pound of beef, as opposed to 155 gal to produce the same quantity of wheat. 80 % of the total consumptive use of water in the United States goes to meat production.
- Factory farming leads to the introduction of toxic chemical residues into the food chain and into waterways. Farm animals produce two billion tons of waste each year worldwide, with cattle accounting for one-half of that total. Animal waste, unlike human sewage, is not treated to kill pathogens. The manure, in conjunction with the runoff of water used to clean farm buildings and equipment (plus pesticides and other agricultural chemicals), pollutes waterways, soil, and air. Meat production causes 80 % of all water pollution, with animal dung alone causing twice as much water pollution as all other industrial causes combined.
- Animal waste emits methane, a greenhouse gas, which, in conjunction with the extensive use of fossil fuels in factory farming, leads to ozone depletion and contributes to global warming. Meat production accounts for more of the world's greenhouse gas emissions than does the combined activity of all vehicles of transportation (including all cars, trucks, buses, trains, ships, and planes).
- Factory farming causes topsoil loss from grazing, destruction of habitats of many species of wild animals and plants, deforestation and desertification from the clearing of land for grazing, and the destruction of ecosystems.

Many of these ecological costs of the meat industry are currently being passed on primarily to poor people in developing nations. Others seem destined to burden future generations.

Literature

There is a vast literature on ethical vegetarianism. The following is a brief and highly selective annotated list of some of the most important and influential works.

Before the word “vegetarian” was coined, in 1847, those who refrained from eating meat were frequently called “Pythagoreans,” in reference to Pythagoras, the sixth-century BCE Greek philosopher and mathematician. While none of the writings of Pythagoras have survived, several of his arguments against eating meat are quoted by the Roman poet Ovid in his epic poem *Metamorphoses*, completed in the year 8 CE.

The Greek philosopher Plutarch, in his essay of around 120 CE, “On the Eating of Flesh,” endorses the Pythagorean position and vigorously defends it against criticisms. For example, in response to the argument that eating animals is justified by the fact that animals eat each other, so that in eating them we are only treating them as they treat others, Plutarch points out that “it is certainly not lions and wolves that we eat. . . ; on the contrary, we ignore these and slaughter harmless, tame creatures without stings or teeth to harm us” (Plutarch 1999, p. 28).

The classic book-length ancient essay defending ethical vegetarianism is Greek philosopher Porphyry's *On Abstinence from Animal Food*, which appeared around 268–270 CE.

In 1892, Henry S. Salt published *Animals' Rights*, which influenced Gandhi, George Bernard Shaw, and Tolstoy, among others. Salt is also believed to be the first person to publish an article about animal rights in a philosophy journal (“The Rights of Animals,” published in *Ethics* in 1899).

Rupert H. Wheldon's *No Animal Food*, published in London in 1910, is the first book advocating veganism (though the term would not be coined until 1944).

Ruth Harrison's *Animal Machines*, appearing in 1964, is the first work to expose the horrors of factory farming.

In 1971, Francis Moore Lappé published *Diet for a Small Planet*, a best seller. It was the first major book to argue that feeding grains to animals in order to produce meat is grossly inefficient and leads to global food scarcity. She urges conversion to a plant-based diet as the best way to combat world hunger.

The single most important and influential philosophical work promoting vegetarianism and other significant changes in our treatment of

animals is the Australian philosopher Peter Singer's *Animal Liberation*, published in 1975. Singer defends vegetarianism primarily on the grounds that contemporary methods of meat production produce unnecessary suffering on a massive scale, both to animals and to humans.

Another influential book is philosopher Tom Regan's *The Case for Animal Rights*, which appeared in 1983. Unlike Singer, Regan argues that the exploitation of animals is morally wrong in principle and not merely contingently wrong because of unfavorable consequences.

John Robbins's *Diet for a New America* appeared in 1987. This book argues for vegetarianism based on the harm that meat eating causes on four fronts: animal suffering, world hunger, human health, and the environment.

The Sexual Politics of Meat, by Carol J. Adams, was published in 1990. It is the most important work criticizing meat production and consumption from a feminist standpoint.

Created from Animals: The Moral Implications of Darwinism, by philosopher James Rachels, also appeared in 1990. Rachels points out the ironic fact that many contemporary secularists, who at the theoretical level fully accept the Darwinian view that we are descended from, related to, and only quantitatively different from the rest of the animal kingdom, fail to adjust their moral views and practices accordingly and instead behave as if they accepted literally the book of Genesis's assertion that animals were put on Earth by God for the express purpose of being used by human beings.

John Lawrence Hill's *The Case for Vegetarianism*, a comprehensive treatment of ethical arguments concerning vegetarianism, was published in 1996.

Gail Eisnitz's *Slaughterhouse*, which documents that animals in major American slaughterhouses are skinned and dismembered while still conscious, appeared the following year.

Animal Rights: A Philosophical Defence, by Mark Rowlands, was published in 1998. It defends animal rights from the perspective of John Rawls's famous theory of justice. Rawls suggests that fair social policies will be the ones that we would choose if we had no way of

knowing whether we, due to our particular circumstances, would be favored or disfavored by them. The question he asks is that if we were choosing behind the "veil of ignorance," so that we did not know whether we would be born black or white, male or female, rich or poor, healthy or sick, and so forth, what social policies would we choose? Rowlands extends this approach to the question of our treatment of animals. He argues that if we did not know whether we would be born human or cow or pig or chicken, we would want vegetarianism to be the rule. The possibility of having the benefit of eating meat (if we were lucky enough to be born human) would not be worth the risk of being raised on a factory farm and then slaughtered and eaten (if we were born a cow or pig or chicken). Being a human or a nonhuman animal is not a matter of choice. So we don't deserve to exploit animals, and they do not deserve to be exploited. The current exploitative situation is unjust.

Michael Allen Fox, who had been an ardent critic of philosophical arguments for animal rights, changed his mind completely and published *Deep Vegetarianism* in 1999.

Dominion: The Power of Man, the Suffering of Animals, and the Call to Mercy, by Matthew Scully, appeared in 2002. The book is highly unusual in that, while most animal rights defenders are to be found on the liberal left part of the political spectrum, Scully is a conservative Christian – a former editor of the *National Review* and a former speechwriter for George W. Bush. He argues that the famous "dominion" passages in the book of Genesis do not license contemporary meat eating. Scully reads those passages as saying that we are entitled to use animals only if we need to and then only if we do so in as kind and compassionate a manner as possible. He then argues that, whereas many people in biblical times may have needed to eat animals in order to survive, very few contemporary people are in that situation. With regard to the second provision, he points out that nothing in the Bible anticipates that animals might be treated as they are on modern factory farms.

Food for Thought: The Debate over Eating Meat, edited by Steve F. Sapontzis, was

published in 2004. It is a comprehensive anthology, which considers vegetarianism and anti-vegetarianism from a variety of perspectives with regard to issues of health, animal welfare, and the environment.

David Kirby's *Animal Factory*, the most up-to-date book-length work on conditions on factory farms, appeared in 2010.

Future Trends

There is very little public debate or discussion about the ethics of eating meat. There is no general sense that public intellectuals or politicians are under any obligation to offer arguments in defense of slaughtering animals for food. On the other hand, the practice of vegetarianism has been on the rise for several years, and contemporary teenagers and young adults appear to be more interested in it, and more open to considering it as an option for themselves, than are people of any previous generation. These trends, coupled with the continued worsening of the world hunger problem and of threats to the environment (especially global warming), seem likely to move the issue of vegetarianism closer to the center of public discourse than it has ever been in the past.

Summary

The practice of eating meat is traditional and customary in many cultures, and it is supported by some major religious texts, including the Bible. Moreover, millions of people find significant enjoyment in eating meat. But throughout history there have always been figures who have criticized this practice and who have urged, instead, that people should adopt a vegetarian diet, that is, one that excludes meat. These “ethical vegetarians” offer three main kinds of arguments, claiming that meat-based diets, in contrast to vegetarian ones, cause unnecessary suffering to animals, contribute to world hunger, and harm the environment. While ethical vegetarians constitute a small (but steadily growing) minority of the population, it seems likely that current trends,

such as the escalating degradation of the environment, the increasing global problem of malnutrition, and greater public awareness of the treatment of animals on modern factory farms, will lead to increasing public discussion and consideration of ethical vegetarianism and of its supporting arguments.

Cross-References

- [Access to Land and the Right to Food](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Christian Ethics and Vegetarianism](#)
- [Corporate Farms](#)
- [Climate Change, Ethics, and Food Production](#)
- [Meat: Ethical Considerations](#)
- [Sustainability of Food Production and Consumption](#)
- [Waste and Food](#)

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Vertical Farms in Horticulture

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Synonyms

Plant factories (Japan); Sky farming; Skyscraper farming

Introduction

Vertical farms are multistory buildings containing an environment conducive to the

growing of fruits, vegetables, and nonedible plants for things such as biofuels, drugs, and vaccines. Vertical farms take advantage of the same technologies that enable high-tech greenhouses to flourish. Vertical farms (VFs) are a form of controlled environment agriculture (CEA).

Since the 1990s, with the development of sophisticated hydroponic, and to a lesser extent aeroponic growing systems, CEA has matured into a commercially viable strategy for the large-scale production of a wide variety of crops (Practical Hydroponics and Greenhouses 2005). Historically, attempts to grow large amounts of vegetables and fruits indoors failed to evolve into commercially successful businesses, due largely to the lack of reliable technologies for growing plants hydroponically. Dr. William Gericke is given most of the credit for improving and further developing hydroponics in the 1930s while working at the University of California, Davis campus (Gericke 1940).

Hydroponics is the science of raising plants in the absence of soil. It typically employs a tubular growing system (usually constructed out of PVC piping) for holding the plants, which delivers a thin film of dissolved nutrients to the roots that are in contact with the liquid phase of the system. Today, hydroponic greenhouses have become highly viable economic ventures. They offer many advantages over traditional outdoor farming practices, the most important being total control of the physical and chemical conditions necessary to insure optimal plant growth and maturation: day/night cycle, temperature, humidity, soluble growing media (e.g., nutrient film technologies), aeration of root systems, pollination, and even quality of taste. By employing CEA with hydroponics on a large scale, many vegetables (e.g., tomatoes, cucumbers, melons, strawberries, green beans, peppers, and a host of leafy greens) are being grown under near ideal conditions, giving maximum yields in shorter periods of time to maturity following germination of seeds, compared to current outdoor farming strategies. In some extreme cases (e.g., lettuces), as many as eight crops a year can be harvested by indoor hydroponic technologies, compared

with just two to three from outdoor farming operations (<http://www.androidworld.com/prod26.htm>). Indoor crop loss is typically less than 10 %, whereas in most situations employing the most up-to-date equipment and methods, crop losses from traditional methods, from time of planting to harvest, can be 50 %, with losses in developing countries exceeding 70 % (<http://www.fao.org/docrep/008/y5800e/Y5800E06.htm>). Since many greenhouse facilities are located on the outskirts of their markets, food miles are greatly reduced, which helps to reduce loss of produce due to manipulation of the harvested plant during the shipping and handling phase of getting it to market. Finally, since none of the plants are grown in soil within hydroponic greenhouses, this approach to food production offers the distinct advantage of being able to be carried out anywhere in the world.

The Rise of Indoor Farming

Greenhouses have existed since the early 1700s, apparently having first originated in England as enclosed wooden structures (http://www.nvsuk.org.uk/growing_show_vegetables_1/origins_greenhouse.php). The advantages of greenhouses were immediately apparent to those lucky enough to have benefitted from living near them, and the idea rapidly evolved into today's modern transparent marvels of agricultural ingenuity. Soil-based agriculture was the first method used in them, and various flowers (e.g., roses, orchids) were the most commonly grown plants until hydroponics expanded the repertoire to vegetables, fruits, and herbs.

Since the 1990s, many commercial greenhouses have become equipped with a wide selection of computer-assisted monitors, rheostats, and pump systems for delivering water and nutrients, insuring optimum conditions throughout each plant's growing cycle, from germinated seedlings to harvestable crops. Europe, North America, Australia, Japan, Korea, and China have thriving greenhouse industries, inside of which are grown an astonishing variety of edible plants. Lagging behind in greenhouse development and implementation are countries

throughout Central and South America and sub-Saharan Africa. Unfortunately, in many of these latter places, especially Africa, greenhouses are sorely needed to help offset the often staggering annual losses of crops due to inclement weather, poor soils, arid environments, and hordes of insect pests, such as locust.

One of the largest commercial greenhouse operations (318 acres) is EuroFresh Farms, located in the desert near Wilcox, Arizona (<http://www.eurofresh.com>). Another unlikely place for growing crops indoors is the urban landscape, but even here good examples of commercial greenhouses can be found, such as Bright Farms (<http://www.brightfarms.com>) and Gotham Greens (<http://www.gothamgreens.com>), both of which are based in New York City.

Thus, if growing food in greenhouses employing state-of-the-art technologies and locating them within a large city, such as New York or London, makes sense from an economic perspective, then why not increase proficiency and output by extending their vertical footprint into several stories worth of production space? That is the essence of the concept of a vertical farm (VF). In fact, that is exactly what is happening in many places throughout the developed world.

Rationale for the Vertical Farm

The idea of growing food crops in tall buildings is not new, most likely originating in ancient times with the hanging gardens of Babylon as a prime example. Nonetheless, growing things that people can eat in that configuration was not forthcoming until recently. The reasons why the idea of vertical farming has taken so long to develop probably relates to the relative ease of farming outdoors in soil. Simply plow up some flat, already fertile land (preferably near a large river), then sow the seeds. Pray for rain, but not too much. Pray for moderate temperatures. Pray for no plant pests or diseases, too.

Agriculture arose in many places, but the most famous one was along the Nile River in Egypt. The Egyptians turned a non-systematized scheme

of planting and harvesting, invented by the inhabitants of the “Fertile Crescent,” into a well-defined science, keeping track of virtually everything that was important in order to insure a good yield. They paid very close attention to the annual rhythms of the Nile. At the same time as the Egyptian dynasties of the upper Nile rose to power, the humble dung beetle became elevated to the status of a revered God, because from where the average Egyptian stood, this lowly creature was observed turning animal waste into an edible plant simply by digging a hole and stuffing a ball of rolled up dung into it! Moreover, another dung beetle emerged along with the new plant the following spring, giving this insect the appearance of being able to create new plant life and live forever. In contrast to the first farmers in the Middle East, Egyptians used animal dung as fertilizer, in addition to the new soil brought to the upper regions of Egypt by the annual flooding of the Nile. The Egyptians became the first people to practice biomimicry (i.e., looking to nature for solution to their problems). But just as in all the other locations at which agriculture arose (e.g., China, Mexico, Borneo), crops occasionally failed, for a multiplicity of reasons. Soon thereafter, the need for Gods (e.g., Osiris, Kokopelli, Hermes, Saturn) that could intervene with these unwanted agricultural outcomes arose, and the incantations recited to elicit their help became a regular part of every farmer’s vocabulary. Luckily, today’s indoor farmers have little need for invoking the blessings of such Gods. Mostly, they pray for lower rates on their electric bills and a guaranteed market for their crops.

The Rise of the Vertical Farm

Throughout the millennia that followed the invention of agriculture (about 10,000 years), traditional farming technologies advanced slowly or not at all. It was not until the chemical synthesis of artificial nitrogen-based fertilizers, made possible by the Haber-Bosch process (Balken 1997), which took atmospheric nitrogen and combined it with hydrogen to make ammonia, and the synthesis of a wide variety of

agrochemicals for controlling weeds, insects, and microbial plant diseases (Müller 2000) that the post-World War II global farming community began to produce more food than the world could consume. As the human population burgeoned under this new agricultural revolution, more land was placed into the production of crops that were destined to feed animals or for the production of value-added products like high-fructose corn syrup and a wide variety of soy-derived products.

Over the next 50 years, aggressive application of agrochemicals to the land, including pesticides, herbicides, and fertilizers, became a regular feature of farming in the developed world. Eventually, agricultural runoff, laden with silt and agrochemicals, began to have a negative effect on the land, with birds (raptors in particular) being the most obviously affected by the overuse of DDT (see Rachel Carson’s book, *Silent Spring*). In many cases, nutrient-rich runoff also drastically reduced the harvest of sea life from estuaries around the world by encouraging algal blooms that depleted the oxygen in the shallow waters of those fragile ecotones. In addition, an accelerating rate of climate change began to alter traditional patterns of weather, adversely impacting the world’s agricultural community, resulting in numerous crop failures due to floods, droughts, and untimely monsoons. By the 1980s, the cause of the increased rate of climate change was obvious to most – increased levels of greenhouse gasses in the atmosphere due to the burning of fossil fuels. Even many of the most outspoken skeptics of the causes of climate change came to admit that the data were overwhelmingly in favor of the conclusions reached by the Intergovernmental Panel on Climate Change (IPCC).

As a direct result of the fourth report on climate change issued by the IPCC in 2007 (IPCC 2014), viable alternatives to traditional methods of growing food (permaculture, hydroponics, aeroponics, aquaculture) began to gain traction as practical approaches to augmenting dwindling food supplies due to crop failures caused by severe droughts and floods. In the 1930s, Buckminster Fuller suggested the possibility of

farming in skyscrapers, as did John Todd (<http://www.toddecological.com>) later in the 1960s, although their suggestions were ignored. It is probable that this was because it was not obvious during 1960 that outdoor farming would be in serious trouble, especially in the United States. By the year 2000, all that had changed. In 2008, just a year after the IPCC report forecasted dramatic changes in the world's food supply, some countries (e.g., Korea, Singapore, Sweden) were politically and financially able to support a demonstration program designed to bring about a paradigm shift in the way they managed their food supplies, including the construction of VF.

Vertical Farms: Anticipated Advantages

There are numerous advantages to farming indoors in the modern greenhouse, and the VF improves on the theme of the high-tech greenhouse in several ways. First, it immediately increases the yield per acre of any crop by multiples based on the number of floors the VF has. A typical greenhouse can outproduce a similar-sized outdoor farm for the same crop by a factor of anywhere from 4 to 10, depending upon the specific crop in question (personal communication, Gene Giacomelli, director of the CEA program at U. Arizona). By doubling or tripling the growing space in a VF, this factor will also go up accordingly.

Second, having VFs inside the city limits can result in a significant reduction in food miles (i.e., the distance between the place that produces the food and the places where it is consumed) (National Resource Defense Council 2007). Shortening that distance will save on the use of fossil fuels and lower the amount of greenhouse gasses in the atmosphere. Each year, traditional farming in the United States consumes some 10 % of the fossil fuels (Heller and Keoleian 2000). As VFs come on line and gain in popularity, it is hoped that one of its intended consequences will be to significantly lower that percentage.

Third, VFs contribute to job creation. A plethora of activities are required at many

levels to insure that the VF functions at maximum efficiency: managing the seed germination facility (e.g., nursery), transplanting seedlings into the VF, procuring and managing resources (e.g., water, nutrients, growing systems, lighting systems, automation, etc.), monitoring plant growth and development, developing pollination strategies, harvesting, distributing the harvest to local green grocers, and managing waste-to-energy protocols and quality control (DNA-based laboratory surveillance for plant pathogens and arthropod pest control). Other job requirements include IT personnel, human resource management, and business office personnel. These are but a few of the more important tasks awaiting a new work force in the newly emerging vertical farm industry. Community outreach, education, and a business center could also be considered after the basic operations of the VF become established.

Fourth, if and when urban agriculture in all its variations, including rooftop greenhouses and stand-alone VF facilities, becomes the norm for supplying the bulk of fresh fruits, herbs, and vegetables to those who choose to live in cities, then some land currently dedicated to farming could be allowed to return to its original ecological setting. In most cases, this means the reforestation of hardwood forests (<http://www.hubbardbrook.org>) that once stood where fields of corn and soybeans now grow. If enough land could be restored by benign neglect, then trees would once again become an important factor in the sequestration of atmospheric carbon dioxide (Ross 2009). This could have a significant impact on the rate of climate change, slowing it down enough to allow more time for us to adjust to the inevitable rise in the Earth's temperature. This might seem like wishful thinking to some, but if nothing is done to reverse deforestation (Ross and Pervaze 2010), then the Earth will soon be stuck with a runaway climate regime, for which there is no solution.

Finally, food-borne illnesses due to contamination of harvested produce (e.g., listeria, salmonella, *E. coli* strain 0157) can be avoided by employing clean technologies linked to indoor farming. Furthermore, the lack of direct contact

of harvested produce with farm animals using CEA greatly lessens the chances of contamination during the shipping and selling of crops grown indoors.

In the beginning, VFs will undoubtedly be very expensive to construct, own, and operate, with operating costs strongly linked to energy use. As more come on line, however, these costs will decline in all aspects of construction and operation, including the most daunting single item, energy requirements, for operating them. This is particularly relevant with respect to the amount of electricity needed to power LED grow lights. Today, the most efficient LED systems that produce both red and blue wavelengths of light are around 28 %. Experts in the field of high-tech greenhouse science estimate that this percentage needs to be around 60 % efficient to encourage the average venture capitalist to invest in a vertical farm. At that level of energy efficiency, profitability is clearly a real possibility. As an aside, the theoretical limit of efficiency for LED light is an astounding 100 %, so expectations are high that the magic number of 60 % efficiency is only several years away from the consumer market.

Existing Vertical Farms

In 1999, the idea of farming in tall buildings was taken on as a subject in a class taught at Columbia University. It evolved within a few years into an annual classroom exercise, exploring all the major issues associated with making vertical farming practical. The projects resulting from that course were posted on the Internet (<http://www.verticalfarm.com>) and received a large number of submissions for designs of vertical farms, many of which were added to the web site (see Google Images – Vertical Farm). In 2010, a book was published on the subject, *The Vertical Farm* (St. Martin's Press, New York), even though there were no vertical farms up and running at that point. Within a year, however, vertical farms had become a reality in Korea, Japan, Singapore, and the United States.

Republic of South Korea

The vertical farm established in Suwon, Korea, in May of 2011 is financed by the South Korean governments' Rural Development Administration and operated under the leadership of Choi Kyu-hong (www.youtube.com/watch?v=83f_q_9yW5k). Construction was completed in March of 2011. It is three stories tall (Fig. 1) and grows mainly leafy green vegetables. It derives 50 % of the energy needed to support a robust LED grow light system (Fig. 2) from an array of solar panels located along the side of the building and a supplemental geothermal system. The VF features an automated rack system for moving plants from the top of the VF to the harvesting area. The VF has two main functions. Its primary mission is to serve as a research facility to further the general development of the concept of vertical farming and to improve the energy efficiency of indoor farming in multistory buildings. Its secondary goal is to serve as a site for testing the viability of various seeds that are stored in the much larger national seed bank building (Fig. 3) located adjacent to the VF.

Japan (Kyoto): Nuvege

Nuvege is a commercially successful "plant factory" housed in a single, very large building that resembles a 747 passenger jet hanger (Fig. 4) (www.nuvege.com). It occupies some 30,000 horizontal square feet, but within that space, Nuvege utilizes over 57,000 square feet of vertical growing space. LED grow lights and hydroponics are used in combination to produce leafy green vegetables of several kinds. They are currently expanding their Kyoto operation to include vertical farms in Tokyo and some as yet unspecified locations within the United States.

There are many other "plant factories" scattered throughout Japan. As of 2012, there were an estimated 50 such facilities, with over half of them taller than one story in height. Many more are planned over the next several years.

Singapore

Sky Greens (www.skygreens.com) is a commercial vertical farm located in Singapore

Vertical Farms in Horticulture,

Fig. 1 Vertical farm in Suwon, Republic of South Korea



Vertical Farms in Horticulture, Fig. 2 Inside the vertical farm in Suwon. Note the abundant use of LED grow lights

that produces leafy green vegetables (www.youtube.com/watch?v=yHkYp_az7Iw). Jack Ng started the building prototype in 2009 as a public-private partnership between Sky Greens and the Agri-Food and Veterinary Authority of Singapore.

Chicago, Illinois: The Plant

The Plant is a three-story vertical farm located within the city of Chicago (Fig. 5) (<http://www.plantchicago.com>). It is housed in a retrofitted abandoned meat processing (smoking bacon and related products) plant that produces a wide variety of edible crops and tilapia. Plans are in place to install an efficient waste-to-energy system using biogas from an anaerobic digester. According to its executive director, John Edel, The Plant should be off the energy grid of Chicago once the digester is up and running sometime in 2013.

There is a large vertical farm complex on the campus of Texas A&M University, sponsored by DARPA and operated by the Texas Plant-Expressed Vaccine Consortium. It grows genetically engineered tobacco plants to manufacture viruslike particles for use in an influenza

Vertical Farms in Horticulture,

Fig. 3 National seed bank of Republic of South Korea in Suwon



Vertical Farms in Horticulture,

Fig. 4 Nuvege vertical farm, Kyoto, Japan



vaccine (see and listen to This Week In Virology, episode 47, Vertical Vaccine Farm, for details as to how this system works). It can produce some 1, 500 doses of vaccine from a kilogram of plant material. Commercial vaccine producers use chicken eggs for the same purpose. Each egg yields only one dose of

vaccine. The advantages of such vertical farms for the production of other products useful in human medicine (e.g., insulin, antibodies of varying specificities, clotting factors) will become more obvious as the need for these products becomes more acute over the next 20 or so years.

Vertical Farms in Horticulture, Fig. 5 The Plant vertical farm in Chicago



Planned Vertical Farms

In 2012, Plantagon (www.plantagon.com), a private corporation owned and operated by the Onondaga Nation of New York state (www.onondaganation.org), announced plans to build a 17-story version of a vertical farm in the town of Linköping, in southern central Sweden, in collaboration with the Swedish government. Groundbreaking, began in the spring of 2012, kicked off this ambitious venture. It is not known how long it will take to complete the building, but it will probably be finished within a year. Plantagon intends to grow many varieties of Asian leafy green vegetables as their initial commercial offering to the consumer.

Jackson, Wyoming

Vertical Harvest plans to construct a three-story vertical farm in Jackson, Wyoming (www.verticalharvest.org). They are in fund-raising mode as of September 2012. Their goal is to raise enough funds to qualify for a Wyoming business grant. If they succeed, they plan to grow tomatoes, strawberries, lettuce, and microgreens. Vertical Harvest is a for-profit corporation.

Summary

The concept of vertical farming has already evolved from a classroom activity in 1999 to the construction of vertical farms. It is anticipated that as Earth's climate continues to change over the next 20 years, adversely altering the global

agricultural landscape even further, the establishment of large numbers of indoor farms inside the city limits will become a significant contributor to the urban food supply. When this occurs, then food-borne infectious disease outbreaks and food shortages will be greatly reduced.

Cross-References

- [Civic Agriculture](#)
- [Food Risks](#)
- [Food Security](#)
- [Resource Conflict, Food, and Agriculture](#)
- [Slash-and-Burn Agriculture](#)
- [Sustainability of Food Production and Consumption](#)
- [Water, Food, and Agriculture](#)

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Vertical Integration and Concentration in US Agriculture

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Synonyms

Consolidation; Globalization; Industrialization

Introduction

Vertical integration is the process whereby one firm merges with another firm from which it buys inputs or to which it sells output. Concentration reflects the degree of horizontal integration and defines the extent to which a firm has competitors. The food system in the USA has become increasingly integrated and concentrated during the last 100 years. Economists have long argued that economic factors – most notably economic efficiency – largely explain the increase in vertical integration and concentration in the agrifood industry (MacDonald et al. 2004), but others implicate the exercise of market power and changes in antitrust policy enforcement as explanations (Carstensen 2008; Hendrickson and Heffernan 2002). Concentration and integration (hereafter simply “consolidation”) in the food system raises a number of important ethical issues for farmers, agribusiness firms, and

consumers. These ethical issues are derived from the fact that concentration fundamentally defines and limits the choices or options for most people. Everyone eats and thus has a stake in the food system, but many people also work in the food system providing labor, management, and capital. It is how members of society respond, or are forced to respond, to limited options that forms the basis for many of the ethical problems we observe in the food system. This entry describes the trends in consolidation within the agrifood industry and highlights a number of important ethical issues and their implications arising from industry concentration.

Trends in Agrifood Consolidation

There are many ways to describe the degree to which an industry is concentrated. A common method is to examine the industry’s four-firm concentration ratio (CR4), which measures the total percentage of a market controlled by the industry’s four largest firms. Scholars have documented extensively the increase in concentration in virtually all sectors of the food and agriculture industry (see, for instance, Drabentstott 1999; Hendrickson et al. 2002; Howard 2009). For example, in 1967 the four largest firms controlled one-quarter of the non-poultry animal slaughtering industry, but by 2007 that share more than doubled. In wet milling, the four largest corn milling plants controlled 68 % of the market in 1967, but by 2007 that share increased to 83 %. Similarly, the four largest flour milling firms controlled 30 % in 1967 but increased their share to 55 % in 2007 (see James 2013a for source details).

Table 1 presents the CR4 for several agricultural and food retailing markets in the USA, as well as names of the top firms if known, for a 20-year period between 1990 and 2011. The table reveals several important patterns. First, with one exception (flour milling), the food sectors represented became more concentrated – the top four firms controlled a larger share of the market. Second, the increase in concentration can occur relatively rapidly. For example, the pork

Vertical Integration and Concentration in US Agriculture, Table 1 Four-firm concentration ratios and firm names for selected agricultural input and output industries, and food retailing

Industry sector	1990	1999	2011
Beef slaughter – steer & heifer	69 % • IBP • ConAgra • Excel (Cargill) • Beef America	79 % • IBP • ConAgra • Excel (Cargill) • Farmland National Beef	82 % • Cargill • Tyson • JBS • National Beef
Beef production/ feedlots	n/a • Cactus Feeders • ConAgra (Monfort) • J.R. Simplot Co. • Caprock (Cargill)	1,349,000 capacity • Continental Grain Cattle Feeding • Cactus Feeders Inc. • ConAgra Cattle Feeding • National Farms Inc.	1,983,000 • JBS Five Rivers Cattle Feeding • Cactus feeders (relationship with Tyson) • Cargill Cattle Feeders LLC • Friona Industries
Pork slaughter	45 % • IBP • ConAgra (SIPCO/ Armour) • Morrell • Excel	57 % • Smithfield • IBP Inc. • ConAgra (Swift) • Cargill (Excel)	63 % • Smithfield Foods • Tyson Foods • Swift (JBS) • Excel Corp. (Cargill)
Pork production	n/a • Murphy Farms • Tyson Foods • Cargill • National Farms	834,600 sow capacity • Murphy Family Farms • Carroll's Foods • Continental Grain (incl. PSF) • Smithfield Foods	1,618,904 sow capacity • Smithfield Foods • Triumph Foods • Seaboard • Iowa Select Farms
Broiler slaughter	45 % • Tyson • ConAgra • Gold Kist • Perdue Farms	49 % • Tyson • Gold Kist • Perdue • Pilgrim's Pride	53 % • Tyson • Pilgrim's Pride (owned by JBS) • Perdue • Sanderson
Turkey slaughter	31 % • Louis Rich (Philip Morris) • Swift (Beatrice/ KKR) • ConAgra • Norbest	42 % • Jennie-O (Hormel) • Butterball (ConAgra) • Wampler Turkeys • Cargill	58 % • Butterball (Smithfield/ Goldsboro) • Jennie-O (Hormel) • Cargill • Farbest Foods
Animal feed	n/a	n/a • Cargill (Nutrena) • Purina Mills (Koch Industries) • Central Soya • Consolidated Nutrition (ADM + AGP)	44 % • Land O'Lakes Purina LLC • Cargill Animal Nutrition • ADM Alliance Nutrition • J.D. Heiskell & Co.
Flour milling	61 % • ConAgra • ADM • Cargill • Grand Met (Pillsbury)	62 % • ADM • ConAgra • Cargill Flour Milling	52 % • Horizon Milling (Cargill/CHS) • ADM • ConAgra
Wet corn milling	74 % • ADM • Cargill • A.E. Staley (Tate and Lyle) • CPC	74 % • ADM • Cargill • A.E. Staley (Tate and Lyle) • CPC	87 % • ADM • Corn Products International • Cargill

(continued)

Vertical Integration and Concentration in US Agriculture, Table 1 (continued)

Industry sector	1990	1999	2011
Soybean processing	61 % • ADM • Cargill • Bunge • Ag processors	80 % • ADM • Cargill • Bunge • Ag processing	85 % • ADM • Bunge • Cargill • Ag processing
Grocery	n/a	n/a	42–51 % • Wal-Mart • Kroger • Safeway • Supervalu

Sources: 2011 data is taken from Table 1 in James et al. (2013) and 1999 data is reported in Heffernan et al. (1999). 1990 data is reported in Heffernan and Constance (1990). Sources of individual data are available in each publication

production capacity of the four largest firms nearly doubled in a 10-year period of time. Third, some firms dominate multiple sectors and thus represent both industry concentration as well as vertical integration. Cargill, for instance, produces and processes an array of meats, provides feed, and trades/processes corn and soybeans. Tyson is able to provide a full array of protein – beef, pork, and broilers. Finally, the four largest firms are not the same over time. Some firms dominating their sectors in 2011 were not present in 1990, thus illustrating how quickly firms can come to dominate their industry (e.g., JBS in protein and Wal-Mart in groceries).

These trends in the food system can be illustrated further by examining the current structure of the fertilizers and seed sectors. Taylor (2010) shows that fertilizers for most grain crops are dominated by only a few companies: Yara, Potash Corp, and Mosaic (recently divested by Cargill). Potash and phosphorous production has long been organized in cartels (Blas 2010; Etter 2008), where three cartels are thought to account for 70 % of the global trade in these two fertilizers (Blas 2010). Howard (2009) documents the consolidation of the seed industry after the introduction of commercially popular Roundup Ready seeds in 1996, which were genetically engineered to resist the spraying of Roundup weed killer (see also Moss 2010, 2011; Hubbard 2009). Some estimates show that 70 % of the corn seed market in the USA in 2009 was controlled by two firms, DuPont (Pioneer) and Monsanto, which controlled 59 % of soybean seed (Pollack 2010).

At the global level, UNCTAD (2006) estimated approximately 29 % of 2004 global seed sales were controlled by DuPont/Pioneer, Monsanto, Syngenta, and Limagrain, while ETC Group (2008) claimed 53 % of “global proprietary seed market” was split between those four firms with Monsanto being the leader with 23 % and DuPont at 15 %. Importantly, Monsanto was not involved in the seed industry until the mid-1980s but has acquired more than 50 seed firms since then (several at a cost of more than \$1 billion each) (Howard 2009).

The integration and consolidation observed in US seed and agricultural input markets is not just a US phenomenon. Along with Wilkinson (2002), who documents concentration in Brazilian markets, De Schutter (2010) claims that five grain traders dominate the soybean processing market in Brazil, while a CR2 of 53 % in dairy processing in the mid-1990s caused the collapse of dairy farmer cooperatives. Moreover, since the early 1990s, there has been a rapid increase in the globalization of the protein and grain markets. In this context, globalization refers to the process by which firms come to dominate similar markets but in different countries and geographic areas. For instance, in the 1990s, ADM invested heavily in soybean processing facilities in Paraguay, Uruguay, Brazil, and China (see Heffernan et al. 1999; Hendrickson et al. 2008b). Cargill operates significant enterprises around the globe with grain trading activities in all major ports and significant processing facilities in China, where ADM, Bunge, Cargill, and Louis Dreyfus have

Vertical Integration and Concentration in US Agriculture, Table 2 Top firms in food retailing in the USA

1997	2000	2011
CR5 = 24 %	CR5 = 42 %	CR4 = 42–51 %
Kroger Co.	Kroger Co.	Wal-Mart
Safeway	Wal-Mart	Kroger
American Stores	Albertson's	Safeway
Albertson's	Safeway	Supervalu
Ahold USA	Ahold USA	

Sources: 1997 and 2000 data is from Hendrickson et al. (2002). 2011 data is from James et al. (2013)

become the largest soybean processors (Peine 2013). Constance et al. (2013) noted that Tyson has significant meat operations in Mexico while Smithfield operates pork facilities in Brazil and Eastern Europe; the latter occurred at the same time as rapid expansion and consolidation domestically and internationally (see also Bonanno and Constance 2006; Constance et al. 2003). US firms are not the only dominant players either. JBS, based in Brazil, is currently the world's largest beef packer. Smithfield, the largest US pork processor, was acquired by a Chinese pork packer.

The processes of horizontal integration and globalization have also been very apparent in food retailing. In the 1990s, the food retail industry in the USA consolidated rapidly, primarily due to Wal-Mart's entry into groceries in the late 1980s. By 2000, Wal-Mart was the second largest grocer in the USA (Hendrickson et al. 2002) and is now the dominant firm (see Table 2). According to the *New York Times*, Wal-Mart has over three times the sales of its nearest competitor (Clifford 2011).

Wal-Mart is one of a small number of emerging global grocers that include Carrefour (a French firm that is the second largest general retailer in the world) and Tesco, Britain's largest grocer. Understanding the global reach of food retailers is important because of their control over global supply chains that source food as cheaply and consistently as possible. As Lynn (2006, 2009) notes, Wal-Mart tends to use its market power as a retailer as a tool to negotiate lower prices to producers, manufacturers, and workers rather than forcing consumers to pay higher prices.

Ethical Issues Resulting from Consolidation in the Food System

One of the primary implications of consolidation is that it limits choices in the marketplace. Importantly, the ethical issues that arise because of consolidation are not unique to the food system, as any industry that consolidates creates constraints on existing participants. However, the ethical consequences of concentration in the food system arguably become more important than that in other goods and services because everyone must eat – and on a regular basis. Food is a necessity, which means that the constrained choices of the market can rapidly become a life or death situation in terms of hunger and nutrition. This means that those with more options, or those with greater control over their choices, may actually bear some responsibility for the fates of others. There has been a growing debate among scholars and policymakers about the implications and ethics of industry concentration (see, for instance, James 2013b). The following highlight a number of these ethical issues.

Because industry concentration and integration have been occurring in both farm input and farm output sectors, farmers can feel the effect of constraints the strongest. Hendrickson and James (2005) argue that consolidation has two important and direct effects on farmers. "First, it constrains – as in limits or inhibits – the decisions of farmers by restricting choice options or the types of decisions they can make. . . . Second, it constrains – as in compels or obliges – the choices of farmers by forcing them into the kinds of decisions that they otherwise would not have chosen for ethical or other reasons" (p. 283). Both of these effects can increase the economic pressures that farmers feel and, as a result, create tensions on or even produce an erosion of one's personal ethics (see Hendrickson and James 2005; James and Hendrickson 2008). Constrained choice also has an environmental impact, as it affects how farmers care for, treat, and otherwise manage land. As Stuart (2009, p. 53) finds, "consolidated markets and increasing corporate power in the food system can constrain producer choice and

create ethical dilemmas over land management ... [in that] growers face serious ethical dilemmas and feel pressured by large processing and retail firms to adopt measures they find environmentally destructive and unethical.”

The trends in consolidation noted above also raise the ethical question of whether there is adequate and fair competition in agriculture. For example, in 2010, the US Departments of Agriculture and Justice held a series of workshops in the USA on the issue of agricultural competition. In these workshops farmers and agricultural producers were invited to voice their opinions on what they perceive as the nature of competition in the agrifood industry. Speaking in the opening session, US Attorney General Eric Holder said, “Is today’s agriculture industry suffering from a lack of free and fair competition in the marketplace? That’s the central question” (USDOJ-USDA 2010, p. 11). Important in this discussion is how adequacy, fairness, and competition are defined (see James 2013a; Thompson 2013; Sykuta 2013) as well as the extent to which economic concerns about efficiency, which economists argue have driven the rapid consolidation in agricultural markets, are compatible or in conflict with moral obligations that industry participants have toward each other, animals, and the environment (Rohwer and Westgren 2013).

Industry consolidation in the food sector also raises concerns about how economic power is shifting toward fewer and larger firms and how such power is not being held in check by countervailing economic, social, or political forces (Levins 2002; Taylor and Domina 2010). For example, James et al. (2013) show how the changing structure of the food sector can increase the dependency that some market participants have on others with whom they buy and sell. Importantly, they show how dependency, defined as being reliant upon someone or something else, cannot always be determined by considerations of industry concentration alone (e.g., by measures of CR4). The reason is that focusing on the market share of the top firms obscures the myriad sets of relationships that farmers, food processors, and others are embedded in when they buy inputs or sell their finished products.

These relationships can have their own sets of local dependencies, which create or transmit power imbalances along value chains. Thus, “entities who rank near the top in CR4 can experience significant dependency advantages on the buying end (e.g. beef packers with a CR4 of 82 % [may extract concessions from farmers and feedlots]) but when selling, the power resulting from differential dependencies is dissipated by the fact that other entities may possess significant buying power relative to them (e.g. Wal-Mart with somewhere between a quarter and one-third of the grocery market [buys beef from the packer and extract concessions from them])” (James et al. 2013, p. 121).

Food consumers, especially those who consider themselves “ethical eaters,” also face ethical dilemmas resulting from consolidation. The lack of transparency in the current food system, where the vast majority of food moves through supermarket and food service outlets, means that it is difficult for consumers to find out how their food was produced, who produced it, and where. These consumers may want to buy foods produced in ways that match their environmental and social values, but with their limited range of choices – if such foods are available at all – they cannot act on their own personal ethics. Moreover, there can be a lack of trust that the food standards and labels used to define their choices really reflect their core values, given the negotiations that occur between farmers, supermarkets, and third-party (independent) certifiers of standards such as humane, sustainable, fair labor or fair trade (Hatanaka et al. 2006).

The ethical eaters described above are often portrayed as elitist and misguided (McWilliams 2009; Lusk 2013). However, they most likely possess the money and knowledge necessary to participate in the existing food system markets – or leave them altogether for new forms of procuring food such as personal production, direct connections with farmers, or processors who farm and produce food in ways compatible with their ethical interests. But many social justice and public health advocates have raised concerns about the quality and quantity of food available to the most vulnerable citizens of society – those

who live in areas, either rural or urban, without good access to fresh, healthy, and safe food with perhaps too much availability of cheap, highly processed, and unhealthy foods (Ver Ploeg 2009; Story et al. 2008). These access issues can be exacerbated by consolidation, which has tended to eliminate smaller retailers and distributors who once served these communities. Moreover, smaller distributors and retailers are at a distinct disadvantage with pricing, given the fact that the largest supermarket buyers may be able to negotiate agreements with suppliers who use economies of scale to supply them at a particular price, but will experience significant diseconomies if the buyer abandons that supplier. Foer (2010) cautions about this “waterbed” effect where one buyer forces a discriminatory low price on a supplier which gains that buyer a competitive advantage, while at the same time, the supplier tries to recoup some profit in selling to other buyers, thereby putting them at a disadvantage in the market place vis-à-vis buyer number one.

Ethical consideration must also be given to the environment. Investment in particular ways of growing and distributing food has been shaped by the consolidation that has happened in the food system. In order to better fit into the globally organized food chains, regions have specialized in production of certain crops or livestock (Lyson 2004), thereby eroding biodiversity and contributing to environmental problems such as nutrient runoff in water supplies, pesticide residues on food and in water, and reduced soil fertility (McIntyre et al. 2008). This compromises the ability of future generations to produce food for their societies.

As smaller farmers, processors, and retailers have been left out of the consolidated food system, the choices that communities can make about social and economic development options are limited by the structure of the food system and the allocation of labor, capital, and management in that system. Since the rise of the modern nation-state system, the availability, quantity, and quality of food have generally been considered a mandate of the government (Friedman and McMichael 1989). However, in the last few decades of globalization, food has moved from

the public arena of the nation state into a private arena of decision making that involves those within the dominant firms, including their management teams, boards of directors, and shareholders. When food moves from the public to the private realm, it becomes a privilege rather than a right, however unevenly that right has been claimed or fulfilled (Hendrickson et al. 2008a). With food a necessity for human life, this means consolidation of the food system affects the basic condition of what it is to be human. This certainly requires ethical thought and response.

Conclusion

Wendell Berry (1990) said, “eating is an agricultural act.” While Berry was imploring consumers to understand their basic connection to agriculture and place, his statement explains the fundamental fact that agriculture is part of a complex food system spanning production, consumption, and waste. Moreover, food is a necessity and needed on a regular basis for all human beings, which makes the ethical implications of our food system structure and choices critical to our functioning as a society. In that sense, the food system is certainly part of our larger social, economic, and political systems and reflects and distills the ethical issues we experience within them.

The structure of the food industry has changed – becoming increasingly integrated and concentrated. Such change created or expanded a number of important ethical issues, most of which are derived from the fact that consolidation constrains the choices that farmers, consumers, and other food participants have.

Cross-References

► [Private Food Governance](#)

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Virtue Theory, Food, and Agriculture

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Synonyms

Character; Character ethics; Ethical theory; Moral education; Vice; Virtue; Virtue ethics

Introduction

Discussions about the ethics of food and agriculture are replete with virtue and vice language. In agricultural ethics, it is often claimed that farming promotes good character traits – e.g., self-reliance, fortitude, and patriotism – and that virtues such as diligence, ecological sensitivity, and patience are central to good agricultural practice. In food ethics discussions, it is often claimed that character traits such as temperance and compassion are crucial to healthy and ethical consumption, whereas other character traits, such as gluttony and thoughtlessness, are inimical to them. This entry focuses on what makes character traits agricultural virtues and consumptive

virtues, as well as on the role of virtue within agricultural and food ethics.

Section “[Character Traits, Virtue, and Virtue Theory](#)” discusses what virtues are and what makes a character trait a virtue. Sections “[Agricultural Virtues](#)” and “[Consumptive Virtues](#)” focus on the specification of agricultural virtues and consumptive virtues, respectively. Section “[Virtue and Right Action](#)” discusses the ways in which virtue promotes right action. Section “[Virtue Theoretical Ethics](#)” discusses virtue-oriented accounts of right action. Section “[Agriculture and Virtue Education](#)” briefly discusses the view that farming is an effective means of moral education.

Character Traits, Virtue, and Virtue Theory

A *character trait* is a disposition to take certain types of considerations as reasons (or as motivational) for action or emotion under certain types of circumstances. Different people have different character traits if they are disposed to respond differently toward the same types of considerations. For example, a person who is consistently moved neither emotionally nor to action by the suffering of others (when she is in a position to help alleviate the suffering) is indifferent, whereas a person who is empathetic and tries to alleviate the suffering (when in an appropriate position to do so) is compassionate. The two people are disposed regarding the same thing – the *field* of both of the character traits is the suffering of others – however, they are differently disposed (Aristotle 1985). The dispositions that constitute character traits are not merely reactive; they are deliberative and conative as well. It is not just that a compassionate person feels and acts differently from an indifferent person; they understand and reason differently about the suffering of others. Character traits also have a perspectival dimension – they are relevant to how people “interpret” the world. For example, a selfish person is more likely to “see” a situation where there are scarce resources to be allocated as a problem of securing as much as possible for

herself, while a just person will “see” it as a coordination or cooperation problem. A person who is concerned with the welfare of animals will “see” a concentrated animal feed operation as a system of suffering, whereas a person not so disposed might “see” a system of efficiency.

A *character virtue* (hereafter just “*virtue*”) is a well-justified character trait. It is a disposition to respond to considerations in the world in excellent ways. If the suffering of others is bad and one is indifferent to it (or aims to cause it), then one fails to respond well to a morally salient fact about the world. Therefore, cruelty and insensitivity toward the suffering of others are vices, and compassion toward others is a virtue. To paraphrase Aristotle, a virtuous person is disposed to respond to the right thing, for the right reason, and in the right way while also having the right desires and feelings about it (Aristotle 1985). Specifying what counts as “right” for each of these is the central project within virtue theory.

There are several competing virtue theories, but the most prominent ones share this crucial feature: what constitutes right responsiveness is largely determined by the goods and values in the world (and the nature of those values), as well as by the relevant facts about the agent and her situation. According to eudemonistic virtue theorists, such as Aristotle, a virtue is a character trait that a person needs to flourish or to live well (Hursthouse 1999; Annas 1993). That is, flourishing is what is good or valuable, and the virtues are those character traits that are conducive to or constitutive of it. Other virtue theories are more pluralistic in that character traits are also assessed by their relationship to values other than agent flourishing – for example, how they contribute to the flourishing of other people, the welfare of nonhuman animals, the health of the environment, or the quality of social/civic systems (Swanton 2003; Sandler 2007; Treanor 2010). Take, again, the example of compassion toward the suffering of others. On a strictly eudemonistic approach, compassion toward the suffering of others is justified because the disposition is constitutive of (or conducive to) the agent’s living well – for example, with healthy

interpersonal relationship and as a rational person (Hursthouse 1999; Foot 2001). On a pluralistic approach, it is also directly justified by the value of the flourishing of other people (Sandler 2007). (The justification is direct in the sense that it is not mediated by the relationship between the flourishing of others and the flourishing of the agent.) Moreover, because animal suffering is morally considerable (Singer 1975), the disposition to care about and try to reduce their suffering is a part of the virtue.

Because which character traits are virtues depends upon what things are good or valuable in the world, which character traits are agricultural and consumptive virtues is highly sensitive to the appropriate ends of agriculture and consumption. The next section discusses which character traits are agricultural virtues. The section after that discusses character traits associated with virtuous food preparation and consumption.

Agricultural Virtues

One way in which character has been thought to be related to agriculture is that there are certain character traits that dispose a person to farm well or to engage in good agricultural practices. Let us call these *agricultural virtues*. This section addresses what makes a character trait an agricultural virtue before turning to which character traits are agricultural virtues.

Some character traits – often called *enabling* or *cardinal virtues* – are conducive to doing almost anything well. Commonly recognized enabling virtues, in both secular and religious traditions, are traits such as courage, fortitude, thoughtfulness, and temperance. These character traits are considered cardinal virtues because they involve regulation of core emotional, cognitive, and conative responses. If a person lacks self-control, is easily discouraged, reasons poorly, and acts rashly, they are more likely to fail to accomplish their aims than is a person who is temperate, controlled, and deliberate. This is likely to be no different in farming than it is in law enforcement, education, or parenting. These character traits are agricultural virtues but only

because they are human virtues more generally, and agriculture is a human activity.

Not all agricultural virtues are like this. For example, it is crucial to success in agricultural production that a person be ecologically sensitive, at least in a minimal sense. They must respond well to climatic and weather events; they must plan well regarding seasonal timing and changes; they must be attuned to the limits and possibilities of biological productivity. Being well disposed with respect to ecological dependencies, vulnerabilities, and interactions more generally is not something that is necessary for good law enforcement or good dentistry. It is not a general virtue in the same way that is self-control. This does not, of course, imply that ecological sensitivity is a uniquely agricultural virtue: it is crucial to good conservation biology and water management practices as well, for example. But the field or domain of the virtue encompasses agricultural practice, and for that reason, it is properly an agricultural virtue. From this point on, “*agricultural virtue*” refers to virtues of this sort – i.e., non-cardinal virtues that are operative in agricultural practice (i.e., virtues whose field or sphere of application encompasses agricultural activity). Agricultural virtues are character traits that make for good farmers and are conducive to good agricultural practice.

Because agricultural virtues are character traits that are conducive to good agricultural practice, characterizing agricultural virtue is highly sensitive to what the appropriate ends or goals of agriculture are (which is dependent upon the values or goods at stake with agriculture). All agriculture has a common goal of the production of food or commodities. However, that is only a partial account of that at which any actual agricultural practice aims. In fact, there is wide divergence in views about what the aims of agriculture should be. On some views, the goal should be to maximize agricultural outputs or profits. On other views, the goal should be to produce food (or other agricultural commodities) compassionately and sustainably. On still other views, the goals of agriculture include maintaining cultural traditions and practices (Thompson 2010).

Different views on the ends or goals of agriculture support different accounts of which character traits are agricultural virtues. On the view that maximizing output should be the goal of agriculture practice, any element of the agricultural production system that is underutilized is detrimental to accomplishing the goal, and people ought to always be willing to incorporate novel organizational and technological methods for increasing yields. Therefore, if the end of agriculture is maximizing yields, character traits such as efficiency and innovativeness are agricultural virtues. The idea that the end of agriculture is maximizing yields has been referred to as the industrial agricultural model (Thompson 2010). The impetus for it comes from the commodification of agriculture associated with the globalization of food systems, as well as from humanitarian concerns about how to feed a global population of over seven billion people.

The industrial agricultural model is not the only model for agriculture. On some views, both religious and secular, farmers are not only producers of a certain sort of commodity but also stewards of the land and of cultural traditions and communal practices (Shiva 2000; Berry 1997; Jackson 1985). On this view, the end of agriculture is not merely to produce food, but to do so in particular ways – i.e., ways that are consistent with the other values at stake. Agricultural practitioners must, therefore, be sensitive or responsive to a wider (or alternative) array of considerations. As a result, the character traits that constitute agricultural virtue can be quite different than they would be on the industrial model.

Consider, for example, the commitment to sustainability. There is a conception of sustainability embedded in the industrial agricultural model. However, it is a narrow and weak conception of sustainability. It is defined only in relation to agricultural production, and it can be accomplished even if the local resource base is diminished (e.g., topsoil and water), as long as external inputs can maintain productivity. Many people – both producers and consumers – advocate for a broader and stronger conception of sustainability. On this alternative view, sustainability has to

do not only with maintaining or increasing levels of outputs but also with protecting resource bases and ecological systems beyond those directly related to agricultural productivity. Ecological sensitivity of this sort involves being responsive to considerations related to the biological richness of soil composition, greenhouse gas emissions from agriculture that contribute to global climate change, and agricultural runoff's impacts on water quality, for example. A person who is well disposed to promoting robustly sustainable agriculture will respond differently to the same ecological considerations than will a person who is disposed only to maximizing yields. They will take different considerations as reasons for action, will have different affective responses, will adopt different goals, and will deliberate about things in different ways. So, again, which character traits are agricultural virtues is sensitive to what conception of sustainability ought to be adopted in agriculture.

Ecological sensitivity is not a unique virtue in this regard. The same holds with respect to compassion and animals. If the end of animal agriculture is maximizing output, then a disposition of indifference toward the suffering of the animals is justified except insofar as the suffering might affect yields. However, if the end of animal agriculture is to produce animal products with minimal suffering, then compassion ought to be extended to agricultural animals. Those who advocate for compassionate animal agriculture often do so on the grounds that it is necessary because nonhuman animals are morally considerable. That is, nonhuman animals have a sort of value or worth that goes beyond their mere instrumental value to people (Singer 1975). This illustrates, again, the way in which the appropriate ends of agriculture are dependent upon the values involved or at stake in agricultural activities. If only human well-being mattered, the dispositions regarding animals and ecological systems that constitute agricultural virtue would be quite different than if nonhuman animals and/or nature have (noninstrumental) value as well (Sandler 2007).

The possibility of cultural and communal ends to agricultural practices is also relevant to the

specification of agricultural virtue. On many views, farming is a practice not only in food production but also in cultural stewardship. This stewardship can involve maintaining historical landscapes, traditional agricultural varieties, or traditional agricultural methods, for example. Moreover, agriculture-related practices, such as seed sharing, harvest festivals, and cooperative institutions, can be central to maintaining communal ties and cultural traditions. A concern frequently raised about industrial agriculture is that in the drive to promote efficiency, these cultural values and communal relationships are often undercut. As a result, commitment to cultural and communal values or ends is often thought to favor more conservatism in agricultural virtue – for example, greater deliberateness in the evaluation and adoption of new technologies and prioritizing local independence and autonomy. It is for these reasons that those who emphasize community and cultural values in agriculture are often disposed against novel seed varieties patented by transnational corporations, as well as the displacement of local polycultures in favor of commodity monoculture (Shiva 2000; Berry 1997; Jackson 1985).

The foregoing is by no means an exhaustive account of the different views regarding agricultural virtue or the values and ends that are taken to be the basis for their specification. For example, many people believe that human rights, equality, and justice with respect to farm workers/employees and food availability/security need to inform agricultural virtue as well (Gottlieb and Joshi 2010). Nevertheless, it should be clear how and why the answer to the question “which character traits are agricultural virtues?” depends upon the answer to the question “what are the appropriate goals or ends of agriculture?” which in turn depends upon the answer to the question “what good and values are involved in agriculture?”

It should be noted that the answer to these questions need not be the same for all agricultural activities. Different types of agriculture, in different places and under different socioeconomic and ecological conditions, might, quite appropriately, have different ends. Some agricultural

landscapes and practices are richer in cultural significance than are others; some are more central to communal relationships than are others; some have a greater capacity for contributing to food security than do others. This is not to claim that there are no character traits that are conducive to good agriculture generally. As discussed, cardinal virtues cut across all human activities, and there are elements of agricultural virtue that are appropriate to nearly anyone working to produce food. But these more general agricultural virtues are shaped by the particulars of agricultural forms, and their relative salience must be sensitive to socioeconomic and cultural context.

Consumptive Virtues

Just as there are character traits that are more conducive than others to good food *production*, there are character traits that are more conducive than others to good food *consumption* (which includes not only eating but also procurement and preparation). These character traits will hereafter be referred to as “*virtues of food consumption*” or just “*consumptive virtues*.”

As with all virtues, which character traits are consumptive virtues depends ultimately upon the appropriate ends, and so values and goods at stake, of the activity. Arguably, the most important end of food consumption is health. As a result, character traits that are conducive to healthful eating are, all other things being equal, more justified than are character traits that are conducive to eating behaviors that undermine health. It is for this reason that perhaps the most prominent consumptive virtue is temperance or self-control; and the most prominent vice is intemperance or gluttony. If we are not able to control or moderate our food consumption behaviors, then we are much more likely to eat (and drink) more than is healthy for us or to have a diet that does not meet our nutritional needs. (There are also many external factors that affect consumptive behaviors, such as availability and pricing of healthful foods, advertising and marketing, and nutrition education and information.) Moreover, having appropriate desires, emotions,

practical reasoning, and perspectives on food is crucial to realizing many of the prominent social and aesthetic ends of food preparation and consumption. For these reasons, most food ethics would converge on the central importance of temperance and self-control as consumptive virtues.

Of course, food preparation and consumption are not only about nutrition and health. They are also central to culture and tradition, to daily rituals and practices, to social and familial interaction, to identity and connection to place, and to security and power, for example. Moreover, both preparation and consumption can be skilled practices and even art forms. Due to the myriad roles that food plays in human life and culture and the myriad ways it connects us to other people and to social and ecological systems, there is an incredible diversity of virtues whose field encompasses at least some aspects of food preparation and consumption: aesthetic appreciation, gratitude, hospitableness, generosity, justice, compassion, patience, inventiveness, cultural sensitivity, openness, courage, courteousness, perseverance, inquisitiveness, efficiency, thriftiness, tolerance, reverence, and so on. It is not possible here to substantively discuss each of these character traits, but there are several virtues, in addition to temperance, that have become influential in the food ethics discourse in recent years. Some are the same as those that have become prominent (and are discussed above) within agricultural ethics: compassion toward nonhuman animals, ecological sensitivity regarding where our food comes from and how it is produced, thriftiness (i.e., avoiding profligacy) with respect to food waste, and justice with respect to treatment of food workers as well as food security/availability (Singer 1975; Gottlieb and Joshi 2010; Thompson 2010). Moreover, they are thought to be justified on the same sorts of grounds – for example, that nonhuman animals are directly morally considerable and that agricultural workers deserve full respect and rights.

Other character traits are more specific to food preparation and consumption. For example, there has been growing interest in developing simplicity and focality in the practice of food

consumption, cultivating more adventurousness and aesthetic appreciation in the tasting of food, increasing awareness of the context or situatedness of food production, and developing greater self-sufficiency and autonomy with respect to food security (Petrini 2004; Pollan 2007; Gottlieb and Joshi 2010). These consumptive dispositions track food movements – e.g., slow foods, exotic foods, and local foods – since both the movements and the virtues are taken to be justified by the same values. Of course, these virtues, like the movements, are not uncontroversial. They are justified only to the extent that they track well the goods and values within their fields. Simplicity and focality, for example, are thought to promote healthy eating, reduce the ecological impacts associated with one's diet, increase aesthetic and cultural appreciation of food, and promote beneficial social interactions around food. If those goals are well justified and the character traits are in fact conducive to accomplishing them, then they are justified as virtues to the extent that they do so.

As discussed above, the multidimensionality and prominence of food consumption in human life and culture give rise to a host of character traits being proposed as consumptive virtues. However, the fact that a character trait is regarded by some group of people to be a consumptive virtue does not make it a virtue. For any candidate consumptive virtue, the extent to which it is in fact a virtue depends upon both whether the ends at which it aims are appropriate and whether it is effective in realizing them. As with agricultural virtue, much work remains to be done on substantively specifying and evaluating which consumptive character traits are virtues and which are vices (Cafaro 2005; Wenz 2005; Sandler 2007).

Virtue and Right Action

The previous sections concerned what makes a character trait an agricultural virtue or a consumptive virtue and provided an overview of some of the character traits that are considered to be important agricultural or consumptive

virtues. This section and the next one concern the relationship between virtue and right action. Characterizing this relationship is another central project within virtue ethics.

As discussed above, character traits dispose people to respond to certain considerations in particular ways. People with different character traits over the same field respond differently (practically, affectively, and conatively) to the same types of considerations. Thus, there is a tight relationship between character and action. People with different character traits over the same field will behave differently within that field because of their different character traits.

For example, consider again the two conceptions of ecological sensitivity discussed above – one that is oriented around sustaining agricultural productivity and the other that is concerned with ecological conditions more generally. Agricultural activities cause, directly or indirectly, 15–20 % of global greenhouse gas emissions. This information will be considered quite differently by a farmer, farm manager, or farm owner, depending upon which type of ecological sensitivity she possesses. The narrowly focused disposition, the one concerned with ecological considerations insofar as they impact productivity, will be concerned about how global climate change might affect agricultural outputs in the future. But she is not likely to see it as her responsibility to reduce emissions, particularly if doing so would require adopting practices or market approaches that would decrease yields or profits. In contrast, a person disposed to a broader conception of ecological sensitivity is much more likely to consider this information as relevant to how yields ought to be produced, and she is likely to be more open to methods and markets that are associated with fewer greenhouse gas emissions. Thus, one way in which agricultural virtue is related to agricultural practice is that it disposes people to respond to considerations in agricultural contexts differently. A compassionate poultry farmer concerned about animal welfare is going to respond differently to the impacts of battery cages on chickens than is a person who is not moved by the suffering of animals and does not consider it to be morally significant.

Moreover, virtues are not merely one among several possible character traits. They are well-justified character traits, dispositions that involve responding well to goods and values in the world. As a result, virtue does not just dispose its possessor to respond differently to situations, but to respond rightly. Virtue is conducive to right action. Agricultural virtue is conducive to acting rightly in agricultural situations. Consumptive virtue is conducive to acting rightly in consumptive situations. Agricultural animals are morally considerable in that their suffering is ethically relevant, and so it is not just that the indifferent poultry farmer acts differently from the compassionate poultry farmer with respect to the use of battery cages. The compassionate poultry farmer acts rightly, whereas the indifferent one acts wrongly, and their different character traits explains (in part) why they do so.

In addition to disposing a person to perform right actions, virtue can help people to identify which actions are right. Sometimes people fail to do what is right, even when they know what the right thing to do is. Situation pressures can be strong and individual weakness (“weakness of the will”) can occur. However, at other times, people are insensitive to what matters in a situation, such that they simply are not able to see clearly what they ought to do. The indifferent poultry farmer does not see that battery cages are ethically problematic and then not care. They may not see them as problematic at all. They may not see what matters in the situation. This is an implication of the perspectival dimension of character traits. Thus, virtue not only disposes a person to do what they see as right; it also helps a person to see what is right.

Another way in which virtue is conducive to right action is through what is sometimes called the *integrating effect of virtue*. Often, right or virtuous activity is seen as involving significant sacrifice. For example, assume that it is right to aim for robustly ecologically sensitive agriculture. Doing so might require adopting more demanding or costly practices, or else might reduce yields. For these reasons, some people might not embrace it. From their perspective, it may look like something that just makes their

work more difficult and less profitable. However, the costs associated with ecologically sensitive agriculture are likely to look quite different from the perspective of a person who already is ecologically sensitive. For her, the additional work is not just one more thing they have to do; it is a crucial component of accomplishing her goals and realizing her values. It may well be part of her self-conception or central to her worldview. Virtue integrates the agent's values and perspectives with right action. This makes it more likely that she will do the right thing.

Yet another way that virtue is conducive to right action is that the sensitivity to values and context (i.e., wisdom) that is part of virtue is often crucial to determining the right thing to do in concrete situations. Many moral philosophers have argued that it is implausible and unreasonable to expect that there is some finite set of rules or principles that can be applied by any moral agent in any situation to determine the proper course of action (Hursthouse 1999). If they are correct, then the wisdom and sensitivity that are part of virtue (including agricultural and consumptive virtue) are in some situations indispensable for identifying right action. For example, it might help agents to see whether they ought to maintain their dietary commitments, such as not eating meat, in the face of important social considerations, such as being a guest for whom a special nonvegetarian meal has been prepared.

Virtue Theoretical Ethics

The relationships between virtue and right action discussed in the previous section focused on the many ways in which agricultural and consumptive virtues dispose an agent to do the right thing. However, it left open the normative framework (e.g., consequentialist, communitarian, or deontological) that provides the account of what the right thing to do is. Some ethicists have suggested that virtue ethics or virtue-oriented ethics may provide an alternative theoretical framework to other approaches to specifying right action. On such a view – hereafter the *virtue theoretic view* – the virtues would be the primary evaluative

concepts of the ethic, and right action would be explicated through them (Sandler 2007). That is, an action would be right not because it brings about good outcomes (consequentialism) or conforms with the moral law (deontology), but because it expresses or hits the target of virtue (Sandler 2007; Hursthouse 1999; Swanton 2003).

Virtue theoretic views suggest that decision making regarding what action or policy to pursue could be done by first identifying which virtues are operative and then determining what they would call for individually and overall. For example, in thinking about whether to include meat in one's diet, one would not look for the relevant moral law or run a utilitarian calculus. Instead, one would consider whether there is any meat available that is produced and procured in compassionate, just, and ecologically sensitive ways (assuming those are the operative virtues). Because right action is explicated through the virtues on this view, providing substantive accounts of agricultural and consumptive virtues and vices is crucial to generating the normative resources for agricultural or food ethics.

Explicitly virtue theoretical approaches to agricultural and food ethics are not the dominant approaches. Rights-based and consequentialist approaches are more common. This is evident in the prominent framing of many food issues as between welfare economics justifications for maximizing efficiency in food production and distribution versus rights-based justifications for the protection of farmers, workers, and community autonomy. But virtue theoretic considerations often arise within the alternative approaches. This frequently occurs in the context of addressing longitudinal large-scale collective action problems. Many agricultural issues – such as those associated with pollution, industrial animal agriculture, and global food security – arise from the cumulative unintended effects of an enormous number of seemingly inconsequential decisions, and they can only be addressed by a very large number of people making seemingly inconsequential contributions to doing so. A person who chooses to adopt a low-emission diet has effectively no impact on global climate change, given the scale of emissions. Similarly, a person

who chooses to adopt a non-factory farmed diet has effectively no impact on the industrial animal agricultural system. Given this problem of inconsequentialism (Sandler 2010; Jamieson 2007), ethicists very often appeal to the normative significance of character. For example, they will argue that it is a matter of avoiding complicity that a person should forego factory farmed meat if they think factory farming is ethically problematic, even if their doing so will have no discernible effect on the industrial animal agriculture system. Or they will argue that it is a matter of integrity that a person ought to unilaterally reduce their individual emissions, even though their doing will have no discernible effect on global climate change. Thus, even when a normative theory is not explicitly virtue theoretic, very often virtue theoretical considerations will be crucial to determining what constitutes right action.

Agriculture and Virtue Education

Thus far, the discussion has focused on what makes a character trait an agricultural or a consumptive virtue, as well as the relationship between agricultural and consumptive virtue and right action (i.e., the role of virtue within agricultural and food ethics). Another way that agriculture has been thought to be related to virtue is that agriculture is conducive to developing good character. That is, agriculture is an effective method of moral education in that it teaches such things as patience, diligence, inventiveness, self-reliance, cultural appreciation, simplicity, and other virtues.

Thomas Jefferson is among the Western thinkers most frequently cited in support of this view, owing to the following passages:

Those who labour in the earth are the chosen people of God, if ever he had a chosen people, in whose breasts he has made his peculiar deposit of substantial and genuine virtue. It is the focus in which he keeps alive that sacred fire, which otherwise might escape the face of the earth. Corruption of morals in the mass of cultivators is a phenomenon of which no age nor nation has furnished an example. (Jefferson 1984, p. 290.)

Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most

independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds. (Jefferson 1984, p. 818.)

These passages seem to suggest that there is a strong relationship between farming and good character (though it has been argued that when put in the context of the works in which they appear, their meaning is not so straightforward (Thompson 2000)). Similar sentiments can be found in the work and life of Henry David Thoreau (Thoreau 1951). However, not all historical thinkers have thought that farming was conducive to virtue. Aristotle thought that it was contrary to it:

The citizens must not lead the life of mechanics or tradesmen, for such a life is ignoble, and inimical to virtue. Neither must they be farmers, since leisure is necessary both for the development of virtue and the performance of political duties. (Aristotle 1900)

Whether or not certain agricultural activities or forms of life are conducive to promoting certain virtues is largely an empirical question. To show that some agricultural form of life is conducive to virtue, one would need to demonstrate, using appropriate social science methodologies, that those who engage in those practices or form of life develop the character traits at issue at a comparatively high rate and that they do so as a result of their engaging in those practices or form of life. (Whether the character traits being studied are in fact virtues depends on the considerations discussed earlier.) Jefferson provides no such evidence, and neither does Aristotle. In fact, there has been very little empirical study of the effectiveness of agriculture as moral education. Until such time as that research is done, claims about the relationship between agriculture and virtue should be taken for what they are – interesting but unsubstantiated speculations (though, in some cases, perhaps plausible ones).

Summary

Considerations related to character play a crucial role in ethics. Substantive specifications of which character traits are virtues tell us what sorts of people we should be. Virtue is crucial to

identifying and motivating right action. And virtue theoretical considerations often play a role in determining what we ought to do. In this entry each of these has been discussed as they relate to agricultural and food ethics. The many respects in which the character ethics of agriculture and food are underdeveloped have also been emphasized. Rigorous substantive specification of the character traits that constitute agricultural virtues and consumptive virtues is rare. The relationship between virtue and right action is often under appreciated. Claims about the relationship between agricultural practice and virtue education are often unsubstantiated. As a result, there remains a great deal of work to be done on virtue ethics within agricultural and food ethics.

Cross-References

- [Agricultural Ethics](#)
- [Animal Welfare: A Critical Examination of the Concept](#)
- [Environmental Ethics](#)
- [Environmental Justice and Food](#)
- [Gluttony](#)
- [Industrial Food Animal Production Ethics](#)
- [Slow Food](#)
- [Sustainability of Food Production and Consumption](#)

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War and Food

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Introduction

This entry covers the place of food in its relation with war under four headings:

- (I) Logistics – It was not till the nineteenth century that the term logistics came to designate organized administrative military science. For a military or semi-military organization, just as more generally, part of what this science is about is the management of the production, storage, maintenance, and the flow of supplies between some point of origin and the intended consumers of the supplies. The administrative management of supplies is, among other things, the management of food and its social relations. In the case of war, the logistics of the food needed by military forces gets complicated by the strategic and tactical weaponization of food. The section on logistics attends to the military importance of solving logistical problems regarding food, some solutions, and some of the legal constraints placed on the solutions.
- (II) Strategy and Tactics – The Ancient Greek *strategos* was the military commander who planned a war or a campaign, and ever since then the term strategy has been used to refer to a plan that given a war's or a military campaign's goals offers the guidelines for the achievement of these goals. Strategy is concerned with the linkages among the many engagements that have specific objectives and are guided by tactics. In the case of food and war, strategy and tactics together determine forms of the weaponization of food. The section on strategy and logistics reviews some of the ways in which food has been weaponized either strategically or tactically.
- (III) Gender – Women and men have had and continue to have different roles in relation to both food and war. The gendering of women's and men's relations to food in war is entwined with logistics and necessarily gets complicated by the weaponization of food by strategy and tactics. Because during wartime nonmilitary women though not nonmilitary men get assigned specific tasks in relation to food, some restructuring their peacetime roles and others mobilizing these roles, it is important to discuss food in war and its relation to gender. The section on gender analyzes some aspects of the triadic relation of gender-food-war.
- (IV) Normativity – The relation of war and food is normed culturally. It also continues to and should be framed by ethico-political normative constraints. Some of these constraints are customary, other legal, and many are still on the ethico-political

normative horizon that is created by variously motivated wish lists that are developed and adjusted by, among others, academic ethicists and political theorists, religious leaders, and human rights activists who struggle against the weaponization of food. The section on normativity examines some of the primary ways in which the relation of food and war is and could be normed ethico-politically.

The entry as a whole is semi-casuistic in methodology, relying on cases, not all paradigmatic, to illustrate and develop its main points. Its bibliography is selective, not only because comprehensiveness seems impossible in the case of food in/and war but also because this is an underthematized topic.

Logistics

The Third Amendment to the US Constitution, which came into effect on December 15, 1791, states:

No Soldier shall, in time of peace be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law.

The third amendment has never been explicated by the US Supreme Court and has surfaced constitutionally only in the discussions of privacy in *Griswold v. Connecticut* (1965) and that of limitations of executive power in *Youngstown Sheet & Tube Co. v. Sawyer* (1952). And yet, James Madison found it necessary to include it as one of his set of just 12 amendments to the constitution, all designed to create and safeguard specific civil and political freedoms. He did so because of colonists' objections to the English practice of involuntary billeting, which required colonists to provide English soldiers both lodging and food, and he relied on the traditions of English law, which protected English citizens from involuntary billeting. Complaints against involuntary billeting were among those the colonists voiced in the *Declaration of Independence* and have previously brought to the attention of the King of England, appealing to him as his English subjects whose rights were violated. These rights were guaranteed legally by the

1679 Anti-Quartering Act of the English Parliament that applied to private homes and public structures in times of peace and war alike and the 1689 English Bill of Rights, which includes a right protecting its bearers against involuntary billeting (Fields and Hardy 1991).

Involuntary billeting solved an important logistical problem that was understood quite early in the history of organized war. Thus, one finds Thucydides noting in *The Peloponnesian War* (431 BCE) that the shortage of necessary food supplies forces armies to retreat and to enter into agreements with their enemies that they would have preferred to avoid. Caesar adds to these observations in *The Gallic Wars* (58–50 BCE), noting the Roman custom of expecting the hosting of Roman troops from allies and conquered peoples alike and pointing out that a smart strategist plans for shortages, as he did in 54 BCE, when realizing that he was unable to quarter all the Roman legions under his command together for the winter and so split them and the burdens of their hosting among multiple areas and Gallic tribes.

Armies have to be sheltered, clothed, and fed during war, and standing armies have to be sheltered, clothed, and fed during peacetime as well. In the *Wealth of Nations* (1776), Adam Smith suggests that, however unproductive their labor, the services of a standing army composed of disciplined specialists are needed by modernizing/modern countries such as England of his time. Smith expects the provisioning of a standing army to be financed through a state's treasury and argues for local requisitioning of shelter and food for troops that are stationed at a distance, as in the case of Britain's colonies, including the future United States. Billeting, whether voluntary or not, can be done through formal requisition but shelter and especially clothing and food can also be acquired via pillage. Witnesses in England's colonies and elsewhere have claimed that sometimes it is quite impossible to distinguish between requisitioning and pillage.

Pillage was a common and accepted practice of war. Even after being outlawed, it has remained a common enough practice during violent conflict. The first legal document that

prohibits versions of pillage and is still taken seriously legally as part of the documents that together elaborate current International Humanitarian Law (IHL) is the 1863 Lieber Code – General Order No. 100 – which was prepared by Francis Lieber and issued by President Abraham Lincoln during the American Civil War. By the time of the Civil War, the United States had enough experience with the organization and provision of specific food rations to its soldiers and both the Union and the Confederate armies ate similar foods, though over time the rations of Confederate soldiers grew smaller. In addition, due to extensive logistical problems and bad planning, the Confederate army did not have enough food supplies in depots or available for requisitioning and its soldiers turned to foraging (Ballard 2004).

Strategy and Tactics

In his 1812 campaign against Russia, Napoleon Bonaparte discovered that an army in need of foraging can be starved into defeat. As part of their defensive strategy against the *Grand Armée*, the Russians instituted a scorched-earth policy so ruthless that they left nothing of value for the advancing Napoleonic forces, which were used to living off the land. The Russians learned from the Portuguese who 2 years earlier, in 1810, successfully used slash-and-burn tactics against Napoleon's army. Napoleon did not learn from his failure in Portugal, a fact that surprised Carl von Clausewitz. Clausewitz believed that Napoleon was a strategic genius who, unfortunately, was disposed to taking some unnecessary reckless risks. Among his comments about the 1812 campaign is this one: "it is undeniable that the lack of care over supplies was responsible for the unprecedented wastage of Napoleon's army on the advance and for its wholly calamitous retreat" (1984/1832, p. 339).

Clausewitz centered military marches as a means to decisive battles and, therefore, thought of food and other necessary supplies under logistics, though he was aware that the need to feed soldiers has been used tactically and strategically in defensive wars, as in Portugal and Russia, and in offensive wars as well. One of

the most successful offensive uses of an army's need (and the needs of the civilians on whose behalf it was fighting) for all kinds of supplies occurred almost 50 years after the failed Napoleonic campaign in Russia, when the Union relied on a tightening blockade to win its war against the Confederacy in the American Civil War. While prohibiting pillage and requiring humane treatment of civilians and enemy soldiers alike, the Lieber Code did not prohibit blockades. The Union's blockade strategy, known as the "Anaconda Plan," was developed by the General-in-Chief of the US Army Winfield Scott. The actual Union strategy put into action modified Scott's original plan to permit more military engagements than Scott wanted to pursue. Even in its modified version, the blockade, which basically starved the South, was key to the Union's success (Smith 2011).

In current warfare, blockades have become less important strategically since militaries have become better at logistics and soldiers in combat or at outposts that are removed from their bases are supplied with Meals Ready to Eat (MRE) that are well calibrated not only nutritionally but also in order to appeal to many tastes and meet diverse religious restrictions. But the blockade has remained a tool of war. Thus, for example, in 1982, the United Kingdom blockaded the Falkland Islands after Argentina occupied them during the Falkland War and Israel has blockaded Gaza since 2007. In addition, blockades have been used by the United Nation's Security Council, NATO, and similar coalitions.

Blockades are lawful under international law but only when governed by specific rules. Among the legal constraints on blockades is section 54 of *Protocol I of the Geneva Conventions*, which bans strategies and tactics that involve the destruction of food supplies or/and the means to grow food in an area of conflict. Section 54 states:

Starvation of civilians as a method of warfare is prohibited. It is prohibited to attack, destroy, remove, or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies, and irrigation works, for the specific purpose of denying them for their

sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive.

Gender

International law's protection of civilians against starvation, whether in the case of blockades or the use of scorched-earth policies or slash-and-burn tactics, may have been agreed to because of sexism, which in times of war and in warlike violent conflicts is expressed in gendered treatments of soldiers and civilians. Indeed, even the distinction between "soldiers" and "civilians" tends to be gendered (Carpenter 2006). One can find a representation of the gendering of war already in the *Iliad* and *Odyssey* (800 BCE) with their reference to a war fought by men over access to one woman – Helen of Troy – while another woman, Penelope, waits patiently and faithfully for her husband, though she too is the subject of an intense competition for access.

Both Helen and Penelope were confined to and by Greek domesticity but they were not expected, unlike women in World War I and World War II England and the United States, for example, to reconceive the home as a "front" and the feeding of their families as a "contribution to the war effort." War had to become total war in its twentieth-century version and involve the mobilization of the whole population in order to reshape daily life and deploy women to accomplish much of the reshaping. The totalizing of war in England during World War I brought with it the organization of the Land Army, which started its activities in 1915. Its members worked as field laborers growing food mostly on land confiscated by the British Government under the Defence of the Realm Act (DORA) of 1914.

By 1917, about 260,000 women worked as field laborers in England and the United States instituted its own Women's Land Army, both of which were remobilized in World War II (Carpenter 2003; Kramer 2008). Wartime women field laborers, like their much better known counterparts, wartime women factory workers, filled positions otherwise held by men. At home, in the domestic private sphere, as well as in in-between

spaces of public food production, such as victory gardens, or food preparation and service, such as in charity dinners, women continued to perform along the lines dictated by their gender roles, though in a manner reconfigured through state interventions.

In both world wars, among the serious supply problems was food, resulting in inflationary prices, which exasperated class divisions and increased social instability. Rationing, less successful in World War I than in World War II, was not enough, especially since it was accompanied by an informal market in rationed goods and rationing cards that undermined some of the intentions for rationing. States, therefore, turned to women in their domestic roles to solve the complex set of food shortages and related social problems they faced. They addressed women as wartime homemakers and told them that their "real and most important battlefield was the kitchen. There women could – and should – fight the war and prove their patriotism by cooking and serving the right kind of foods in the right kind of ways" (Bentley 1998, p. 31).

For mainstream United States, due to British influences that can be traced back to colonial times, the "right foods" and the "right way" defined dinner as consisting of a large portion of a high-status food, such as meat, served together with two complementary foods, such as bread and vegetables. During World War II, the US government successfully changed the mainstream understanding of the "right foods" and the "right way" by introducing the forerunner of the 2011 US Department of Agriculture "plate" and its predecessor, the 1992 "pyramid" – the "basic seven." An interesting and quite significant difference between the "basic seven" and the 1956 simplified version of "basic four" is that meat features in the fifth place among the "basic seven" and in the first place among the "basic four." Indeed, "meat" is the first word one reads on the "basic four" list, calling attention to both meat's recovery as a high-status food and the United States' ability to sustain its prosperity while the Cold War was going on.

The "basic seven" offered a list of the "right foods" but just eating the foods on the list did not

exhaust the meaning of eating the “right way.” The “basic seven” had to be eaten in the “right quantities,” as defined by gender, age, and even occupation differentiated caloric needs. In addition, their “right production” was expected to be quite economical. Home food production in the form of gardening and canning, though labor intensive and in many cases an additional burden for women, many of whom now also worked outside the home, defined the “right ways to produce food,” with canning adding the benefit of saving foods for seasons during which gardening is impractical.

Normativity

“Right” is a normative term. In the United States, in the case of the relation of gender, food, and war during World War II, the set of criteria used to distinguish between the “right” and “wrong” foods, the “right” and “wrong” quantities for their consumption, and the “right” and “wrong” modes of their production were also used to distinguish between the “right” and “wrong” ways to perform gender, thereby norming gender. As wartime criteria they had another use – norming patriotism by distinguishing “patriots” from those who failed their patriotic obligations, a failure that was usually attributed to the moral character flaw of *akrasia* or weak-will (Veit 2007).

Most of the norms that appear to seamlessly connect gender, patriotism, and food are cultural. Some are legal. Exchanges on the informal market in rationed goods and rationing cards during World War II were prohibited and punishable by law, adding a clear negative incentive to the shaping of conduct by new cultural norms. In international society, law is among the most important instruments norming engagements in war. International law prohibits all but for defensive wars, thereby prohibiting wars whose goal is the acquisition of food by force, though it is among the more usual kind of resource wars that are increasingly caused by the growing needs that are coproduced by capitalist globalization and climate change. The alternative to war is a more equitable division of access to the means of food production and food itself,

among the goals of global justice, a realizable though at present utopian normative ideal because thus far it has not mobilized enough institutional support.

The prohibition on food-as-resource wars is not only legal but also ethico-political and falls under the *jus ad bellum* branch of the just war theoretical framework, which is concerned with the normative justification of and thus normative constraints on engagements in war. Like current international law, current *jus ad bellum* principles permit only defensive wars. If one could construe the denial of food or access to food as a form of aggression, then such a denial could serve as a basis for a claim to have a just cause that justifies a serious consideration of an attempt to secure food by violent means. But, a just cause is only a necessary and not a sufficient condition for an engagement in war, and in the case of food, its force as a condition is mitigated by the existence of international aid. Recent warnings by the Food and Agriculture Organization of the United Nations, however, do point out that food insecurity is unacceptably high, especially in countries that experience protracted violent crisis that compromises the supply of food, food production, and access to food. Food insecurity, then, becomes a cause of and exacerbates further violence.

Food, even if primarily a resource that is required to address basic human needs, is rarely merely a simple means. Food is a significant part of any culture and at least some foods can count as a “cultural property.” As such they ought to be protected by the 1954 *Convention for the Protection of Cultural Property in the Event of Armed Conflict*. But, the convention, which mentions, books, artworks, and archaeological sites, does not mention any foods. And yet, the French, for example, consider their wines to be a national cultural treasure. The Nazi German elite concurred with this judgment. As a result, starting in June 1940, the Nazis transferred French wines to Germany by direct looting (as in the stealing of 80,000 bottles from the cellars of Paris’s La Tour d’Argent), Nazi takeovers of famous wine production houses (such as Moët and Chandon in the Champagne region, which began business in 1743 and was known for supplying Europe’s

royalty, aristocracy, and its wealthy families), or the coercive reduction of the price of all the wines the Nazis purchased through the monopolization of demand, the offer of under market value, and the punishment of noncooperation with fines, prison, as well as deportation to labor and death camps (Kladstrup and Kladstrup 2001).

The protection of food-as-cultural-property falls both outside existing international law and outside current just war theory. Just war theory is basically minimalist in its construction of human needs. To the extent that food, its production, and access to it are protected within the theory, it is by the macro- and micro-versions of the principle of proportionality. Both versions of the proportionality principle set normative constraints on the harms and damages of war and require engaging in cost-benefit analyses that weigh harms and damages against specified goods. The principle of macro-proportionality is a *jus ad bellum* principle that requires a prediction about the overall harms and damages and overall good that are expected from a war. The principle of micro-proportionality is a *jus in bello* principle that requires predictions regarding the harms and damages and goods that are expected from specific acts of violence undertaken in a war. Because a consequentialist calculus is used in the application of both versions of the principles of proportionality, they can protect food only to a limited extent. The logic of such a calculus necessarily permits some harms and damages in general and will permit some harms and damages that are caused by the weaponization of food. This is why under certain conditions, attacking food supplies, fields, food factories, roads that are used to transport food, and the like, may all be ethico-politically permissible.

The *jus in bello* principle of discrimination, which requires that distinctions be drawn between combatants and noncombatants, can be used to protect food for noncombatants. The principle identifies who is and who is not liable to intentional attack. Its various interpretations assume that noncombatants are not liable to intentional attack. One could argue that an intentional attack on food is an intentional attack on the people who need the food that is attacked.

If noncombatants are not liable to attack, then the food of noncombatants ought to be protected (Thomas 2005).

The *jus post bellum* branch of just war theory, which is concerned with postwar justice, can contribute to the protection of food, if and only if one allows considerations of the postwar goals of a just war to play a decisive role in the case of both *jus ad bellum* and *jus in bello*. This is Immanuel Kant's approach in *Perpetual Peace* (1795). According to Kant, peace is the only goal of a just war that has intrinsic value and so constrains even the engagement in defensive wars, let alone actions during a war, demanding that both not undermine the possibility of postwar peace. Kant's argument could be used to protect food at least insofar as its destruction might undermine peace. This argument is, however, weak and a different Kantian idea, that of human dignity and the normative demand to not undermine it, can be mobilized to create much stronger protections of food. Such an argument might actually be launched not only to protect food-as-resource but also food-as-cultural-property, though in order to argue that food must be protected as cultural property, one will have to mobilize communitarian assumptions about the importance of group membership to personal identity and therefore to one's sense of one's own dignity.

A Kantian sort of argument could be advanced when human rights are mobilized to protect food. But most human rights arguments for the protection of food are much weaker than a Kantian argument that centers human dignity because they treat food merely as satisfying a basic need. While human rights arguments might be weaker in an ideal sense, in practice they are the stronger ones because a basic right to food in the case of armed conflict is protected by international law (Pejic 2001). Under the 1998 *Rome Statute* that established the International Criminal Court, intentionally starving civilian populations is a crime of war. And according to a complex body of international law, the doctrine of double effect, which is used to excuse some unintended consequences, cannot be easily invoked in the case of food. The law requires

that if food or access to food is destroyed, relief agencies be allowed to distribute the food that people need. From the perspective of concern with human dignity, the problem of transforming an independent population into one dependent on relief agencies for the fulfillment of its basic needs is extensive. This has been recognized by the United Nations which has started to mix its normative terms in order to be able to act on Jean Ziegler's claim (n.d.):

The right to food is a human right. It protects the right of all human beings to live in dignity, free from hunger, food insecurity and malnutrition. The right to food is not about charity, but about ensuring that all people have the capacity to feed themselves in dignity.

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Waste and Food

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Synonyms

Feasting; Food loss; Food waste; Garbage; Garden of Eden; John Locke

Introduction

The necessity of food for human survival grounds our prudential and our ethical interest in its not going to waste. Given our undeniable need for the nutrition food provides, it seems both irrational and irresponsible to fail to make good use of it before it perishes.

However, such certainty about our need for food hardly makes our relation to it, or to the wasting of it, clear and uncomplicated. As feasts, for example, remind us, the significance of food in our lives is not limited to the satisfaction of basic biological need. And when food is not being used simply or only to still hunger, questions about whether it is being wasted do not have obvious answers. Moreover, "waste" has several meanings. The seventeenth-century English philosopher John Locke, for example, assumed as a matter of course that both letting food spoil and failing to cultivate the earth in order to grow food constitute waste. The fact that the original inhabitants of the "waste" lands in the Americas to whom Locke was referring might well have disagreed with his latter claim reveals yet another

important feature of the concept of waste: its deployment in normative judgments.

The many uses of food, the several senses of “waste,” and the battle over norms that the invocation of “waste” often reflects have to be acknowledged in any discussion of what constitutes food waste. As urgent are current concerns about food waste in the global context of famine, starvation, and food insecurity, these matters also should be seen in light of humanity’s long history of reflection on the significance of food and the meanings of “waste.” Before focusing, then, on contemporary sources of food waste, we shall describe some moments in that rich and complex history: John Milton’s proposal, in his account of the Book of Genesis, that food spoilage emerged only when humanity fell from a state of innocence; the prevention of food waste as the foundation for property rights, in John Locke’s *Second Treatise of Government*; and the importance of food waste in feasts.

Rotting Apples and the Fall from Innocence

Forth reaching to the fruit, she plucked, she ate.
(Milton 1991, Book IX, 781).

Many of the accounts humans have given of their relation to food suggest that it is hard for us to countenance the possibility that the world into which we are born would not be adequate for our sustenance as long as we think and behave in ways appropriate to our place in that world. One such influential account is John Milton’s expansive treatment of the story of Adam and Eve in the Garden of Eden in *Paradise Lost* (Milton 1991).

On Milton’s rendering of *Genesis*, the Paradise in which God placed Adam and Eve was a land of plenty. Food was abundant and delicious. Neither scarcity nor anxious fear of it threatened. While the Garden needed some tending, the trees some lopping and pruning, the labor involved was not particularly arduous, just taxing enough to whet the appetite.

But if such abundance ruled out scarcity, did it at the same time create waste? Wasn’t there more

than enough food for Adam and Eve? If so, was not such excess wasteful?

In *Paradise Lost*, the very idea of waste in the Garden does not arise until the serpent successfully tempts Eve to eat the fruit of the forbidden tree. The reason given for the lack of concern about waste is not, as one might reasonably hypothesize, that any food unneeded and uneaten by Adam and Eve was devoured by animals or turned into compost. The Garden was not waste-free on account of some fine economy of nature according to which one species’ leavings readily became another species’ takings. Rather, it is as if God’s fruits have a kind of built-in preservative:

For many are the trees of God that grow
In Paradise, and various, yet unknown
To us, in *such abundance lies our choice*,
As leaves a greater store of fruit untouched,
Still hanging incorruptible, till men
Grow up to their provision, and more hands
Help to disburden nature of her birth.
(Milton 1991, Book IX, 618–624 [emphasis added]).

There is glorious excess, and yet nothing spoils. Or at least so it was until Eve allowed herself to be beguiled by the serpent. Addressing the tree of knowledge, she declares that it makes no sense to let “thy fair fruit. . .hang, as to no end created”. Only after emboldened by the serpent, that “fittest imp of fraud”, did it occur to her that surely the tree with its fruit was created to be used and surely its use is to be eaten. It would be wasteful not to treat it accordingly. Eve will “ease” its “fertile burden” (Milton 1991, Book IX, 798–799; Book IX, 89; Book IX, 801).

Eve, and then Adam, the story goes, disobeyed God’s explicit instruction not to eat of the tree of knowledge. In *Paradise Lost*, there is no waste before these acts of disobedience (Gee 2010). Eve and Adam’s failure brings about material conditions in which formerly “incorruptible” fruit now suffers decay and goes to waste unused. This change in nature is accompanied by the emergence of human claims to know waste when they see it: surely unused fruit has a purpose that goes unfulfilled unless it is eaten. But such judgment is beyond the ken and outside the jurisdiction of humanity. Humans are not in a position to know why things were created, what

purpose they might serve, and their thinking they know the proper use of that apple is instrumental to their disobedience.

Milton's gloss on *Genesis* posits that Eve and Adam's disobedience consisted not merely in choosing to eat from the forbidden tree but in assuming the authority to judge what is waste and what is not. At the same time, God does not disagree with the human assessment that Adam and Eve and their progeny were condemned to live in what in comparison with Paradise is a wasteland. The "verdure" is "spoiled", the cattle die "of rot and murrain [infectious disease]" (Milton 1991, Book XI, 832; Book XII, 179).

John Milton invites us to think of Paradise – the mythical home for the Old Testament's first man and woman – as a place in which food is not only not scarce but magnificently bounteous. And yet in all that excess there is no waste: fruit does not spoil however long it is on the tree. But once Adam and Eve thought that there was an unrealized potential that should not go to waste – what might be gained from eating of the tree of knowledge – the world became a wasteland, and the threat of scarcity entered into human life.

Food Waste and Property Rights

In Milton's rendition of *Genesis*, food waste has a striking role in the history of the relation between humanity and God. In John Locke's *Second Treatise of Government* (Locke 1980), food waste is crucial to the foundation of property rights.

The natural world in which Locke locates humanity is God-given but also marked by signs of our expulsion from Paradise. God gave us this world with all its rich floral and faunal resources and blessed us with the capacity to reason, which allows us "to make use of [the world] to the best advantage of life, and convenience" (Locke 1980, p. 18). But this world is, after all, postlapsarian: we have to labor much harder and longer than did the still-innocent Adam and Eve, and earth's apples are no longer "incorruptible." Since this world was given to us "in common" (Locke 1980, p. 18), we all have a right to its resources. But there are both conditions for and limits on the

exercise of this right. Your labor entitles you to a portion of what is in given in common. Go forth and pluck, gather, hunt, and fish. But not to your heart's content. For there are limits to what a person can make his or hers: God gave us all this plenty for us to "enjoy," that is, to "make use of to any advantage of life before it spoils" (Locke 1980, p. 20). "Nothing was made by God for man to spoil or destroy" (Locke 1980, p. 21).

It is not just the edible items humans come across in nature that can be of use to them in obtaining sustenance. There is also the land. And indeed by the time Locke was writing the *Second Treatise*, toward the end of the seventeenth century, the "*chief matter of property*" of English denizens was "now not the fruits of the earth, and the beasts that subsist on it, but *the earth itself*" (Locke 1980, p. 21). Man and woman are no less entitled, indeed no less bound, to make use of the land than they are to gather what nature offers independently of their digging into the soil. "*As much land* as a man tills, plants, improves, cultivates, and can use the product of, so much is his property" (Locke 1980, p. 21, emphasis in the original). But there are limits here, too, on appropriating common land: as long as one leaves "as much" and "as good" land as existed before the appropriation (Locke 1980, p. 21), it's as if one has taken "nothing at all" (Locke 1980, p. 21).

Cultivating land properly improves its value. Appropriators actually "increase the common stock of mankind" (Locke 1980, p. 23): a single acre of cultivated land could easily produce many times the "provisions" of "an acre of land of an equal richness lying waste in common" (Locke 1980, p. 23). If there is waste in allowing food to rot, meat to putrefy, so too there is waste when land that might be cultivated goes unfurrowed and unplanted. Indeed "we shall find the benefit of it amount to little more than nothing" (Locke 1980, p. 26). Think about bread: it is only because of the tremendous labor that has gone into the cultivation of land, the invention of tools, and the distribution of the final product that it is available to us as bread. "...nature and the earth furnished only the almost worthless materials" (Locke 1980, p. 27). They may be "materials of plenty"

(Locke 1980, p. 25), but their potential is not realized apart from human labor. Our capacity to toil is thus implicitly a greater gift to us from God than what God provides independently of our labor.

In Locke's post-Edenic world, God has provided bounteously for humanity, but the waste of food is an ever-present possibility that humans must attend to sedulously. The occurrence of waste in nature – food waste in particular – is clear evidence that a person has mismanaged and misused God's plenty. You are welcome to pluck apples from a tree and to kill a deer you come across in the woods in order to sustain your life. But if you allow the apples to spoil or let the animal flesh putrefy, you have abused your right to the riches God has provided. You also are not only welcome but commanded by God "to subdue the earth, i.e., improve it for the benefit of life" (Locke 1980, p. 21), not leave it in a state of waste, i.e., uncultivated.

There are then according to Locke at least two senses in which food waste is to be understood: (1) as the loss, the draining away, of the use value of existing foodstuffs (e.g., rotten apples, stinking carcasses) and (2) as the untapped, unrealized potential of land to be cultivated in order to create foodstuffs, something Locke espied across the Atlantic:

for I ask, whether in the wild woods and uncultivated waste of *America*, left to nature, without any improvement, tillage or husbandry, a thousand acres yield the needy and wretched inhabitants as many conveniences of life, as ten acres of equally fertile land do in *Devonshire*, where they are well cultivated? (Locke 1980, p. 24; emphasis in the original).

Locke here adopts the very view about waste that was Eve's undoing: Eve wondered why God would create an apple that would go unused; Locke takes it as a given that surely God wants us to see land that might be cultivated as lying in waste should it not be tilled. Of what value can such land be if it is not used to create food? "...land that is left wholly to nature, that hath no improvement of pasturage, tillage, or planting, is called, as indeed it is, *waste*" (Locke 1980, p. 26).

This understanding of food waste is central to a Lockean-inspired view according to which settlers from elsewhere had the right, in fact the duty, to take possession of uncultivated lands in America. According to Locke, the only or in any event the far superior use of land is to cultivate it. He implicitly rules out the possibility that any other use of the land, any other value it could have, is irrelevant – for example, the Miltonic idea that God's glory might be revealed in bounteous excess, or the notion that hunting and gathering are adequate and respectful ways of sustaining life.

So in the case of both Milton and Locke, we can see that because (a) food has many uses beyond its role in sustaining human life and (b) "waste" is a normative term, there are bound to be differences over whether a particular use of food is wasteful, along with struggles over whose view ought to prevail. In Milton, the idea is broached that humans fail to honor the splendor, power, and authority of God when they insist that they know what is useful for humans and what is not; in Locke, there is the claim that it's precisely when humans fail to mine the world for what is useful to humanity that they go against God's will and that others have the right, in fact the obligation, to go forth and cultivate. In *Paradise Lost*, we are said to not be not good judges of what constitutes waste; in *The Second Treatise*, we are instructed that the capacity for reason that God gave humans enables us, indeed requires us, to judge what is wasteful and what is not.

Feasts

Food waste, then, has been of concern not only for humanitarians, environmentalists, or public health experts. Influential figures in western intellectual life have made the topic of food waste central to attempts to understand the relation between humans and the gods they believe in, as well as to lay out the grounds on which property rights are to be established. In the meantime, humanity, in all its motley glory and across time and culture, has given the wasting of food a central role in celebrating life, in glaring back

defiantly into the face of scarcity, and in establishing or maintaining social relations.

Feasts have a prominent place in human history. Coming in great variety, they can be religious, irreligious, or nonreligious in intent; they may be designed by and for royalty or peasantry; sometimes they function to confirm existing social hierarchies, other times to temporarily dislodge them (or do the former by doing the latter); they might sanctify order or celebrate disorder. But among the basic elements of feasts, whatever their mood and aim, are food and drink. And, if at all possible, the victuals are to be as plentiful and delicious as possible, even at what may be extraordinary expense to individual or community creating them (Dietler 2001, pp. 82, 96). The specialness of the food marks the specialness of the occasion: feasts typically are offered to show honor, respect, or gratitude for some person or deity or to underscore the importance of an event such as a birth, a death, a wedding, and a victory. The provision and intake of more than enough food and drink is called for.

Feasts thus are likely to involve waste in a number of ways: the very idea of a feast tends to suggest that there will be not only enough but a prodigious amount for all the participants. While the excess might be given to animals or humans not among the feasters (e.g., a fourteenth-century English court might include an “almoner” among whose tasks was to direct leftovers from the feast to the poor (Strong 2003, p. 91)), it might also be left to rot. (The post-Thanksgiving behavior of many North Americans has centuries-old antecedents). Having enough to waste is part of the point of the feast. That is among the reasons why a Luo family in west Kenya, for example, might exhaust its supply of food, knowing that some of it will quickly become garbage, rather than keep themselves from going through a period of near starvation (Dietler 2001, p. 96), or why an about-to-be-married couple in the USA put themselves in hock for a splendid and heavily garbage-producing feast for family and friends.

Though the food in such feasts is going to waste in the sense of spoiling instead of being consumed, it is not going to waste at all in another

sense, for the provision of the food and the attendant waste are crucial to whatever social or political work the feast performs. Thorstein Veblen (Veblen 2009) reminded us vividly of what feast-makers and students of the *potlatch* have always known: conspicuously and wastefully consuming goods – including food – can be a fine means of creating or maintaining your status.

At the same time, perhaps we should be careful about assuming that what appears to be wasteful behavior – such as the excessive and lavish provision of food at a potlatch feast – must be serving *some* kind of useful function. Recently, Samuel Martínez, invoking George Bataille, has raised doubts about the appropriateness of “explaining all behavior in terms of marginal utility or social functions”: after all, isn’t “the potlatch’s main source of fascination, the symbolic banishment of necessity and creation of a momentary illusion of inexhaustible wealth” (Martínez 2010, p. 612)? Is what seems to be wasteful excess of food something to be rued or an invitation to explore the significance and reach of what Martínez suggests is nonrational but not irrational behavior?

One can take Martínez’s suggestion under advisement without having to treat all instances of food waste as exuberant celebrations of nonutilitarian expenditure. But perhaps sometimes our attempts to interpret and redeem behavior that appears wasteful, by proposing an end or use in terms of which the behavior is not wasteful, stand in the way of understanding such behavior. Maybe sometimes wasting food is just wasting food, perhaps an expression of defiance in a world far distant from the Paradise of Adam and Eve.

Food Waste: Current Assessments

The United Nations Food and Agricultural Organization estimates that one third of the amount of food intended for human consumption ends up being wasted or lost (FAO Media Centre 2011). Not surprisingly, the effects of such waste are not experienced uniformly. A portrait of food distribution across the globe today strongly suggests something like feasts for some and famine or food insecurity for others. Food waste and food loss

are important factors in the creation and maintenance of such asymmetry. Tristram Stuart among others has argued that the food waste produced by rich countries such as the USA and Britain could feed almost all those in the world not receiving adequate nourishment (Stuart 2009, p. xvi; FAO Media Centre 2011) and that a reduction in food surplus in wealthy countries, in conjunction with a reduction of postharvest losses in relatively poor countries, would substantially save the supply of food around the globe (Stuart 2009, p. 193). Moreover, given the multiple resources needed to produce food, its waste and loss also threaten the sustainability of land and water and have implications for climate change.

Consumers are by no means the only or the greatest wasters of food. No doubt in places such as the USA and England, palpable evidence of great quantities of food gone to waste surely is visible in household refrigerators and the municipal landfills to which the trash is hauled, as well as on the plates of restaurant patrons. But tracking down records of how much food is wasted by farmers, food corporations, restaurants, caterers, and supermarkets is not easy (Stuart 2009, pp. xxi, 11). Unlike the growing number of conscientious citizens keeping blogs about how much food waste and other trash they create and dispose of, these major creators of food waste are reluctant to compile data about their waste, and on the whole their governments have not been eager to require them to do so.

Food is a heavily marketed commodity, and supermarkets in particular are continuously trying to create and also reflect market standards for the desirability and acceptability of food. Just because farmers or fishers produce something edible and nutritious doesn't mean it will be attractive to those who supply food markets. If markets insist that people won't buy forked carrots, slightly bruised apples, or knobby cucumbers, then tough luck for farmers, who by some estimates can lose up to a third of a year's harvest (Stuart 2009, p. 102). Farmers also may overproduce in order to insure that they match what they have contracted to supply. All such excess food might be plowed back into the land,

but to deny it is going to waste on such grounds is to ignore the enormous cost of land, water, labor, and capital involved in producing it to begin with.

Once the food that survives the standards gets on market shelves, there is no guarantee that it won't end up in the dumpsters behind the store. Among the many factors conspiring to produce such waste are the mostly meaningless "sell by," "use by," "best until" tags; a presumed customer desire to see shelves full of the freshest and prettiest stuff; fear that selling slightly "old" stuff, or even making sure it goes to survival centers, would inspire customers to wait for the bargains or go to the centers.

Attitudes toward food waste can differ rather starkly across cultures. Unlike the majority Han Chinese, for whom hospitality includes making sure to offer more food than can possibly be eaten by guests or patrons, Muslim Uighurs in China take pride in preventing waste in the preparation and distribution of food (Stuart 2009, pp. 199–201). A culture's attitudes can vary over time: countries such as the USA and Britain certainly have shown in wartime that they can produce anti-food-waste campaigns and practices (Stuart 2009, pp. 234 ff.). But developed countries seem to have evolved a food supply system that in effect requires waste, and they tolerate, indeed seem to encourage, its acceptance, or at least are quite ready and willing to obscure its scope.

There is, however, growing recognition of the extent of food waste and promises of earnest effort to diminish it at all points along the production and consumption lines. For example, the European Commission has published a multi-language 10-step program for household waste reduction (European Commission 2012). The European Parliament, building on statistics provided by the FAO, has issued a report that among other things

Considers that, in order to reduce food waste as much as possible, it is necessary to involve all participants in the food supply chain and to target the various causes of waste sector by sector; calls on the Commission, therefore, to make an analysis of the whole food chain in order to identify in which food sectors food waste is occurring most, and which solutions can be used to prevent food waste. (European Parliament 2011).

Summary

This necessarily brief survey of reflections on the moral significance of food waste is but a small, preliminary, and provincial taste of the topic, an amuse-bouche. According to John Milton, the very inconceivability of food waste was part of the plenteousness in the Garden of Eden. We would not know of such waste had it not been for Adam and Eve's fateful disobedience. John Locke's notion of the wrongness of food waste was central to attempts to justify European settlers' appropriation of land in the Americas. Feasts, in all their cultural and historical variety, are particularly vivid reminders of the function of food waste in sustaining social relations.

Questions about the bounteousness of the earth, the capacity or willingness of humans to make wise and fair use of it, and the meaning of feasts in the face of famine have not disappeared. Among the starkest and most immediate of the ethical concerns raised by food waste in the context of the early twenty-first-century global economy is the relation between the massive waste of food and widespread but preventable famine, food insecurity, and starvation.

Cross-References

- [African Food Security Urban Network \(AFSUN\)](#)
- [Corporate Farms](#)
- [Food Security](#)
- [Hospitality and Food](#)

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Water, Food, and Agriculture

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Introduction

Access to clean freshwater is becoming increasingly difficult for many people around the globe. The problem of water scarcity will require both local and global remedies and the implementation of permanent, long-term solutions. Ethical issues arise at the levels of both the crisis and its solutions. They also do not result only from the problem of water scarcity. All water use has impacts on humans and the environment that require ethical consideration. The first section of this entry summarizes the water crisis and reviews generally the ethical issues it entails. The second section briefly discusses several proposed solutions and their ethical implications. The third section examines the idea that there is a human right to water. The fourth and final section considers different water management paradigms and their approach to the ethical issues of water use.

The Water Crisis

Water is a truly renewable resource. The water humans consume today is the same water that was consumed by their biological ancestors over billions of years. Where the water has been located, and in what forms, has changed over these years, and it will continue to change, possibly in ways that are detrimental to human and other forms of life. Presently, freshwater makes up only 2.5 % of the world's water. Almost 70 % of that water is frozen in glaciers; 30 % of it is located underground in aquifers (groundwater); this leaves a little more than 1 % in permafrost, lakes, rivers, biological organisms, and the atmosphere.

Despite these percentages, the total amount of water available for direct consumption or use in agriculture and industry is abundant, but it is not equally distributed around the globe. Around two-thirds of the world's population live in places that receive just one-fourth of the annual precipitation, around four billion people (Pennington and Cech 2010, p. 2). Pressure on water sources is increasing due to population and economic growth, climate change, and poor management of water resources and services.

What is an impending water crisis for most is a present reality for many others. Approximately 1.1 billion people do not have access to clean drinking water. The water they can access requires great expenditures of time and energy in order to retrieve. This task usually falls upon women and children, and it can occupy up to 4 hours of their day. The result is that adult women are prevented from engaging in more productive labor and children lose those hours that could have been spent in school (or simply enjoying childhood). Both factors are forestalling economic development in water-poor regions. It is estimated that in sub-Saharan Africa, 5 % of GDP, or \$28.4 billion, is lost annually because of inadequate water and sanitation services. People living in poverty in water-poor regions – most of whom only survive on less than \$2 a day – bear most of these costs (United Nations Development Programme 2006, p. 6).

Water scarcity is a function of both quantity and quality. Water pollutants – naturally

occurring and anthropogenic – include microbial pathogens, sediment, chemical toxic substances, heavy metals, and excess nutrients like nitrogen and phosphorous. Some of these pollutants can directly affect sources of drinking water, for example, by entering groundwater. Others can have deleterious effects on the environment, some of which can also result in decreased water quality, for example, by damaging wetlands that act as natural filtration systems for water. In water-poor regions, water scarcity is typically exacerbated by inadequate sanitation, which can introduce microbial and other pollutants into water sources. 2.6 billion people worldwide do not have access to basic sanitation (UNESCO 2012, p. 65). Approximately 80 % of the world's wastewater flows untreated into rivers, lakes, and other sources of drinking water (with higher percentages in developing countries). The world's rapidly growing cities are major point-source polluters. For example, Jakarta, a city of nine million, treats less than 3 % of its wastewater (UNESCO 2012, p. 66). An estimated three million people – mostly children – die annually in developing countries from waterborne illnesses (United Nations Environment Programme 2007, p. 13). Half of all the people in these countries at any time are suffering from illnesses caused by deficiencies in sanitation and water quality (United Nations Development Programme 2006, p. 6).

Water for domestic use, such as for drinking, makes up only a small portion of water use. Worldwide, 70 % of water use is for agriculture (it is closer to 80 % in developing countries, with industry and agriculture consuming more equal amounts of water in developed nations, and domestic use still the smaller percentage) (United Nations Development Programme 2006, p. 138). Increased agricultural and industrial uses of water are making the highest demands on water resources. Economic growth, and not only a growing world population, is responsible for the increasing demand on water resources. Whereas over the last hundred years the population has increased fourfold, the demand for water has increased sevenfold (United Nations Development Programme 2006, p. 137). An improving

worldwide economy is resulting in a greater demand for water-intensive food products, such as meat and dairy (e.g., it takes 3,500 L of water to produce 1 kg of rice, but it takes 15,000 L of water to produce 1 kg of beef). Industrial demands for water also increase with an improving economy, including energy production, which relies heavily on water. Agriculture and industry are also major contributors to water-source pollution, which can impact water quality.

Some of these increasing water demands caused by economic growth are met by transfers in “virtual water,” which are products that consume water at the place from which they are exported. For example, developed and BRIC (Brazil, Russia, India, and China) nations are buying farmland in regions like Africa to produce agricultural products for import. While this practice is relieving water demands in the importer nation, it is increasing pressure in the water-poor regions which tend to have less efficient management and weaker laws regarding water use (UNESCO 2012, p. 50).

Climate change is also having an effect on water resources. Decreased precipitation in certain regions and increased evaporation due to global warming are contributing to the depletion of surface and groundwater. While the melting of glaciers will increase river flows in the short term, glaciers act as water reservoirs, and their disappearance will mean the loss of major water resources (which might occur in some places, such as South America). The acidification of ocean and rainwater, another effect of climate change, is having deleterious effects on biological productivity, including agriculture.

Misuse and waste of water resources is another contributing factor to water scarcity. Water-poor regions tend to be economically poor, which inhibits the development of efficient water infrastructures for domestic use. Developed nations are confronting problems with deteriorating water infrastructures. Agricultural use also widely suffers from inefficiencies, such as evaporation and leaks. Poor sanitation, as it has been noted already, can decrease water quality (and thus the quantity of clean water) by polluting freshwater. In developing nations, only 10 % of

wastewater is treated before being discharged back into the environment, and only 10 % of treatment plants function efficiently (United Nations Environment Programme 2007, p. 132). Excessive groundwater pumping is resulting in not only depletions of water resources but land subsidence, intrusion of saltwater into aquifers, and increased costs from the need for deeper drilling.

All of these pressures on water resources are predicted to increase as the world population grows and the effects of climate change become more severe. Water use is expected to increase 50 % by 2025 in developing nations and by 18 % in developed nations (United Nations Environment Programme 2007, p. 121). In many parts of the world, water use already exceeds the replenishment of resources, e.g., in the High Plains of North America and the Indo-Gangetic Plain in South Asia. Climate change will further slow replenishment in these and other parts of the world. It is expected that by 2050, 1.8 billion people will be suffering from “absolute water scarcity,” and two-thirds “will be under conditions of water stress” (United Nations Environment Programme 2007, p. 129). Many people in the world are aware of the water crisis, including those currently living with it; others, especially those in water-rich nations, are only slowly learning of it.

The ethical issues of water use arise at both the levels of the crisis and its solutions. The crisis generates urgent moral imperatives for action, including increasing awareness of it and the need to devote attention to its solutions. Another related ethical issue concerns who are responsible for alleviating the crisis. For example, do developed nations (which tend to be water rich) bear responsibility, and how much, for alleviating the crisis in developing nations? The solutions to the crisis reflect various ethical presumptions ranging from the ownership of water and whether it should be treated as an economic or social good to the environmental and cultural impact of water solutions. Solutions to the crisis occur at both the individual and collective level. Individuals in water-stressed regions have obligations to be conservative in their water use. This obligation

can also arise in water-rich regions depending on the use and source of water. For example, an abundance of groundwater does not relieve its users of an obligation to conserve water, especially if this water is being consumed at a rate greater than its replenishment; users need to be conscious of the availability of water for future generations. Their use of water also makes demands on water infrastructure and creates pollution, impacts which are independent of water quantity. In desperately water-poor regions, individuals do not have enough water to be conservative about. In water-poor urban areas served by water utilities, there can be a tendency to hoard and otherwise manipulate the water infrastructure in order to meet daily needs. At the collective level, efficient and ethical management of water uses (to be discussed later) are an essential part (and source) of solutions to the water crisis. Water management is essential for avoiding the classic and notorious “tragedy of the commons” problem; without the management of a public good like water, users will tend to deplete or otherwise destroy that good. But the distinction between individual and collective responsibility is not a sharp one. Individuals make decisions that affect collective action; as voters and/or consumers, they influence both public and private uses of water. Management solutions can assume either a restrictive or inclusive scope. The former would focus solely on satisfying water needs, whether short term or long term, and the latter a broader consideration of the social and environmental impacts of water use. But the distinction between restrictive and inclusive scope is also becoming increasingly more difficult to draw. For example, different water-use solutions, such as the construction of dams, have environmental impacts that can affect the quantity and quality of water.

Solutions

The solutions to the water crisis include applications of specific technologies to increase the supply of freshwater, as well as more general strategies for alleviating the demand on water

resources. The ethical implications of these solutions concern their ability to address both the water crisis in equitable ways and externalities, like the effects of these solutions on the environment.

Desalination involves taking saltwater and converting it into freshwater. It can provide a major source of water for coastal regions. However, the process is energy intensive and uses expensive technology, putting it out of reach for many countries. Also, a by-product of many desalination methods, such as reverse osmosis, is a high-saline brine. When this is discharged back into the ocean, the salinity of the surrounding water is increased, and this can damage the marine ecosystem. Water intake from the oceans can also damage marine life. Technologies are being developed to mitigate these environmental impacts.

Effluent reuse is similar to desalination in that it takes a source of nonpotable water and converts it for drinking and other uses. Many municipalities direct wastewater that has undergone some treatment for agricultural and industrial use, as well as municipal uses like the watering of parks. The technology exists to make wastewater clean enough for drinking, but there has been resistance by potential users. The objections are mostly aesthetic. The idea of drinking what was recently flushed down a toilet or a drain is unappealing to many. These anxieties can be countered by pointing out, as it was at the top of this entry, that any water that humans drink has passed through numerous biological organisms, including themselves, and that the treated wastewater can be cleaner than water from other sources. Wastewater treatment also produces a by-product that has been directed to agricultural use, but some worry about pollutants in this waste entering the food chain, such as the residue of pharmaceuticals consumed by humans.

These solutions involve finding new sources of water. Other, less feasible, solutions have been proposed. Some have suggested towing polar icebergs to water-starved regions. Also, there are many places around the globe that enjoy a surplus of freshwater. Some have proposed

shipping this water long distance in ocean tankers, but the current cost to do so makes this unfeasible.

Another set of solutions to the water crisis involves improving the management of existing resources to ensure their reliability and longevity. Different water management theories will be discussed in a later section. Important proposals related to the management of water resources are the *privatization* of water resources and services and the creation of *water markets*. Their advocacy is motivated by both free-market ideology and conservation concerns (Glennon 2005; Anderson and Leal 2010; Gleick et al. 2002). Many believe that setting a price on water will reduce demand and increase efficiency of water services; if water consumers have to pay for water, they will use it more wisely and less of it. In the United States, for example, most consumers pay only for the delivery of water, not the water itself. If they were to pay for the water, as well as allowed to transfer their rights to it, then a water market would develop that would set a “true” price for water and run efficiently without the need for much, if any, government regulation. Chile, which has had a market-based water policy since 1974, is often cited as a model of such an approach, but whether it has been successful is contentious (Anderson and Leal 2010, pp. 95–96; Bauer 2004). Some have argued that markets cannot capture all the costs of water. For example, they do not by themselves consider third-party effects of water transfers, such as those on the members of community where the water transfer originates (Sax 2010). Also, markets do not consider the effects of transfers on future users.

An ethical and political problem that confronts management solutions to the water crisis is the fact that many watersheds cross national boundaries. Rivers that cross through several countries are the clearest example of this. The Rio Grande passes through the United States and Mexico; the Nile passes through ten countries. Disputes over the use of such watersheds are a perennial problem of water use and can only be alleviated through better cross-nation cooperation. The Nile Basin Initiative is one

example, although it has not solved all of the disagreements of the participating countries. In addition to cooperation, cross-boundary watersheds also highlight obligations that states owe one another. For example, a country that dams a river must consider the consequences to downstream users of the river, even those in another country.

Water as a Human Right

In order to encourage the implementation of solutions to the water crisis, and to influence the types of solutions that are pursued, many have called for the recognition of a human right to water. In 2002, the UN Committee on Economic, Social and Cultural Rights recognized an implicit right to water in Articles 11 and 12 of the International Covenant on Economic Social and Cultural Rights (General Comment 15). This was followed in 2010 with a resolution by the UN General Assembly that recognized a human right to water and sanitation (UNGA Res. 64/292). A small number of states identify an explicit right to water in their constitutions, such as the Republic of South Africa.

A human right to water would ensure that the basic water needs of individuals are met. One widely endorsed estimate has this to be 20 L of water daily for each adult individual. This is well below the average daily use of those in the United States (400 L) and Europe (200 L). Even so, it is above the estimated daily use of 5 L by individuals in water-poor regions. Even the states in these regions that are actively trying to improve their water situation lack both the funds to improve the water infrastructure and the water sources needed to fulfill this basic needs minimum. On the subject of costs, the advocates of a human right to water are quick to point out that it does not entail that water should be free. It should be affordable. It should also be easily accessible and of a sufficient quality, but those who can should pay for the water and its delivery.

Besides the practical problem of fulfilling a human right to water, the human right to water suffers from some conceptual problems. For

example, it is not clear who is the addressee of such a right, that is, who bears the corresponding duties and responsibilities of a right to water. The UN resolutions and comments, as well as the state constitutions that recognize a right to water, make governments the addressee. This presupposes that the government has a monopoly over water sources and services, an imperative to assume such a monopoly, or the power in some other form to ensure that the basic water needs of citizens are met. Again, there are both practical and conceptual problems with this presupposition. One possible way to resolve both sorts of problems is to deny that all rights entail correlative duties held by individuals or governments (Sampford 2009). But this would broaden the category of human rights to include what resemble aspirations or goals of a community. Rights, however, are more than this. They are enforceable, and their recognition can be demanded. Both acts imply some target or addressee of the right.

One way to meet at least the conceptual demands of a human right to water is to recognize water as a common good not subject to anyone's appropriation, like air. Water and air are in many respects alike. They both move or flow, and they are renewable. However, air is ubiquitous above the surface of the earth, and water is not. Also, there are no consumptive uses of air. That is, the air humans use for breathing as well as such things as firing coal plants is immediately returned to the atmosphere (although, in the case of the latter and many industrial uses, with pollutants added). Some important water uses are consumptive. The legal regimes that have arisen around water use reflect this and are not all compatible with the idea of water as a common good.

The *riparian doctrine*, which dates back to the Justinian Code of 533 CE, holds that landowners have a right to the water in a stream or river that adjoins their land. The right to this water is not transferable, that is, it cannot be transferred apart from transfer of the land. The water removed needs to be put to reasonable use and returned in as close to the same condition to its source. The riparian doctrine only works well in humid

regions; in arid regions, water must be diverted across the land to be of use. The *doctrine of prior appropriation* was developed to accommodate these uses. It was applied in the western United States during the gold-mining boom (mining makes extensive use of water) and was likely derived from English common law and the *acequia* system of Hispanic law. It grants a right to water to whomever diverts the water for beneficial use. They do not need to own land adjacent to the source, and priority is given to those who first make use of the water over those who come later. The *public trust doctrine*, which is another one to have origins in the Justinian Code, contends that air, running water, and the sea are held in common by all humans. The state retains title to them and is obligated to regulate them for the benefit of all its citizens. The public trust could be relied upon by states to fulfill a human right to water, but it conflicts with doctrines like prior appropriation, and it does not cover all water sources. The use of groundwater has been subject to less legal regulation. Some doctrines have mandated certain limits on pumping, such as the *reasonable use rule*; others have endorsed mostly unlimited pumping, such as the *rule of capture* (Pennington and Cech 2010, p. 378ff). Only the public trust doctrine is consistent with a human right to water, but not sufficient. Making such a right consistent with existing legal doctrine – or overriding those doctrines – poses both legal and ethical challenges.

Water Management

Whether water is a common good or property, wise management is necessary to ensure the sustainability and accessibility of water resources. A laissez-faire approach to water use is no longer a possible approach to water use in a time of increasing scarcity. Over the last few decades, several different management paradigms have been proposed and adopted. These paradigms consist of tenets of water management that are intended to promote the wise and efficient use of water.

In the 1980s, *integrated water resources management* (IWRM) emerged and eventually became the dominant paradigm for water management. It arose in response to the recognition that the management of water must be coordinated with that of other resources, their various uses, and the entirety of stakeholders. It advocates an interdisciplinary and multi-institutional approach to the management of water resources and services. IWRM has been endorsed by numerous world organizations, including the United Nations Environment Programme, the United Nations Development Programme, the World Bank, and the Global Water Partnership (GWP). The GWP has provided the most widely cited definition of IWRM as:

a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. (Global Water Partnership 2000, p. 22)

This definition has been criticized for its vagueness (Biswas 2008). Nevertheless, several states have attempted implementing IWRM, with varying degrees of success (Petit and Baron 2009).

The ideas behind IWRM have a long history (stretching at least as far back as the early twentieth century), as do some of its competitors, such as *adaptive management*. This approach to management has roots in the writings of Aldo Leopold, in particular the “Land Ethic” section of *A Sand County Almanac* (1949). It also reflects the insight that water and other resources are unstable and undergo unpredictable variations. Large-scale water management projects such as for irrigation or flood control assume stability and make humans more susceptible to harm from unanticipated ecological change (Brown and Schmidt 2010, p. 9). Adaptive management is a strategy for ensuring the *resilience* of ecological systems. It involves a pragmatic approach to water management that emphasizes experimentation and social learning (Norton 2010). *Ecohydrosolidarity* can be considered a species of adaptive management, although distinguished

from both it and IWRM by a greater emphasis on human rights and social justice. First articulated by Malin Falkenmark and advocated by organizations like the Stockholm International Water Institute, with which she is affiliated, ecohydrosolidarity combines insights from both ecology and hydrology to, for example, draw attention to the functions of both *blue water* (liquid water flow) and *green water* (e.g., soil moisture). Traditional water management has focused on the former, even though it is only one-third of water resources, and green water is involved in plant production, which supplies food and other critical needs for humans. An understanding of, and attention to, the interaction between blue and green water is essential for effective water management (Falkenmark and Folke 2010).

All management paradigms make ethical presuppositions, and their implementations have ethical implications. Some explicitly acknowledge the ethics, such as ecohydrosolidarity, while others, in particular some advocates and practitioners of IWRM, try to disguise them behind a value-neutral, objective approach to the problem of water scarcity. However, merely the identification of a problem reflects an ethical judgment. Also, as it was discussed above, all solutions to the water crisis have ethical implications, and the choice of solutions reflect ethical judgments.

Summary

The water crisis is affecting a large and increasing percentage of the world’s population. Population and economic growth, climate change, and the misuse and poor management of water resources are placing pressures on existing water resources. Solutions to the water crisis include finding new sources of water, such as through desalinization and effluent reuse, and improving the management of water resources and services, including privatization and the creation of water markets. All of these solutions have ethical implications. The recognition of a human right to water is another type of

response to the water crisis that seeks to influence governments and international organizations to act to alleviate the crisis. The notion of a human right to water suffers from some practical and conceptual problems, and it is incompatible with much of existing water law. Several management paradigms have been advocated as another way to respond to water scarcity and other problems associated with water use. They vary insofar as they incorporate the ethical dimensions of water use and scarcity, among other ways.

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WTO Dispute Settlement and Food and Agricultural Trade

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Synonyms

Dispute resolution; Dispute settlement Body;
Dispute settlement panels

Introduction

International trade agreements are formal accords under international law involving two or more countries. Multilateral trade agreements are negotiated by the members of the World Trade Organization (WTO) and set out rules and regulations for the conduct of international trade among the majority (159) of sovereign nation states (about 193). All WTO members must agree to the negotiated trade provisions and are required to define specific commitments in national legislation to insure consistency with the rules. Similar procedures are followed for regional and bilateral – also known as “preferential” – trade agreements. If a party to an international trade agreement violates any of the commitments it has made, other parties may seek redress through the organization governing the agreement. To handle these situations, trade agreements include procedures for dispute settlement that usually involve the establishment of

expert panels to hold hearings on the case and to render a judgment based on the provisions of the trade agreement in question. The following discussion is focused on WTO dispute settlement operations because they are the best-known procedures for resolving international trade disputes. They are also widely criticized for their insensitivity to national and international laws on environmental protection, human rights, and other global concerns. In addition, some worry that adjudicating complaints through the WTO dispute settlement mechanisms can be costly and may require legal expertise not easily found in many developing countries.

WTO Dispute Settlement (DS) Procedures

Toward the end of World War II, world leaders created international legal institutions and organizations to administer them. In addition to the United Nations, the International Monetary Fund, and the World Bank, they hoped to create an international trade organization (ITO). A proposal for such an organization was developed at a conference in Havana, Cuba, in 1948, but this agreement was blocked by the United States. A somewhat earlier and less ambitious agreement, the General Agreement on Tariffs and Trade (GATT) took on some of the functions envisaged for the ITO. The WTO, created in 1995, absorbed the GATT as well as other multilateral trade agreements such as the Agriculture Agreement and the General Agreement on Trade in Services (GATS). The primary objective of the GATT and WTO is to promote trade liberalization and to offer governments an avenue for avoiding the protectionist trade policies that had seriously impaired the functioning of the global economic system during the 1930s. Under both the GATT and the WTO, periodic trade negotiations, often referred to as “rounds,” have been organized to develop new rules to promote freer trade. The Uruguay Round, which created the WTO, was the eighth round of trade negotiations. A ninth round known as the Doha Development Round (DDR) or Doha Development Agenda (DDA)

was launched in 2001 and is on-going although a partial agreement was reached in December 2013.

In addition to organizing multilateral trade negotiations, the WTO is also in charge of resolving trade disputes between member states. Dispute settlement (DS) procedures under the GATT were often ineffective because the decisions of the DS panels could be blocked by the losing party and, without clear time constraints for completion of the hearings and reports, cases often dragged on for many years without satisfactory resolution (WTO 2012a). The Uruguay Round agreements included strengthened dispute resolution mechanisms with fixed time lines for completion of the various steps in the process. Countries that believe that their economic interests have been harmed because another WTO member has violated the commitments it has made may elect to request “consultations” with the offending party. The consultations are aimed at finding a mutually agreeable resolution of the dispute and can last up to 60 days. If the consultations fail to settle the conflict, the Dispute Settlement Body (DSB), which is made up of the entire membership of the WTO, may agree to establish a DS panel of experts from countries not party to the dispute to hear the case (WTO 2012a). The panels are supposed to complete their report within 6 months. The panel’s report is submitted to the DSB which can either accept or reject all or parts of the report and recommendations from the panel (WTO 2012a).

Decisions of the DSB can be appealed, and once a final decision has been adopted, parties that have been judged to have violated their commitments are expected to alter the offending trade policy or offer satisfactory compensation to the complainants. If the parties to the dispute cannot reach an agreement that the policies at fault have been sufficiently altered to remove the harm or that adequate compensation has been negotiated, the complainants can request permission from the DSB to suspend their normal WTO obligations in order to retaliate by placing trade restrictions on exports from the losing party. A recent case on upland cotton illustrates the operation of the DS procedures. In September 2002, Brazil requested consultations with the United States concerning

US policies for upland cotton (WTO 2012b). The United States provides subsidies for cotton so that producers are sheltered from lower world market prices. These subsidies create incentives for increased production which further depresses world prices harming producers in other exporting countries (Peterson 2009). Brazil was joined by 16 other countries seeking to change the US policies charging that they violated US commitments made to comply with the WTO Agriculture Agreement. A dispute settlement panel was eventually convened delivering its report in September 2004 largely upholding Brazil's position. The United States appealed the decision to a WTO agency known as the Appellate Body which again upheld most of Brazil's complaint. In November 2009, Brazil was granted authorization to retaliate as the US policies had not been changed and adequate compensation had not been agreed upon (WTO 2012b). The following year, the Brazilian government listed the US goods that would be subject to retaliatory tariffs but decided to hold off on their implementation while pursuing further negotiations with the US government and in return for compensatory payments to the Brazilian cotton industry (Chan 2010). The Brazilian government expressed the hope that a more permanent solution to the problem might be achieved in the context of new farm policy legislation adopted in 2014 to replace the expired 2008 farm bill (WTO 2012b).

Criticisms of the DS Procedures

The DS procedures of the WTO provide a way for countries to resolve trade conflicts. In the absence of such procedures, it is likely that trade disputes would rapidly escalate into full-blown trade wars. Trade wars are not precluded by the DS procedures: offending parties can always refuse to change their policies and complainants can then retaliate with trade barriers of their own. But the procedures offer the possibility that the parties will be able to find a solution short of a trade war and they also have the added benefit of helping to clarify WTO and

international trade law. Of course, there is no guarantee that these cases will be resolved amicably or speedily. The entry by (Hobbs 2014) on the Canada, US, and EU beef hormone dispute in this encyclopedia describes a case that started under the GATT in the late 1980s and that was finally resolved only in March 2012. On the other hand, according to the WTO, 452 cases have been submitted to the WTO since 1995, and, of these, 150 are in consultations, 92 are being addressed by DS panels, and 202 have been withdrawn, terminated, or settled with recommended changes either implemented or in the process of being implemented. In only eight of these cases has an authorization to retaliate been requested or granted (WTO 2012c).

The apparent success of the DS procedures is overshadowed by the fact that some of the cases have been extremely controversial. Before examining two of these contentious cases more closely, it is useful to consider some broader criticisms of the WTO, many of which carry ethical dimensions associated with the DS procedures. Singer (2004, p. 55) identifies four main criticisms of the WTO. The first is that it gives priority to commercial and economic interests over other considerations, such as environmental protection, that are of equal or greater value. The WTO is also criticized for undermining national sovereignty and for being undemocratic. Finally, some believe the WTO contributes to global inequality favoring the rich and large corporations in high-income countries over the poor. The first criticism is probably the most important and the one most closely connected to food and agricultural ethics. In examining this charge, Singer draws heavily on two controversial cases that were handled by GATT and WTO dispute resolution panels. He notes that the language in the WTO agreements allows countries to restrict trade to protect the environment, human rights, or other issues with social, political, and ethical dimensions (e.g., child labor). Based on his analysis of the Mexico-United States dispute over dolphin mortality associated with tuna fishing and the India-United States dispute over sea turtle endangerment connected to shrimp fishing, however, he concludes that commercial interests do

indeed seem to trump environmental concerns in the DS process. Calle (n. d.) examines these and other controversial disputes and reaches similar conclusions. The tuna-dolphin and shrimp-sea turtle disputes will be examined in greater detail in the next section.

Singer appears to have mixed feelings about the charge that the WTO undermines national sovereignty. There is little doubt that the WTO and other institutions that increase interdependence among the nations of the world serve to constrain state sovereignty (see the entry in this encyclopedia by Peterson on “► [Food and Agricultural Trade and National Sovereignty](#)”). Singer points to social contract traditions, noting that as in the case of citizens giving up some of their rights in return for the benefits provided by a state, so nations may choose to give up some of their room for maneuver in return for the benefits of access to the global trading system. On the other hand, as the WTO has extended its reach into areas such as the protection of intellectual property rights, the potential for conflict between legitimate government policy initiatives and WTO rules may lead to unfortunate outcomes. Singer suggests that protection of patents on antiretroviral drugs used in the fight against HIV/AIDS could have caused immense harm because these drugs are so expensive. Allowing generic substitutes would save millions of lives but might run afoul of the WTO agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). WTO agreements and the dispute settlement procedures that support them do erode national sovereignty, but whether this is a good or a bad thing depends on the particular circumstances.

The charge that the WTO is undemocratic is true in at least one sense: large nations such as China (population: 1.3 billion) have only one vote, the same as tiny countries such as Saint Kitts and Nevis (population: 39,000). Singer also criticizes an argument put forward by the WTO claiming that because decision making is done by consensus, the WTO is actually more democratic than organizations in which decisions are made by simple majorities. With almost no supporting argument, Singer asserts that this

claim is false (p. 75). He correctly notes that requiring consensus means that every member has a veto and such a voting system will inevitably favor maintaining the status quo because it is almost certain that some country would oppose any change that is proposed. But these implications of a unanimity voting rule do not inherently make such a rule undemocratic. Pareto optimality, defined as a situation in which no one can be made better off without making someone else worse off, is an important concept in welfare economics. If policy makers seek to achieve Pareto optimality, the only way to guarantee that outcome is through consensus voting. Many (including this author) reject the idea that achieving Pareto optimality is a reasonable policy objective because of the overly conservative nature of such a voting rule, but for matters of grave import, having the right to veto objectionable changes may be thought by some to be critical (but see Sen 1970).

The final charge against the WTO is that it contributes to greater global inequality by favoring the interests of large private corporations which exploit the poor in low-income countries. Given that those making this claim often defend contradictory positions (e.g., cheap US maize drives poor peasants in Mexico off their farms while at the same time US policies on maize ethanol drive up the prices paid for tortillas by poor urban Mexicans), Singer elects to focus on the empirical question of whether or not global inequality has increased. He reviews a number of studies and concludes that statistical data and other information about income inequality are too unreliable to make a firm determination on this question. The WTO was created to foster a liberal trading system on the grounds that free trade can be expected to increase general economic well-being. Most economic analyses recognize that trade liberalization can lead to lower incomes in uncompetitive industries but note that the gains to other sectors of the economy almost always are greater than these losses. For food and agriculture, there is good evidence that trade liberalization and other policy reforms would lead to substantial net benefits with higher commodity prices that benefit producers in low-income

countries but that harm poor consumers in these same countries (see Peterson 2009).

Questions about the impact of the WTO on developing countries are related to another concern that has been raised about DS. Arguing a case before the DSB and the experts on the panel is complicated and requires expertise that may not be readily available in low-income countries. Mosoti (2006) and Bown and Hoekman (2005) explain the low participation in DS cases by developing countries by noting the legal complexities and costs associated with the WTO procedures. If low-income countries are unable to defend their interests before the DSB, the entire system might be judged to be biased and unfair. Bown and Hoekman (2005) suggest providing legal services to low-income countries through international organizations, foreign aid, and nongovernmental organizations. The DS procedures allow for interested third parties to join other countries in filing complaints, and this may be an avenue for increasing their participation in these processes. Poor countries such as Benin, Chad, Pakistan, and Bolivia joined with Brazil in the upland cotton dispute with the United States although only Brazil was granted authorization to retaliate when it was determined that the United States had not complied with the DSB ruling (WTO 2012b). If current DS procedures do prevent full participation by the governments of low-income countries, reforms along the lines suggested by Mosoti (2006) and Bown and Hoekman (2005) would seem to be needed.

Tuna, Dolphins, and Turtle Excluder Devices (TEDs)

Singer (2004), Calle (n. d.), and others point to particular decisions by the DSB in support of their conclusion that the WTO favors commercial interests over other values, notably environmental values concerning endangered species and the protection of marine mammals. The decision in the dispute between Mexico and some other countries and the United States over tuna fishing methods in the Eastern Tropical Pacific that led to the deaths of large numbers of dolphins incensed

the environmental community and still resonates as a case in which legitimate environmental concerns seem to have been overridden by the WTO's commitment to free trade. In the Eastern Tropical Pacific, tuna frequently swim below dolphins. The dolphins are easier to locate as they swim near the surface and it has been common for tuna fishers to use dolphin sightings to set their nets. The US Marine Mammal Protection Act (MMPA) adopted in 1972 restricts imports of tuna captured with methods that lead to substantial dolphin killings (WTO 2012d). Mexico requested consultations on these provisions in 1991 arguing that GATT exceptions allowing the use of trade barriers for environmental purposes only apply to final products not the methods used to produce them. In addition, Mexico objected to the extension of US laws beyond US territory noting that the MMPA is not an international law. The GATT panel ruled in favor of Mexico agreeing with the argument that the GATT exceptions apply only to final products and concluding that countries are not free to impose their national standards on other countries (WTO 2012d; Perrin et al. 2002).

The Mexican government decided to drop the case so the panel report was never adopted. Instead, Mexico, the United States, and other countries undertook direct negotiations aimed at reducing the incidental killing of dolphins. The result was the 1999 Agreement on the International Dolphin Conservation Program (AIDCP) which provided for limits on dolphin bycatch and observers to monitor compliance. Dolphin mortality was falling during the 1990s, and under the AIDCP, dolphin mortality associated with fishing operations has declined further (Perrin et al. 2002). Some have argued that the resolution of this dispute shows that it is preferable to conduct direct negotiations on global environmental issues with a view toward establishing an international agreement rather than trying to resolve them through the WTO. The WTO is a trade agreement not an environmental or animal welfare agreement and as noted by Marceau (2002), can only adjudicate disputes in terms of provisions that are specifically included in the WTO agreements. In considering the relation between

WTO and human rights law, Marceau argues that if the WTO were to attempt to enforce rules that are not included in its agreements, it would be altering the WTO provisions, and such modifications require the prior agreement of all member states. This does not, of course, exempt nations from their obligations under other international laws (on human rights or the environment). It simply means that the WTO is not the appropriate place to adjudicate conflicts related to these obligations. In the case of the tuna-dolphin dispute, the problem that led to the imposition of trade restrictions was largely resolved by agreements made outside the WTO.

The AIDCP also includes provisions for the labeling of canned tuna as “dolphin-safe” (Trujillo 2012). The United States did not adopt the AIDCP standards, relying instead on standards defined in the US Dolphin Protection Consumer Information Act (DPCIA). The DPCIA standards are more demanding than those in the AIDCP, and this led to a new DS panel convened to adjudicate rules on labeling traded tuna as dolphin-safe. The panel found that while the US labeling system was not discriminatory, it did restrict trade more than is necessary to accomplish the objectives (Trujillo 2012). The panel also noted that the US scheme may actually cause greater harm because it focuses on fishing methods rather than on dolphin protection per se. Under the DPCIA, the dolphin-safe label is reserved for tuna caught with methods that do not involve using dolphins to locate schools of tuna (Trujillo 2012). These alternative methods may lead to greater bycatch of other species including sea turtles, sharks, and other types of fish (Guernsey 2010). Mexico and the United States both appealed the panel report and the Appellate Body subsequently reversed some of the findings. The final report adopted by the DSB in June 2012 determined that US dolphin-safe labeling provisions discriminated against Mexico and the United States has agreed to modify its laws to comply with the ruling (WTO 2012e).

One of the issues raised in this case is the question of whether WTO rules apply to “process and production methods” (PPM) or only to

final products. Basic WTO principles require that countries apply the same trade policies to all members (the principle of most-favored nation status) and that “like” products should be treated the same (Matteotti and Nartova 2011). Tuna caught with methods that harm dolphins are indistinguishable from tuna caught with dolphin-safe methods. This suggests that the two types of tuna are like products, and this would mean that they cannot be subject to different trade restrictions. For environmentalists, this misses the point entirely as environmental problems are often associated with production methods. Domestic regulations that prevent or constrain the use of particular production methods (limits on agricultural chemical applications, restrictions on the use of growth-promoting hormones, cage-size requirements for laying hens, etc.) raise the costs of domestic producers who may not be able to compete with cheaper products imported from foreign suppliers not subject to these regulations. One way around this problem is to implement labeling systems although, as in the case of dolphin-safe labels, such systems may still be open to challenge if they are structured in ways that favor domestic over foreign producers. It should be noted that governments in developing countries often oppose the incorporation of environmental mandates in trade law because they understand that it may be difficult or impossible for them to comply with environmental and social standards developed in high-income countries that are incompatible with the economic and environmental conditions they face.

Discrimination was at the heart of another controversial DSB ruling. To protect several species of sea turtles listed under the US Endangered Species Act, the United States requires that shrimp trawlers deploy nets with “turtle excluder devices” (TEDs) that allow sea turtles to escape. Foreign suppliers of shrimp have to receive certification that they are complying with this requirement as well. In 1997, India, Malaysia, Pakistan, and Thailand filed a complaint arguing that the US certification system was discriminatory. In its final report, the Appellate Body went out of its way to emphasize that measures to protect sea turtles

such as those of the United States are entirely legitimate under GATT Article XX which lists exceptions to WTO rules restricting the use of trade barriers (WTO 2012f). It did find, however, that the United States was discriminating against the four complainants because it offered countries in the Caribbean technical support in complying with the US requirements, support that was not available to the complainants. The United States has revised its certification guidelines to comply with the ruling (WTO 2012f).

Summary

Decisions of the DSB are tied very closely to the wording in the texts of the international trade agreements adopted by the members of the WTO. Some of these decisions have come under fire because they seem to overrule legitimate national policies and standards on social and environmental issues. WTO supporters note that exceptions to restrictions on the use of trade barriers are allowed in the WTO texts. Such exceptions have to be structured in ways that do not favor domestic producers over foreign suppliers. Critics of WTO dispute resolution argue that, in fact, economic and commercial interests are usually given priority over environmental and social concerns despite the language on exceptions in the WTO texts. Arguing cases before the DSB is costly and requires experience and expertise, and this may limit the ability of low-income countries to participate in the DS process raising issues of fairness and discrimination.

Cross-References

- [Agricultural and Food Products in Preferential Trade Agreements](#)
- [Environmental Ethics](#)
- [Multilateral Trade Organizations, Food, and Agriculture](#)

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You Are What You Eat

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Synonyms

Being; Brillat-Savarin; Feuerbach; Food;
Healthy eating; Identity

Introduction

While it is possible to trace the roots of the phrase “you are what you eat” to early Christianity where the body and the blood of Jesus Christ were represented by bread and wine (Gilman 2008), the phrase has become a token statement indicating a strong association between physical well-being and eating, especially in the second half of the twentieth century. In contemporary parlance, “you are what you eat” refers to the idea that one’s eating habits determine and also are a manifestation of the health of the person in question. The phrase became a slogan of healthy eating in the English-speaking world during the 1940s through the efforts of nutritionist Victor Lindlahr with his radio broadcast and then his book entitled *You Are What You Eat: How to Win and Keep Health with Diet*, which sold around half a million copies (Levenstein 1993). During the 1960s, influenced by the hippie

culture, healthy eating became synonymous with embracing a macrobiotic diet that involved whole foods (Gilman 2008). More recently, the phrase gave its name to a popular British TV show presented by nutritionist Gillian McKeith that aired between 2004 and 2007. The book derived from the show also had the same name and gained immense popularity with its emphasis on healthy eating as the key to overall well-being (McKeith 2005).

It can be argued that the statement has close associations with the shift from class to identity politics. Especially with the cultural turn of the 1980s, the phrase has been generally associated with individual choice. Its tone is also consistent with the individual agent’s responsibility and potential to define and redefine self through daily practices, thus also alluding to the character of the individual consumer. On a different level, the phrase also refers to the ways in which the chemical structure of the foods people consume affect the way in which they act. By establishing a link between psychology and chemistry, this perspective attempts to explain the association between the food intake and human behavior such as the relationship between impulsive behavior and sugar intake.

The phrase also has close links with taste. Here, taste does not just refer to the physical appreciation of food, but rather it is both an individual and social experience, which is “...embedded within a social and cultural milieu involving habits, norms, rituals and taboos” (Pietrykowski 2004, p. 312). Taste is learned,

and as a socially and historically embedded phenomenon, it is not just a marker of individual identity but connotes a class disposition as well. Therefore, consistent with the incorporation principle that Fischler conceptualizes, it is reasonable to suggest that the phrase “you are what you eat” covers a wide range of action, from the physical and biological relation with food, to the making of the individual consumer, to the delineating of class identity and membership (Fischler 1988). In this regard, what human beings eat helps sustain physical existence; it helps produce their identity both as an individual and as a member of a social group.

Despite the individualistic connotations that seem to indicate that the phrase belongs with contemporary and most often postmodern lifestyles, its roots lie very much with modernity. Below is an overview of the various incarnations of the phrase situated in their historical context. The overview helps demonstrate that to regard the phrase from an individualistic angle is not sufficient. Such a perspective overlooks the wider social, historical, and philosophical undertones of the phrase and as such provides grounds for the ethical/conscious consumer who should be responsible for his/her well-being while disregarding the limitations incurred by the ostensibly “all-knowing” consumer.

Brillat-Savarin and Gastronomy as Science

It is Jean Anthelme Brillat-Savarin who initially used the phrase in his *Physiologie du Gout, ou Meditations de Gastronomie Transcendante* (The Physiology of Taste) dating back to 1826. In the fourth of the twenty aphorisms, which Brillat-Savarin claims will “. . .serve as prolegomena to his work and eternal basis to the science,” he writes: “Dis-moi que tu manges, je te dirai ce que tu es” (Tell me what kind of food you eat, and I will tell you what kind of man you are) (Drayton 1994). Born into a family of lawyers, Brillat-Savarin did not owe his fame to his learned professions of law and politics. Rather, he became known as one of the most prominent

pioneers of gastronomy of his times along with Grimod de la Reynière (Mennell 2008).

In general, Brillat-Savarin’s work can be interpreted as part of an effort to establish gastronomy as a scientific as well as a modern discipline and to divorce it from earlier connotations of religious thinking that associated food with gluttony. He goes to great lengths to write a history of cooking, a philosophical one, where he traces the history of human beings’ relation with food and cooking which he considers “the oldest of the arts” (Brillat-Savarin 2008a, p. 93). In this long history, humanity has arrived at a point, he argues, that the “word *gastronomy* has been revived from the Greek; it sounds sweetly in French ears, and although imperfectly understood, simply to pronounce it is enough to bring a joyful smile to every face” (Brillat-Savarin 2008a, p. 108). Brillat-Savarin (2008b) further expresses his dissatisfaction with the commonsensical definition of *gourmandism*, which he says exposes “an endless confusion between *gourmandism*. . .and *gluttony* or *voracity*” (p. 107). In this meditation, he first provides a long list of various definitions of the term. None of these definitions alludes to gluttony, and all of them point to a rational, moderate, and moral engagement with food. From a moral standpoint, he argues, *gourmandism* is a sign of “implicit obedience to the commands of the Creator,” for it is God who gave us the appetite, and it is our duty to fulfill this to the best of our ability (Brillat-Savarin 2008b, p. 107–108). Brillat-Savarin emphatically lists the numerous advantages of *gourmandism*. *Gourmandism* is advantageous not just for the individual but for societies in general. It helps industries stay alive and grow; it fosters connections among nations; overall, it is good for civilization. Brillat-Savarin’s work can be read as part of a discourse that emerged in the post-French Revolution era that associated gastronomy with the civilizing process. It was also during this period that the interest of the bourgeoisie in foodways increased as did the number of cooks who ran public eating places after their emancipation from the kitchens of aristocracy (Spang 2000).

Brillat-Savarin associates the rise of gastronomy with modernity, and his effort can be read as

an attempt to inform diners of modern foodways (Ferguson 1998). The association of gastronomy with modernity was not limited to distinguishing eating from sin or merely positing it as a bodily function. The act itself was also what distinguished human beings from animals. As the second aphorism stated: “Animals fill themselves; man eats. The man of mind alone knows how to eat.” Furthermore, Brillat-Savarin’s focus on taste and his effort to locate the scope of gastronomy as a “sociological enterprise” that brought together the “scholar, the chemist, and the political economist” delineated this new science as a marker of collective identity. His experimental studies on eating habits of different social groups helped him work out the concept of the “gastronomic class” which closely associated with social class. It is in this line of thinking one should locate the statement, “Tell me what kind of food you eat, and I will tell you what kind of man you are.” Not only does gastronomy allow for an informed approach to food and foodways, but it also helps establish a modern society with informed and enlightened citizens. Furthermore, when one has a better grasp of gastronomy and the history of eating, they will have essential tools to understand the character, the disposition, and the place of people within society. Food is much more than simply sustenance, it is the lens through which one can understand society and detect social dynamics.

Feuerbach’s Sensationalism: “Man Is What He Eats”

Less concerned with the civilizing aspect of the food than with the philosophical endeavor to understand the ontological and epistemological being of humankind in the era of enlightenment, Ludwig Feuerbach wrote “Man is what he eats” (*Der Mensch ist was er isst*) during the 1850s. Feuerbach wrote these words in his review of Moleschott’s work on natural philosophy. The work entitled *Lehre der Nahrungsmittel* (Teachings on Foodstuff or Theory on Nutrition) had a considerable impact on Feuerbach, who was calling for an alliance with philosophy in

lieu of religion in his scholarship. In search for this alliance, Feuerbach realized the significance of the mundane task of eating, and thus food, on human being’s very existence. Later, his critiques took the phrase, which he had written toward the end of his scholarship, out of its context, and used it as an evidence that Feuerbach was placing too strong an emphasis on the significance of senses in gaining an understanding of the world and thus acting as a crude materialist (Hook 1994).

As Hook convincingly argues, it would be naive to state that Feuerbach was too excited to have rediscovered the wheel. Rather, his fascination of the link between something very tangible such as food and an ontological and epistemological stance of being and existence can be interpreted as a progressive step beyond knowing and making sense of the world through sensory experience. The phrase indicated that even sensory experience was not adequate, that humans needed something much more tangible yet more basic. Food is crucial here: not only does eating connect people to their surrounding world in ways in which other experiences cannot, but they simply have to eat not just to survive but also to be able to contemplate. The emphasis on food allowed the philosopher to unearth the indissoluble link between the mind and the body, the spirit, and the nature.

To overemphasize the statement “one is what one eats” without focusing on the larger body of ideas with which Feuerbach was engaging results in a lopsided interpretation of Feuerbach’s work. It was Feuerbach’s attempt to reject extreme forms of Hegelian idealism as well as absolute materialism. Transcending Hegelian idealism, not only did Feuerbach place the human being at the central stage and attempt to develop an anthropomorphic philosophy but also called for a new philosophy divorced from religion. There were two implications of this perspective: Since this new philosophy put the human beings at the center, their needs and interests should be the focus of philosophy, not a futile attempt to get at a higher good or unattainable truth. The new philosophy, then, should find ways to free humanity from previous bonds and help attain political freedom. In this respect, the statement

refers to an effort to ground human beings' well-being and freedom in their worldly dealings with nature, not in an abstract concept such as religion. Because "man is what he eats," it is through understanding and substantiating the link between the human being and nature can philosophy fulfill its end.

Secondly, situating the human being as the central focus and thus making him the active subject of making philosophy, not a conduit for getting at a larger truth, necessitated a refocus on the tools at his disposal, other than a Cartesian focus on mind, and thinking alone. It is true that when Descartes uttered the action of thinking, he implied something much more than mere contemplation, and he included sensing to his wide catalog of what thinking was comprised of. Feuerbach, on the other hand, conceived of a more direct connection between sensory experience and knowledge. Since man was the measure of all things, the way in which he could know the world would define the limits of his knowledge, therefore should be the only criterion of existence. For Feuerbach, the best and perhaps the only way man could know the world was through day-to-day dealings with nature to secure his livelihood. From this angle, the statement "man is what he eats" can be interpreted as the essential form with which the human being is embedded in and linked to the nature. The human being has to deploy nature in order to sustain, and this necessity imposes limits over knowledge of the world. Yet, this necessity also allows philosophy to locate its true task by placing the human being at the epicenter of this enterprise. This anthropocentric conceptualization of existence and knowledge also informed Feuerbach's scholarship on developing a psychological interpretation of religion, an area for which he is most well known, aside from Marx and Engel's "theses."

According to Feuerbach, neither idealism nor materialism could account for a full-fledged conceptualization of the human being, his existence, and relation with the surrounding world since both perspectives overlook the true nature of human being, who is a creature of space and time and one who is active but at the same time

limited and needy (Hook 1994). During the 1850s, in his later writings, Feuerbach looked for ways in which he could "...solve the traditional puzzle of mind and body through the idea of sensibility" (Turner 1996, p. 70).

Even though the temporal and spatial aspect of man's existence implicates his limits in getting a sense of the world in a more complete fashion, it also implies a promising potential since in this perspective, the world, or nature to be more precise, is not an isolated, external existence; thus, the relation to it becomes more meaningful as it is human's own making. This alludes to the creative nature of human beings which manifests itself as he handles the world surrounding him and implies a positive and creative engagement with nature rather than a subsumed one. One can further point out that it was this conception that Marx took as his departure point when accounting for alienation in his 1844 *Manuscripts* (Tucker 1978). It was Feuerbach's argument, later followed by Marx and Engels, that it was through human being's deployment of nature that he could get an understanding of his very existence and the world. Since humans are shaped by their needs and wants, food becomes an excellent choice through which the philosopher can understand how exactly they deploy nature and what we can learn from this about existence. Because it is through food and eating that nature, which has an external objectivity, becomes an internal subjectivity: "We are linked to external reality by our physiological needs, but this is an active linkage since external reality is literally appropriated and internalized by consumption" (Turner 1996, p. 185).

This rudimentary overview helps explain Feuerbach's enthusiasm for the nascent experimental studies on organic chemistry at his time. His willingness to incorporate Moleschott's work on nutrition can be interpreted in this light. "Sustenance," writes Feuerbach, "only is substance. Sustenance is the identity of spirit and nature. Where there is no fat, there is no flesh, no brain, no spirit. But fat comes only from Sustenance. . . Everything depends upon what we eat and drink" (cf. Hook 1994, p. 268). This stance constitutes a challenge to the infamous Cartesian statement "I think, therefore, I am." According to

Feuerbach, for thinking to take place, being should be secured by the essential practice of sustenance. Therefore, thinking and being were inextricably linked (Turner 1996). What's more, the kinds of foodstuff a human being consumes affect the ways in which he thinks. Thus, man is truly what he eats, for not only does eating ensure thinking, but also the substance of the act of thinking relies on the food consumed. For Descartes, the very fact that humans are thinking beings imply that God exists, for through the ability to think they can come to the realization of a perfect Being who implanted that thought in their mind. Feuerbach takes a step back and looks at the predicate of the act of thinking and situates sustenance right there. How is one supposed to think, if one does not get adequate sustenance?

While Feuerbach places man as a spatial and temporal being at the center of his philosophical endeavors, he does not leave his subject alone with his needs, wants, and limitations. One of Feuerbach's significant claims was that was a social being. Thus, the very act of sustenance affects humans not just as individual beings but also as part of a collective. The food intake, Feuerbach argues, has a direct influence on the way in which human beings behave and feel. Since man is part of a larger group, how he feels and behaves also have repercussions on the overall behavior of the collective as a whole. From this assertion, Feuerbach makes a powerful inference about class behavior. Because working-class people mainly live on potatoes, he states, which lack essential nutritional qualities, they lack the strength to overthrow the wealthy, thus lead a revolution. He writes: "What is eaten turns to blood, the blood to heart and brain, to the stuff of thought and temperament. Human fare is the foundation of human culture and disposition. Do you want to improve the people? Then instead of preaching against sin, give them better food. Man is what he eats" (cf. Hook 1994, p. 270).

Summary

This overview of the origins of the phrase helps uncover its modern connotations. Unlike the

emphasis on the ethical consumer citizen, who is responsible and is expected to be aware of her patterns of consumption and thus has everything at her own disposal to become healthy if only she has the willpower, the earlier incarnations of the phrase delineate either the structure of the field (as in the case of gastronomy as a modern discipline) which the subjects' actions help build but also impose limitations on these actions or food as a conduit through which they can gain an understanding of the world and of ourselves. Even though this stance may be seen as less liberating for the individual, it is also worth mentioning that such conceptualization is more conducive to creating a collective character and even collective action. It is this angle that the individualistic interpretations of the phrase tend to overlook.

Cross-References

- [Brillat-Savarin and Food](#)
- [Food and Class](#)
- [Gluttony](#)
- [Rousseau and Food](#)
- [Taste, Distaste, and Food](#)

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Youth Food Activism

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Introduction

Young people have historically played a significant role in social movements. Currently, there is an increase in youth organizing, spurred in part by rising levels of inequality and an increase in the engagement of young people in civic activities. One such area that is witnessing increasing youth involvement is the social movement for food justice (Steel 2010), a rapidly growing movement focused on efforts to address and advocate for healthier, local, affordable, safe, equitable, sustainable food and food systems. With a rise in obesity and other noncommunicable, diet-related health problems and the persistence of food insecurity among many vulnerable populations, the involvement of young people in this movement has the potential to bring forth transformative changes to the food system and thus reduce food-related health problems. This is particularly important as a disproportionate percentage of minorities bear the burden of obesity, food insecurity, and its health consequences.

This entry will first briefly describe the food justice social movement, with a focus on the United States, followed by a description of several ways in which young people are participating in and engaging with this movement. Given the dearth of literature on youth food activism specifically, this entry will end with a review of the pathways into and impact of youth activism in general.

Food Justice: A Social Movement

Gottlieb and Joshi define food justice as “ensuring that the benefits and risks of where, what, and how food is grown and produced, transported and distributed, and accessed and eaten are shared fairly” (Gottlieb and Joshi 2010). The Institute for Food and Development Policy/Food First defines food justice as “a movement that attempts to address hunger by addressing the underlining issues of racial and class disparity and the inequities in the food system that correlate to inequities to economic and political power” (Harper et al. 2009). These definitions illustrate the multifaceted nature of this relatively new, emerging social movement. Taking place on local, national, and global levels, this movement addresses diverse issues including economic development, hunger, race, racism, ethnicity, class, gender, and health and is closely tied with others such as the immigration, labor, gender equality, and environmental sustainability social movements (Holt-Gimenez 2011). This is reflected in the vision for the US food system that was laid out at the Institute for Agriculture and Trade Policy’s Food + Justice = Democracy conference held in the Fall 2012, which emphasized six food justice principles: (1) historical trauma; (2) local foods, community development, and public investment; (3) food sovereignty; (4) land; (5) labor and immigration; and (6) toxic-free and climate-just food system.

The food justice movement can be thought of as comprising several separate movements, for instance, movements focused on production (e.g., local, organic, safe, fair production), consumption (e.g., school food, anti-marketing), and

both production and consumption (e.g., farm bill, food security). The common goal of these movements is to have a “food system that promotes the health of people as well as the environment,” (Nestle 2009) or conversely, that “today’s food and farming economy is ‘unsustainable’ – that it can’t go on in its current form much longer without courting a breakdown of some kind, whether environmental, economic, or both” (Pollan 2010).

The issue of food and health has thus been transformed into a burgeoning food justice movement, with a growing number of active and visible advocacy groups protesting the practices of big agricultural corporations, widely released films and film festivals, books (e.g., *Fast Food Nation*, *The Omnivore’s Dilemma*), and primetime TV shows starring celebrity chefs (e.g., *Jamie Oliver’s Food Revolution*). A growing critique of this mass media attention on food, however, is its predominant focus on individual-level behavior and a lack of focus on the role of politics and social justice (Guthman 2007). Along these lines, researchers have recently again called attention to the important role of social influences on health and health inequities. Among the fundamental determinants of health conditions studied are income inequality, poverty, racism, and lack of opportunities for participating in democratic decisions (Braverman et al. 2011; Rogers et al. 2012). For many of these, social movements and activism have been identified as a promising solution (Birn 2009), highlighting the importance of understanding how and why social movements arise in response to health problems.

In public health, there has been a major push to address food and food policies in order to reduce health inequalities around diet-related illnesses and improve public health. Some examples include policies to increase access to healthy foods and decrease access to unhealthy foods (e.g., zoning of fast food restaurants, limits on advertising) and programs to engage young people and community members in skills-based learning, such as community gardening and cooking. The impact of these approaches, while successful on some levels, has yet to

dramatically transform the landscape of food environments. One promising avenue for realizing transformative change is through youth-led advocacy and organizing (Millstein and Sallis 2011).

Youth Organizing: Overview

The field of youth organizing has garnered attention from an array of disciplines, including sociology, psychology, social work, education, and public health. Given its multilevel, intra-, and interdisciplinary approach, numerous theories and concepts have been used to describe and operationalize the processes and outcomes of youth organizing, including youth empowerment, youth development, civic engagement, and sociopolitical development (Christens and Kirshner 2011). The Funders’ Collaborative on Youth Organizing (FCYO), a coalition working to advance youth organizing as a strategy for youth development and social transformation, defines youth organizing as “an innovative youth development and social justice strategy that trains young people in community organizing and advocacy, and assists them in employing these skills to alter power relations and create meaningful institutional change in their communities” (Funders’ Collaborative on Youth Organizing 2011). Despite diverse theoretical and applied approaches, common features of youth organizing include focusing on youth-driven issues, challenging traditional norms around power, using collaborative approaches to social and systems change and collective decision-making processes, and being adult supported (Christens and Dolan 2011). Within this field, there is a continuum of youth participation, ranging from youth involvement in social activism to youth-driven activism within an adult-led movement to youth-led organizing.

The issues that are addressed in youth organizing settings are generally locally based, youth-selected, and contextualized within larger political and social justice frameworks (Christens and Kirshner 2011). A 2010 survey of 160 youth organizing groups in the country found that the

most common issues addressed among youth organizing groups include education justice/education reform (65 %), community and neighborhood improvement (50 %), racial justice (50 %), economic justice (38 %), environmental justice (37 %), and health (37 %) – which included environmental work, in addition to food justice (Torres-Fleming et al. 2010).

Youth participation and leadership is crucial to public health, where leadership has been defined as “speaking out about injustice, and being prepared to take up the fight within our own field as well as in the broader society. . .and to contribute our specific expertise while recognizing that we have much to learn from the expertise of others” (Krieger 1990). Public health, a field rooted in the tenets of social justice, tries to address the multiple and complex pathways to disadvantage and works towards improving health of populations and reducing health inequalities by breaking down ethical, political, economic, and social barriers to equality (Beauchamp 1999; Gostin and Powers 2006). In a recent review of the World Health Organization’s report *Closing the Gap in a Generation* (CGG), Birn (2009) calls for greater political activism and advocacy in public health practice and urges more attention to the historical and present role of social justice movements in reducing health inequity. For example, researchers are beginning to point to social movements and in particular building on current movements with similar behavioral end goals, as a strategy for addressing obesity (Dietz and Robinson 2008; Robinson 2010). Such an approach shifts the focus from targeting individual-level behavior and towards elements of social movements (e.g., identity formation, social interaction) that may result in health benefits and obesity prevention as a “side effect” (Robinson 2010). Organizations dedicated to positive youth development and youth leadership embody these beliefs and practices of political action by engaging young people in understanding historical and current political, social, and cultural contexts. In this way, they seek to positively transform their communities, as can be seen with the food justice movement.

Youth and Food Activism

Rooted in Community National Network, a “national grassroots network that empowers young people to take leadership in their own communities” has created the Youth Food Bill of Rights, which states the following rights: (1) We have the right to culturally affirming food, (2) we have the right to sustainable food, (3) we have the right to nutritional education, (4) we have the right to healthy food at school, (5) we have the right to genetic diversity and GMO-free food, (6) we have the right to poison-free food, (7) we have the right to beverages and foods that do not harm us, (8) we have the right to local food, (9) we have the right to fair food, (10) we have the right to good food subsidies, (11) we have the right to organic food and organic farmers, (12) we have the right to cultivate unused land, (13) we have the right to save our seed, (14) we have the right to an ozone layer, (15) we have the right to support our farmers through direct market transactions, (16) we have the right to convenient food that is healthy, and (17) we have the right to leadership education.

While the food movement is generally new and burgeoning, there are numerous youth-centered programs, organizations, and activities working towards the goals of food justice. The diversity of the goals and issues of the food movement affords multiple ways to categorize food justice work and strategies for engaging young people. These include goals of working with young people, for example, nutrition education, skills and job training, and youth empowerment or leadership skills. This ties in closely with the consideration of level or degree of youth engagement within organizations – from offering education or services, to being adult led but youth engaged, to being fully youth led. Additionally, programs may focus on a specific area of the food justice movement, such as urban agriculture, community food access, institutional or school food, and food policy. Lastly, the reach and scope of youth food activism can range from large-scale, national-level organizations to classroom- and school-based programs.

More specifically, a 2007 report found that there were 151 youth in sustainable food systems programs in the United States, Canada, and Puerto Rico. Of the 41 organizations that responded to a survey, 95 % manage agriculture or gardening education programs and 73 % offer nutrition and health programs, while only 27 % get involved in food policy legislation (The Food Project 2007).

Urban agriculture and sustainable farming offers ways for young people to learn how to grow food and become engaged in addressing local food production and food access. Such programs may offer opportunities in the form of internships or summer employment to young people to work in community gardens, school gardens, and farmers' markets while learning about food and nutrition, leadership, and social justice. Programs such as these emphasize job creation and training for young people, responsibility, leadership development, creation of safe spaces, and opportunities to contribute to their neighborhoods.

Programs working on community food access, on the other hand, may focus on food insecurity and health inequities through efforts like reducing the availability and consumption of unhealthy foods in poor, underserved neighborhoods. These efforts may involve conducting community food assessments to understand the availability of and access to food in different neighborhoods. These types of programs reflect the importance of youth and community-based participatory research and environmental and economic injustices as they relate to food and health.

Activism around school and institutional food is also a major area for youth involvement. There are national-level organizations (e.g., Real Food Challenge) working to advocate for and improve food procurement and food systems connected to universities and colleges. Elementary, middle, and high schools are also engaging young people to improve school food and cafeteria environments. Efforts may span local sourcing, availability of healthier and fresh foods, school gardens, and nutrition.

Youth activism in food policy is another form of youth involvement whereby young people are

becoming involved in their local food policy council, which is a group of representatives from diverse sectors of the food system that seeks to "identify and propose innovative solutions to improve local or state food systems, spurring local economic development and making food systems more environmentally sustainable and socially just" (Harper et al. 2009).

In addition to building and supporting the food justice movement, mobilization and engagement of young people in food activism fosters leadership and empowerment. In this way, the impact of youth activism extends beyond the individual activists and their specific issues into communities and societies (Sutton et al. 2006), forming critical social capital for public health and health-based social movements.

Factors Associated with Youth Engagement

Given the dearth of literature on youth food activism specifically, an overview of factors that influence how young people become involved in social justice work in general, and the impact of their work, is warranted.

Political activism is very much embedded in psychological, social, cultural, and political contexts. Children start developing an age-appropriate understanding of the world on a macro level well before adolescence. This includes perceiving realities of their world, hopes for the future, and how they want to be involved in shaping their futures (Chana 2007). In fact, civic engagement is a critical element of the transition between adolescence and adulthood, where during adolescence, young people start to become aware of political and social issues and join related groups and, during late adolescence, they start conceiving a plan for the future (Flanagan and Levine 2010). Key developmental phases of building leadership and fostering civic engagement include recruitment into youth organizing activities, skills development, formal education, and training (Ginwright 2010).

An interest in politics, often developed early in childhood or adolescence, can also be due in

large part to the role of the family. Factors such as political involvement, family values (e.g., responsibility, ethics), educational attainment, and exposure to social problems and inequities can sometimes lead young people into similar fields.

Beyond the role of family, an extensive evaluation of transformative youth development programs found that providing young people with equal opportunities and decision-making capabilities is crucial for effective personal and community-level change (Sutton et al. 2006). Key organizational factors that contribute to effective youth organizing include the fostering of agency and ownership, attention to self-identity, provision of adult support, and structures for opportunities. Organizations that link youth leadership development with community development and social change and offer hands-on and meaningful opportunities for action are also a powerful influence on the development of young activists (Shah 2011). Social justice-oriented and youth-oriented organizations offer a much-needed safe space and social venue for young people to develop a sense of critical and social analysis of inequality and to connect with others while doing so, thereby fostering a collective identity (Christens and Speer 2011; Watts and Flanagan 2007). As one sociologist noted, “merely joining an organization will not turn one into a political activist if the context of that organization does not provide the individual with the cognitive engagement, capacity for political discussion, and, most importantly, political network connections needed in order to take action” (Walker 2008).

Another organizational-level factor is the notion of social movement organizations (SMO), which are organized components and building blocks of a social movement that are oriented towards movement goals. Or as Lofland describes, SMOs are “associations of persons making idealistic and moralistic claims about how human personal or group life ought to be organized that, at the time of their claims-making, are marginal to or excluded from mainstream society – the then dominant constructions of what is realistic, reasonable, and moral”

(Lofland 2009). SMOs offer a platform for which to understand how people become involved in social movements and activism. For example, the community development organizations, school-based organizations, and youth-led coalitions described earlier could be considered social movement organizations for the food justice movement.

Impacts of Youth Activism

The potential beneficial individual-level outcomes of youth participation in social action are numerous. Increasing evidence demonstrates that young people who are actively involved in their communities in meaningful roles, such as engagement in advocacy and activism, have better developmental (e.g., social skills, teamwork, initiative, responsibility), educational (e.g., attainment, motivation, intentions to go to college), psychosocial (e.g., leadership, confidence), sociopolitical (e.g., critical awareness of power, increased sense of agency), and health (e.g., quality of life, locus of control, self-efficacy) outcomes.

Additionally, youth participation is viewed as a critical and powerful process for strengthening knowledge and transferrable skills (e.g., research, strategic thinking, public speaking) and addressing institutional and systems-level changes, such as health inequalities of young people. Those who take part in social action as youth have been shown to have stronger ties with their communities and a greater understanding of their own health status and behavior. This can lead an increased sense of empowerment, as well as improved health outcomes and the potential to become local health advocates (Christens and Dolan 2011; Suleiman et al. 2006; Syme 2000). It is important to note that these types of outcomes are not universal and the ways in which they differ by individual or experience need further exploration.

On a community level, the media and public consistently characterize young people with negative stereotypes – of challenging authority, succumbing to negative peer pressure, dealing

with conflict, engaging in violence or other risky behavior, etc. (Camino and Zeldin 2002). This, in conjunction with few and inequitable opportunities for young people to be civically engaged, reinforces stereotypes that young people are uninterested in and unable to engage with communities and participate in social change. Youth-serving organizations, however, can challenge these norms and shift how communities and adults consider young people by reframing the perception of youth as “problems” of society to “resources” or agents of change (Checkoway et al. 2005; Zeldin et al. 2000). An evaluation of youth organizations supports these findings. Youth who worked with adults and participated in decision-making processes within an organization positively altered adults’ perceptions of young people’s social and cognitive competence, responsibility, contribution, and commitment (Zeldin et al. 2000). While there are challenges with attributing specific community-level outcomes to young people in decision-making roles (as this requires a long-term assessment within and across multiple organizations and agencies) (Zeldin et al. 2000), changes in norms on all levels are critical for establishing conditions for policy change (Nathanson 1999).

Summary

The food justice movement is a rapidly growing social movement aimed at addressing and advocating for healthier, local, affordable, safe, equitable, sustainable food and food systems. Given the rise in obesity and other noncommunicable, diet-related health problems and the persistence of food insecurity among many vulnerable populations, the involvement of young people in this movement has the potential to bring forth transformative changes to the food system and thus reduce food-related health problems. This is particularly important as a disproportionate percentage of minorities bear the burden of obesity, food insecurity, and its health consequences. While this entry focuses on the United States, young people all over the world are engaging in this movement, identifying as food activists and

transforming communities – through community gardening and sustainable farming, nutrition education, farmer’s markets, food policy councils, anti-marketing campaigns, policy advocacy, and much, much more.

Cross-References

- [Community-Supported Agriculture](#)
- [Environmental Justice and Food](#)
- [Food and Health Policy](#)
- [Urban Agriculture](#)

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